

# Alphatronics Cleans up Waste Management

October, 2018

Case Study

## Company Snapshot

Company Name: **Alphatronics**  
Industry: **Access control solutions**  
Size: **50 employees**  
HQ: **Ghent, Belgium**  
Arm Solution: **Pelion IoT Platform**

## Goal

Develop an IoT-connected access control system to manage access for authorized local users and monitor site containers to determine when they are full enough to merit a service call.

## Solution

Alphatronics is leveraging the Arm Pelion IoT platform with its support for new and emerging cellular connectivity standards to provide low cost, low-power connectivity in rural locations without wired access to communications or electricity.

## Benefits

- + Ease of connecting IoT to existing infrastructure.
- + Support for industrial connectivity standards.
- + Low-power requirements.
- + Expert support to help reduce time to market.

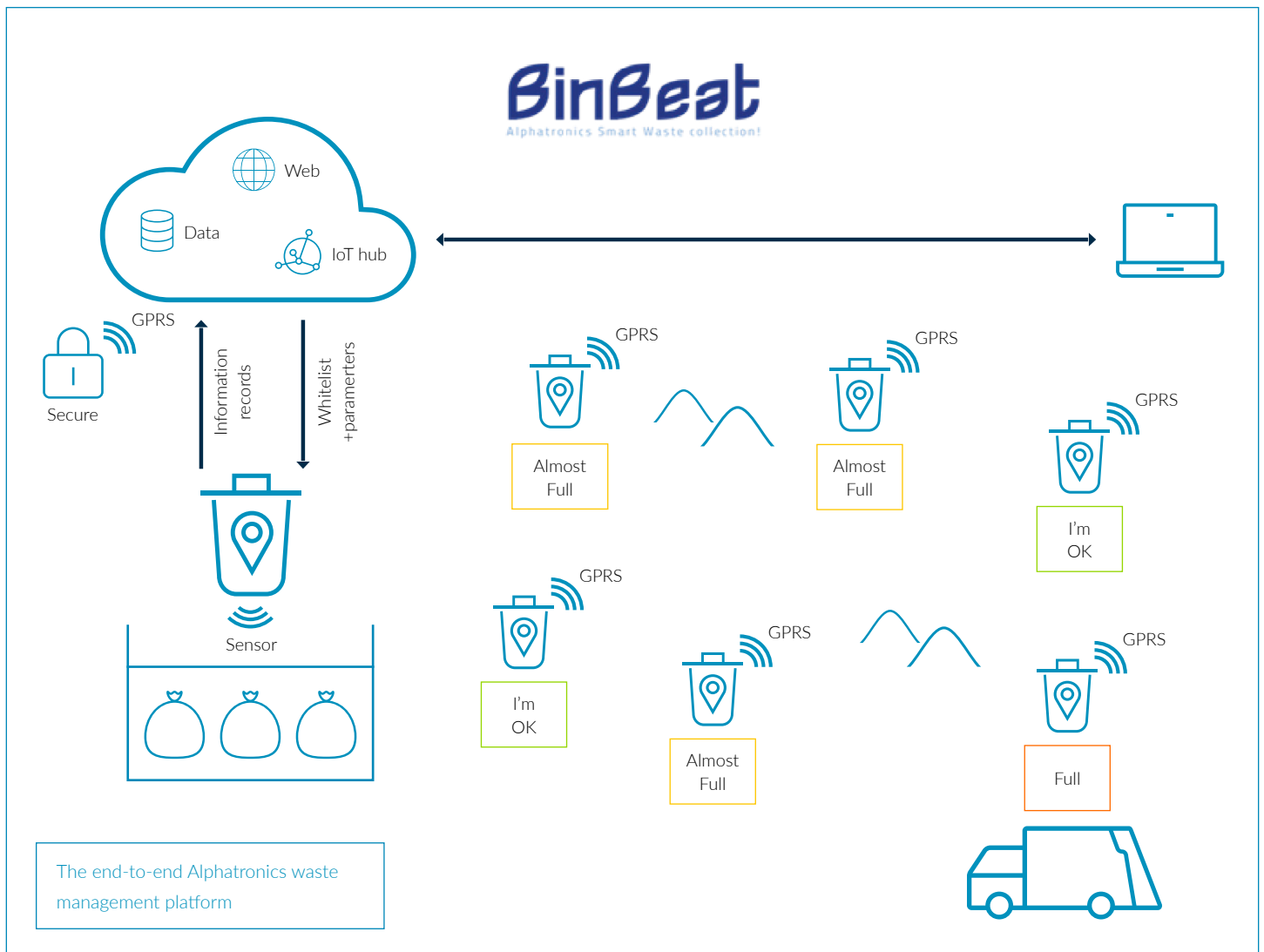
## Arm and Alphatronics deliver IoT solutions to waste management market

