AVNET® /IOTCONNECT®

Bringing the power of ML and AI to Smart City solutions

Challenges

Smart Cities require a complex supply chain of specialist suppliers

Smart city applications need to be easy to deploy, reliable, and adaptative. Bringing a solution to market involves multiple disciplines. It needs data scientists, hardware suppliers, and firmware developers, each a specialist in their field. These specialists operate in different hemispheres of the IoT.

A single application can require two types of intelligent solution. One sits at the edge; energy-efficient, always-on hardware running machine learning (ML) algorithms. These smart endpoints are the eyes, ears and brains of the solution.

The other uses powerful processors running neural networks and artificial intelligence (AI) in the cloud, to train the machine learning models. The cloud solution must also manage the smart endpoints, providing security and OTA updates.

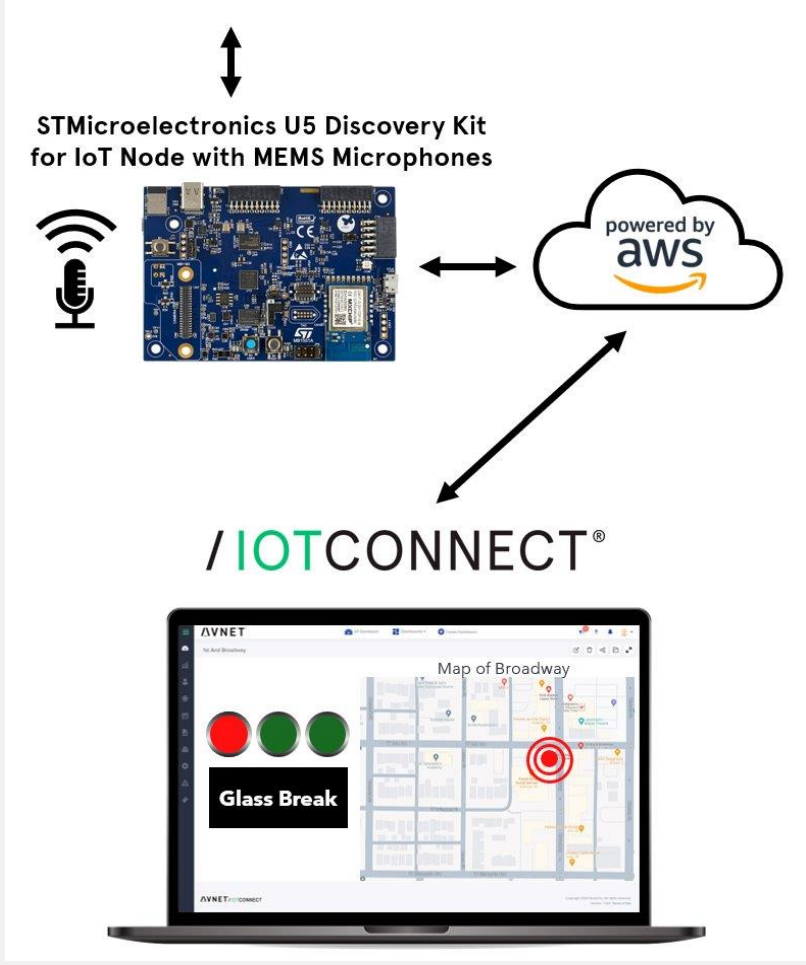
The AVNET Solution

Development and delivery as a seamless, end-to-end service model

Avnet provides the technology to successfully bring the two hemispheres of the IoT together. As a software technology provider, and world leader in electronic component distribution and supply chain management, Avnet delivers true end-to-end enablement to smart cities.

The success of smart city applications relies on the industry's leading semiconductor suppliers and the world's best IoT cloud platforms. Avnet's focus is on providing the technology and resources needed to connect smart city stakeholders with OEMs, semiconductor manufacturers and cloud providers.

Avnet is working with AWS to bring true end-to-end services to the smart city integrator.



Benefits

Avnet's pre-defined and configurable smart city solution focuses on the system integrators' biggest challenges: complexity, security, and scalability.

Pre-integration

Avnet reduces complexity by providing IoT technology that is pre-integrated with the leading hardware solutions targeting smart city applications.

