MULTITECH

Solving Parking Problems

LoRaWAN® Partners Unite to Solve Parking Problems in The City of Huntington

Powered by MultiTech

Anyone who spends a lot of time driving knows that parking can be a time consuming and frustrating business. With increasing congestion, parking restrictions and fewer stopping routes, drivers are finding it increasingly more difficult to find available spots. Adding to this difficulty is the challenge of paying the parking fee after a spot is finally secured. In some areas, meters are not easy to find, require coins or sometimes are even broken, all leaving the parker with even more frustration. It was all these challenges that the City of Huntington Park set forth to tackle in developing a new easy to use parking application for its citizens.

To make it all happen the city joined forces with Nobel Systems a cloud solution provider specializing in IoT Devices for utilities and municipalities. "The city wanted to get rid of manually paying spots and the city enforcement also needs a better way to track and let customers easily pay," said Tanmay Thakur, Internet of Things/AI Engineer at Nobel. "We were excited to leverage our expertise in cloud technologies to help them find the best solution."

Nobel's vision was a system that utilized sensors that would send sensor data to users via a user-friendly application. The city at the onset suggested utilizing LoRaWAN®, a Low Power Wide Area (LPWA) networking protocol designed to wirelessly connect battery operated 'things' to the internet, and services that support it. They also had specific wireless and gateway provider recommendations. Early in the process, it was determined that the Helium Network, the largest, public LoRaWAN network in the world, would be their choice for the wireless network and MultiTech as its ideal gateway provider. "We knew early on that utilizing LoRaWAN was our best course of action. Helium is one hundred percent compatible with MultiTech's gateways, so it really was a perfect fit," continued Thakur at Nobel.

"LoRaWAN technology has created new opportunities across a wide range of industries and use cases," said Stefan Lindvall, CEO of MultiTech. "Cities worldwide will learn from the City of Huntington's implementation and there is no better proof point to its effectiveness than seeing it in action. The expanding accessibility of

Problem

Increasing congestion, parking restrictions and fewer stopping routes, drivers are finding it increasingly more difficult to find available parking spots.

Solution
MultiTech Conduit® IP67

Nobel's vision was a system that utilized PNI sensors that would send sensor data using MultiTech Conduit IP67 base station to users via a user-friendly application.

Benefits

MultiTech's gateways had a much longer communication range that would lessen the number of gateways required, reducing the expense for the city.

LoRa® devices has allowed businesses to increase efficiencies, and in turn, reduce operating costs. We are proud to offer products that are part of these life changing solutions."

Nobel also did their own homework on the gateways in the field, considering solutions from competitors. "We needed the solution to be reliable in outdoor conditions, waterproof and airtight," continued Thakur. "The MultiTech gateway fit the bill. It also had a high LoRaWAN range." In a site survey of the gateway range, MultiTech's gateways had a much higher range for communication that would lessen the number of gateways required, reducing the expense for the City. "If they had opted for another vendor, they would have needed more gateways. In the end, we decided, like the City of Huntington that the **MultiTech Conduit® IP67** was also our first choice." With a corporate mission to build the largest LoRaWAN network in the world, there was no doubt either that Helium was the prime choice for the wireless networking protocol.

PlacePod sensors from PNI, IoT-enabled smart parking sensors for on-street and off-street public and private parking management, were selected as the best sensors available for the solution.

With all partners in place, Nobel set forth to make it all happen. Utilizing LoRaWAN would enable them to connect a large number of IoT sensors to the cloud cost-effectively, so the first line of order was to create a model for the parking sensors to communicate information that end users could ultimately utilize.

To start, Nobel developed an application called GeoViewer which used Helium's dedicated APIs to monitor new data received by gateways from installed IoT parking sensors. The sensors, embedded in the pavement, would monitor for vacant or occupied parking spots. Information from the sensors would then be sent, using a dedicated LoRaWAN radio frequency (RF) band, to MultiTech gateways, located above ground on nearby traffic light poles. The gateways, utilizing a cellular SIM card or Wi-Fi, would transfer data packets via the sensors to the cloud. When a new data point is received for any parking spot, the API immediately updates it on the GeoViewer Parking app, allowing end users to get immediate insight on space availability.

Today, the City of Huntington Park, has sensors placed at all the required 1,460 parking spots. MultiTech's gateways are installed and running, receiving the real-time data from all the in-ground sensors. The citizens of the city are relieved to have a solution that makes their life easier and city officials are also pleased to have a solution in place for more efficient payments for its parking fees.

"Because it is running on Helium, we can easily increase the scale to additional sensors if necessary. Similar parking solutions require more infrastructure, such as dedicated RF network antennas and wiring to deploy such large applications," said Thakur. "With the right technologies and the right partners in place we were able to create a solution that worked for everyone. In the end, it's the citizens and city officials that reap the benefit and that was our original goal."

Looking forward to the future, Nobel intends to develop additional solutions that utilize the MultiTech Conduit IP67 Base Station with Helium in new markets such as water utilities and health and sewer monitoring, to name a few. "It has really given us the ability to easily setup a LoRaWAN network with minimal configuration and the possibilities for innovation utilizing this combined solution are endless."

For additional information, contact: sales@multitech.com

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Internet of Things /AI Engineer
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