Belgium takes its recycling and waste management very seriously. The Flanders area of Belgium boasts the highest percentage per capita of recycled domestic and industrial waste globally, and Alphatronics played a key role in making the country's waste management program so successful.

For 30 years, Alphatronics has been a leading developer of automated control systems used to grant users access to remote waste recycling centers and other industrial sites. Alphatronics also designs systems that measure the amounts of waste disposed by each user for billing and regulatory compliance.

So, it was no surprise when Alphatronics got a call from a French waste collection company asking for help. The waste collection company operates a fleet of trucks responsible for collecting recyclables and garbage from more than 350 facilities throughout France, with many sites located in remote rural communities. The company was wasting manpower and fuel by dispatching trucks to a waste management site only to find the containers almost empty, making the service call unnecessary and driving up operating expenses.

The company asked Alphasatronics to develop an IoT-connected access control system that could not only manage access for authorized local users to enter the site, but also monitor the site's containers to determine when they are full enough to merit a service call. Since the customer forecast a demand of 5,000 access control units over seven years, including ongoing support and maintenance of the units, Alphasatronics started work on a solution.

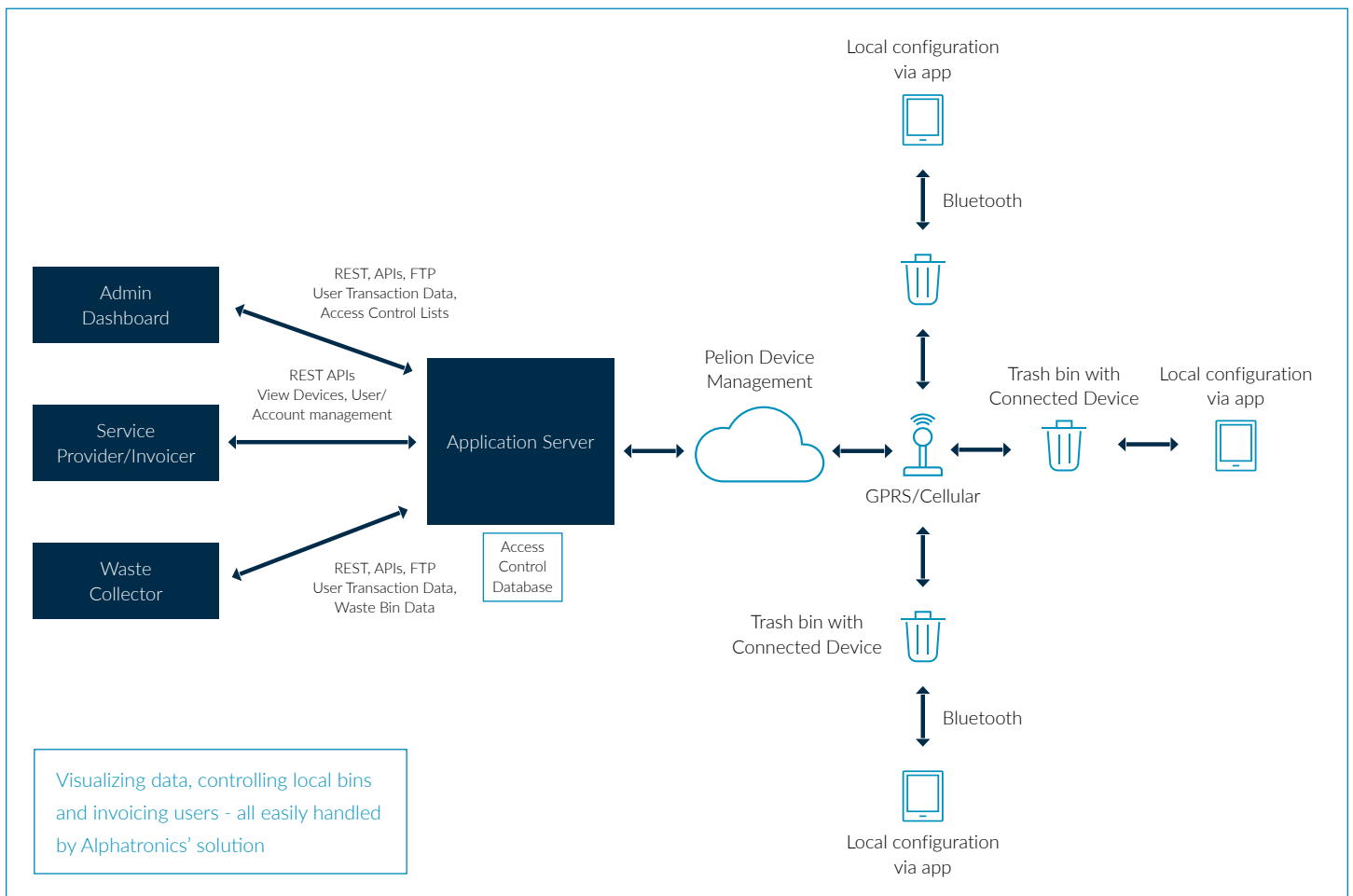


### Bringing IoT connectivity to remote sites

To develop an access solution that met their customer's needs, Alphasatronics created a design with lowpower operation and strong support for industrial connectivity standards. As many of the waste management sites are in remote areas with no nearby power lines, the access systems had to be powered by solar panels and batteries. And while Alphasatronics determined that GPRS was the best connectivity option for its French customer, it had to support other standards in case future customers had different connectivity requirements.