Security built-in

Avnet's IoTConnect software has security at its core. This security extends from the cloud to the edge of the network.

Designed to scale

IoTConnect seamlessly scales from tens to millions of connected devices, with full lifecycle management for every endpoint, managed through the cloud.

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powered by aws

AVNET®

/IOTCONNECT® on AWS

IoTConnect from Avnet is a software platform for deploying and managing large scale IoT applications. IoTConnect resides in the cloud and at the edge and uses both software and hardware components to integrate into AWS IoT and connected endpoints, providing a complete end-to-end solution.

To ensure consistent reliability and security, IoTConnect relies heavily on the IoT cloud provider to maintain the best possible experience. AWS is the perfect partner for IoTConnect, delivering scalable performance and reliable operation.

Avnet has designed IoTConnect on AWS to target the advanced features of AWS IoT, such as AWS IoT Greengrass, and ML and AI integration. These capabilities are now easier for Avnet's OEM customers to access through IoTConnect on AWS IoT.

Explore Avnet's IoTConnect quickstart kit here

Case Study:

LACROIX

Challenges

Lacroix is at the forefront of edge AI in smart city solutions. The goal was to identify abnormal sounds and their geolocation across city blocks. This greenfield solution needed to be fast, accurate, edge-based, adaptative, low-power and scalable.

Solution

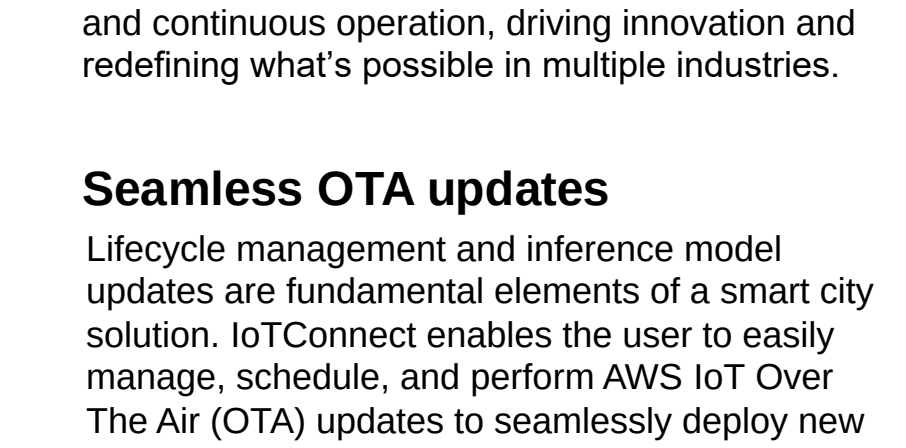
Avnet worked with STMicroelectronics to develop smart sensors running machine learning on ultra-low power microcontrollers. ST also supplied the MEMS microphones used to capture city sounds. The ML algorithm categorizes the sounds, which are sent back to AWS IoT using IoTConnect.

STM32 Cube.AI

Results

The system uses ML and AI deployed across multiple smart sensors to accurately isolate, detect, and geolocate specific noises against a loud city environment. The detectable noises include breaking glass, running water and car alarms. The flexible implementation enables the smart sensors to be managed and tuned remotely from the cloud to meet the unique conditions of the operational environment.

Access the full solution demonstration information here



Features

Accelerating Edge AI

The open-source IoTConnect EdgeAI development framework from Avnet integrates AWS ML services with STMicroelectronics AI solutions. This integration into a simple and flexible software framework enables ML model inference at the edge of wide-area networks, such as smart cities. The emphasis on performance and low power makes it perfect for resource-constrained embedded devices. This breakthrough solution unlocks real-time processing, enhanced privacy, and continuous operation, driving innovation and redefining what's possible in multiple industries.

Seamless OTA updates

Lifecycle management and inference model updates are fundamental elements of a smart city solution. IoTConnect enables the user to easily manage, schedule, and perform AWS IoT Over The Air (OTA) updates to seamlessly deploy new firmware to the ST-based hardware endpoints. With OTA there is no need for manual device updates in the field. New features and product fixes can be deployed, at scale and in real-time, across wide areas and multiple devices, remotely.

Start your Free Trial today.

Get started with Avnet IoTConnect solutions on AWS

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