Smart Home Asset Tracking

Semtech's LoRa Technology Enables Smart Home Asset Tracking

DESCRIPTION

LoRa® devices and wireless RF technology (LoRa Technology) is making it easy and economical for consumers to dive into the Internet of Things (IoT). With affordable sensors, gateways and tracking devices, families can also experience the same IoT benefits, including asset tracking and real-time monitoring, as enterprises and global organizations.

LoRa Technology enables smart home devices to be interoperable and coordinate across an expansive distance, enabling better asset monitoring and smarter grid behaviors. Using typical wireless technologies for this type of application would increase bandwidth and power costs, but with LoRa-based devices, low amounts of power and wireless bandwidth are utilized.

BENEFITS

Consumers often have many safety concerns regarding their children. These include tracking a child's location in an urban environment and monitoring items including bicycles.

The average consumers typically are not able to spend thousands of dollars on expensive IoT devices and enterprise gateways. They are also unable to pay for expensive business asset management platforms and do not have access to proprietary wireless networks such as those used in enterprise IoT devices.

Leveraging LoRa-based devices, all of these problems can be solved at a low cost to consumers. Individual sensors can be marketed at between $15 and $20 USD, with gateways running between $30 and $50 USD.

APPLICATION

A family wants to remotely monitor their young children's location as they play in a suburban neighborhood.

SEMTECH'S LoRa TECHNOLOGY FOR SMART HOME ASSET TRACKING

HOW IT WORKS

Semtech's LoRa Technology enables real-time tracking of objects and people in an affordable consumer market.

1. Parents buy a package of LoRa-based sensors and gateway. They install the sensors on doors and windows as well as on the children's bicycles and connect the gateway in the home.

2. Each sensor transmits data to the home using LoRaWAN™, a Low Power Wide Area Network (LPWAN) specification. The sensor can reach the gateway from up to 20-30 miles.

3. Cloud-based software available through the web or on a mobile device alert parents where their children are in real-time, as they walk down the street or to a neighbor's house.

4. If tracking is needed elsewhere, an affordable gateway can be installed in that location. Given internet access, the gateway can then send tracking information back to the parents. Data is uploaded to the same central web-based application, giving parents the dashboard for tracking their children.

5. The parents' tracking application can also alert them if a window or door is opened while they are not home. Alerts can also be sent to neighbors or family members if the parents are out of town.
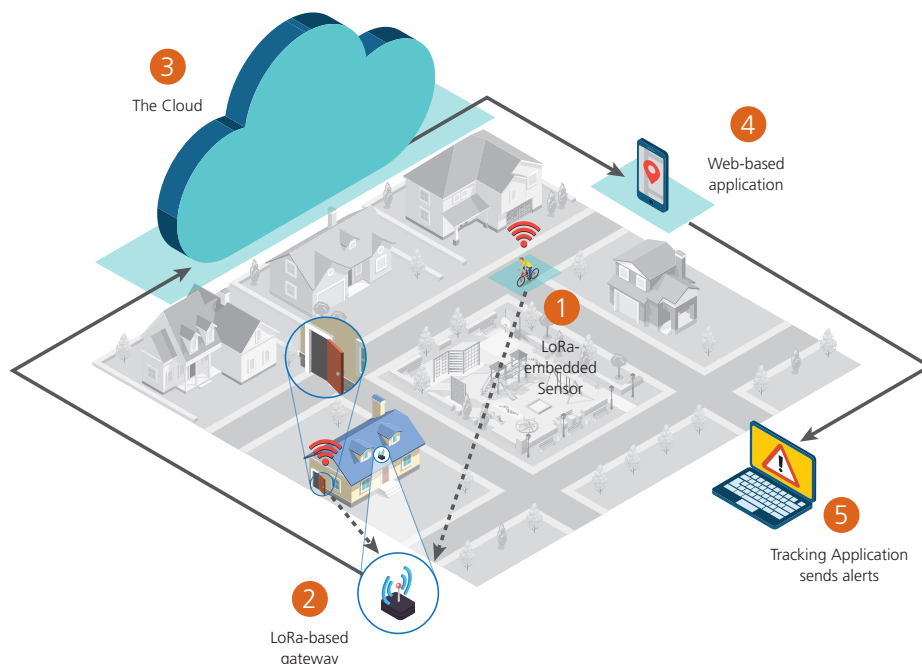
REAL USE CASE SOLUTION

TrackNet offers an array of sensors and gateways based on LoRa Technology. The LoRa-based devices transmit data through gateways to track family members and objects. TrackNet selected Semtech's LoRa Technology because of its long-range wireless coverage and low power consumption. Installing TrackNet's Tabs provides wireless coverage over a neighborhood or high-rise building. As additional consumers install Tabs, the devices collaborate to deliver broader coverage for sensors.

LOW COST

Consumer devices must be low cost in order to penetrate the market. With multiple competing products, it is important for all aspects of a product to be affordable. LoRa Technology provides all of these cost benefits and will continue to lower costs into the future through new research and product lines.

SECURE

Multiple layers of security ensure devices are tracked safely and central management of all devices ensures every piece of hardware on a network is up to date.

3 The Cloud

4 Web-based application

1 LoRa-embedded Sensor

5 Tracking Application sends alerts

2 LoRa-based gateway

Semtech Products used in this application:

Sensors
• *SX1272/3*
• *SX1276/7/8/9*

Gateway
• *SX1301*

All application elements (sensing modules, gateways, servers, software) are available through LoRa Alliance™ partners.

REAL USE CASE SOLUTION CONTINUED

LONG RANGE

LoRa Technology provides the longest range at the lowest power. LoRa-based devices can transmit data as far as 30 miles, ensuring that both urban and rural areas can be covered for tracking.

STANDARDS-BASED

LoRaWAN is an open standard and supported by the LoRa Alliance™. TrackNet can sell products that have assured global interoperability and benefit from the economies of scale that reduce unit costs and further accelerate its adoption.

JUMP-START YOUR IOT DEVELOPMENT TODAY

TRAINING OPTIONS TO GET STARTED

Learn about Semtech's LoRa Technology platform
www.semtech.com/iot

Join the LoRa Community
www.semtech.com/LoRaCommunity

Become a member of the LoRa Alliance™
www.lora-alliance.org

Attend a LoRa Boot Camp for a full-day of training featuring LoRa Technology and real world applications
www.semtech.com/iot

Follow Semtech on LinkedIn and our LoRa Showcase page

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