Additionally, Alphasatronics didn't have enough time to develop an entire solution from scratch as it had done in the past; the customer's tight deadline required the use of an existing IoT platform to shorten development time. After careful consideration, the Alphasatronics team selected a microcontroller (MCU) from ST Micro, Arm mbed OS, and the Arm Pelion device management platform as the hardware/software platform for their product.

The team chose Arm because of its strong support among microcontroller vendors, its broad portfolio of connectivity IP and native API support for sleep and low-power modes to keep power consumption at a minimum. The quality of Arm's customer service and support also proved instrumental in bringing the new access control system to market.



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#### Working with Arm makes IoT easier

“Once we knew GPRS was the best connectivity solution for the access control system and Pelion was the best fit, we faced a daunting challenge: no one had previously used that combination in a remote device management application,” says Jasmien Vanvooren, COO at Alphasatronics. “Arm provided us with a dedicated application engineer who worked with us for three months to help develop our software. Arm’s commitment to our success is why Alphasatronics could deliver the waste management industry’s remote access system with support for remote device management over GPRS.”

Alphasatronics designs and deploys control systems that are truly modular and versatile, applicable for a wide array of potential customers and supporting a variety of connectivity and device power options. In the future, it plans to support additional connectivity standards like Wi-Fi, LPWAN (LoRa/NB-IoT) and 3G/4G cellular.

Mbed OS and the Pelion IoT platform have the software stacks and modem drivers Alphasatronics needs to quickly re-engineer access control solutions on a platform that is easy to use and secure. Alphasatronics is looking at deploying solutions for use cases beyond waste management where Arm’s Pelion platform can serve as the backbone, such as automated locking systems for bicycle storage lockers and other public access facilities.

Learn more about the [Arm Pelion IoT Platform](#).

