

IoT Waste Management

Smart system for waste management

Features

- Simple and clear administrative portal
- Overview of all containers by regions / zones
- Sensor data are transmitted via the NB-IoT network in real time
- Easy route planning and optimization beyond city / municipal boundaries
- Emptying the tank as needed
- Tank or lid tilt angle detection (opening, tipping, emptying or removal)



Product description

Waste management platform is an advanced system for remote measurement of waste tank level and collection optimization. It consists of a wireless sensor for measuring the occupancy, a web-based management application and a mobile application for navigating the driver on defined route.

Sensor has been developed for universal use in all types of waste containers. His compactness allows operation in the most difficult weather conditions.

This is the first type of 80 litre tank that is visually acceptable for installation in any city centre, clad in Cumaru wood (Brazilian teak) which is 120% denser than oak and has Class A fire resistance, which means it is resistant like steel or concrete, and at the same time beautiful structures, easy to maintain and environmentally friendly.

It is not allowed to put garbage bags in the waste bins as it can lead to incorrect reading of the bin filling!

Planning and prediction

Web platform enables the organization of waste collection by zones and suggests when to empty the containers and which containers should be visited in order to empty them at the right time.

The platform automatically generates the optimal route for collecting the containers according to the type of waste, certain zones and sends them to the mobile app in the collection vehicles

Key advantages

The use of the IoT Waste Management platform enables up to 50% in direct vehicle savings and waste collection logistics, which avoids overfilled tanks and empty CO2 runs per tonne and automatically reduces congestion and noise.

The use of the IoT Waste Management platform suggests the need to increase the number of tanks per location, especially with occasional needs at construction areas, shopping malls or public gatherings.

Optimizing waste collection by planning and reducing the number of vehicles, reduces the amount of harmful gas emissions and directly affects the quality of the environment.

The system can work parallel with Mobilisis Fleet management applications, which makes it even more flexible in smart management of waste collection costs.

Application

- Open and closed parking lots
- In the squares and streets of the city
- Possible installation in any type of tank, regardless of purpose or capacity
- At public and sports gatherings
- At construction site locations

Sensor specification		IoT Waste Management
Type of power supply		2 x Li-ion AA batteries
Voltage [V]		From 2,7 to 3,6
Communication		NB-IoT: B1, B2, B3, B4, B5, B8, B12, B13, B17, B18, B19, B20, B25, B26, B28, B66 Bluetooth Low Energy 4.2 (2,4 GHz)
Sensors	Accelerometer	Measurement rank: up to 16 G
		Frequency: 1 to 5376 Hz
	Temperature	Measurement rank: from -55°C to +125°C
		Accuracy: ±1°C between -25°C and 100°C
		Accuracy: ±2°C between -55°C and 125°C
2 x Ultrasonic	Measurement length: up to 4 metre	
CPU		Ultra-Low Power ARM Cortex-M
Operating Conditions	Temperature	from -30°C to +70°C
	Humidity	5% to 85% (without condensation)
Storage temperature		On 21°C on 20 % relative humidity
IP class		IP65
Battery lifetime of sensor		Up to 5 years*
Device dimensions (L x W x H) in mm		118 x 57 x 31
Specification of waste bin		IoT Waste Management
Material		Galvanized steel and tropical wood Cumaru (exterior) Stainless steel waste bin (inner part)
Colour		Any RAL colour
Dimensions (W x L x H) u mm		440 x 440 x 950
Volume of waste bin in litre		80
Weight of waste bin in kilograms		41

* Depends on active working conditions