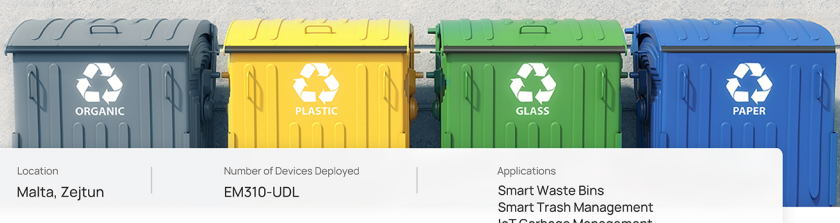
Smart Waste Bins

By leveraging the capabilities of IoT, Milesight revolutionizes waste management, making cities cleaner, greener, and more sustainable.

Location：Malta, Zejtun

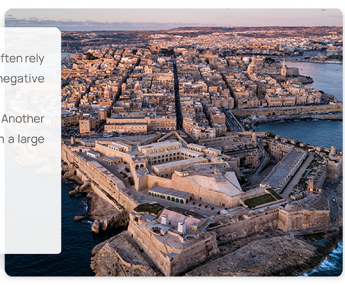


Milesight Partner	Location	Number of Devices Deployed	Applications
AIS Technology Ltd.	Malta, Zejtun	EM310-UDL	Smart Waste Bins Smart Trash Management IoT Garbage Management

Background

As urban populations grow, so does the challenge of managing waste efficiently. Traditional waste management systems often rely on fixed schedules for garbage collection, leading to unnecessary fuel consumption, increased operational costs, and negative environmental impacts. Enter the Smart Waste Bin IoT Solution - a game-changer in the realm of waste management.
One of the requirements of the project was to have a sensor that communicates in a reliable manner from across the island. Another requirement was to have sensors that have a long battery life, since having batteries that would need to be changed on a large number of bins on a regular basis, would be costly and difficult to manage.

- Smart Waste Bins
- Smart Trash Management
- IoT Garbage Management



Challenges

Fixed Collection Schedules

Traditional waste management relies on fixed collection schedules, which may not align with the actual fill levels of bins. This results in unnecessary pickups and wasted resources.

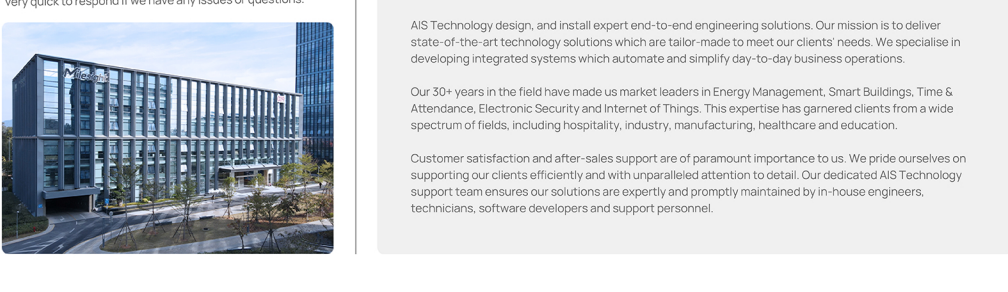
Inefficient Routing

Without real-time data on bin fill levels, waste collection routes are often predetermined and may not be optimized. This can lead to increased fuel consumption, higher operational costs, and traffic congestion.

Overflowing Bins

Fixed schedules may lead to overflowing bins, especially during peak usage periods. Overflowing bins pose environmental and public health risks, as waste may be scattered, and the area becomes unsightly.

Solution



The traditional waste management system is undergoing a transformative shift, thanks to the integration of Internet of Things (IoT) devices into smart waste bins. These innovative solutions leverage technology to optimize waste collection processes, improve efficiency, and contribute to a more sustainable environment. In this blog post, we'll explore the key features and benefits of a smart waste bin solution with IoT devices.

A large number of bins that are used to collect recyclable waste, that is, plastic, paper, metal, and glass, are scattered around Malta. The aim is to recycle anytime, anywhere. To manage the logistics for such a large number of bins, sensors which measure the fill level of the bins were required. This was done such that, the information collected from these sensors is displayed on a website and a mobile application.

To meet these needs we decided to choose Milesight EM310-UDL Ultrasonic Distance/Level LoRaWAN® sensors.

With dual ultrasonic beams, the advanced EM310-UDL measures from 3 cm up to 450 cm, thus has an ultra-short blind zone. And the built-in 3-axis accelerometer allows you to recognize objects' movement efficiently and reliably. The EM310-UDL has sufficient range for the small island of Malta, hence only requiring a small number of gateways. These sensors would then connect to a network server such that it can transfer the data to a database. The website and mobile application would then utilize the processed data to display useful information to the users.

The Milesight Ultrasonic Distance/Level sensors would send data at a fixed interval such that the managers would know when the bins are full, and hence need to be dumped. Also, a user can check, prior to going to the bin site, where is the closest bin site, which does not have full bins. This lead to a reduction in the bin site over-flowing and a more convenient process for the population of Malta.

The Smart Waste Bin IoT Solution is a testament to the transformative power of technology in addressing real-world challenges. By leveraging the capabilities of IoT, we can revolutionize waste management, making our cities cleaner, greener, and more sustainable. As we embrace these innovations, the future of waste management looks brighter than ever before. Let's build a world where even our waste contributes to a smarter and more connected future. been removed and they are able to effectively use the water consumption data for their reports.

Results

Efficient Collection

With real-time fill level data, waste collection routes can be optimized, reducing unnecessary pickups and improving operational efficiency.

Cost Savings

Optimization leads to cost savings by minimizing fuel consumption and streamlining collection schedules.

Environmental Impact

By reducing unnecessary trips, the carbon footprint associated with waste collection is significantly decreased, contributing to a greener and more sustainable environment.

Data-Driven Decision-Making

Historical data and analytics empower decision-makers to make informed choices, ensuring long-term sustainability and resource allocation.

Discover More about Milesight Product

EM400
TLD ToF Laser Distance Sensor

UG Series
Milesight UG Series LoRaWAN® Gateway

EM310
Ultrasonic Distance Level Sensor

Why Choose Milesight

There were multiple advantages for using Milesight products. One of them being the easy to program to interface, which can be simply done with a phone. Also, the support team is very quick to respond if we have any issues or questions.

About AIS Technology Ltd.

AIS Technology design, and install expert end-to-end engineering solutions. Our mission is to deliver state-of-the-art technology solutions which are tailor-made to meet our clients' needs. We specialise in developing integrated systems which automate and simplify day-to-day business operations.

Our 30+ years in the field have made us market leaders in Energy Management, Smart Buildings, Time & Attendance, Electronic Security and Internet of Things. This expertise has garnered clients from a wide spectrum of fields, including hospitality, industry, manufacturing, healthcare and education.

Customer satisfaction and after-sales support are of paramount importance to us. We pride ourselves on supporting our clients efficiently and with unparalleled attention to detail. Our dedicated AIS Technology support team ensures our solutions are expertly and promptly maintained by in-house engineers, technicians, software developers and support personnel.