

trinity**SWM**

Solid Waste Management Platform



BUILD SUSTAINABLE & CLEAN CITIES

Integrated Platform for Solid Waste Management

Spatially powered intelligent application platform automates the entire process of Solid Waste Collection and Management.

The Web Application Platform integrates various functions of scheduling and planning, fleet operations, IoT Devices and Sensors - RFID & Bin Sensor, Field Workforce Integration and Reporting . It provides a seamless citizen interface for complaint management.

The Platform provides advanced Geo-Location capabilities and support rich Spatial functionalities that is essential for enabling & optimising Solid Waste Management operations.

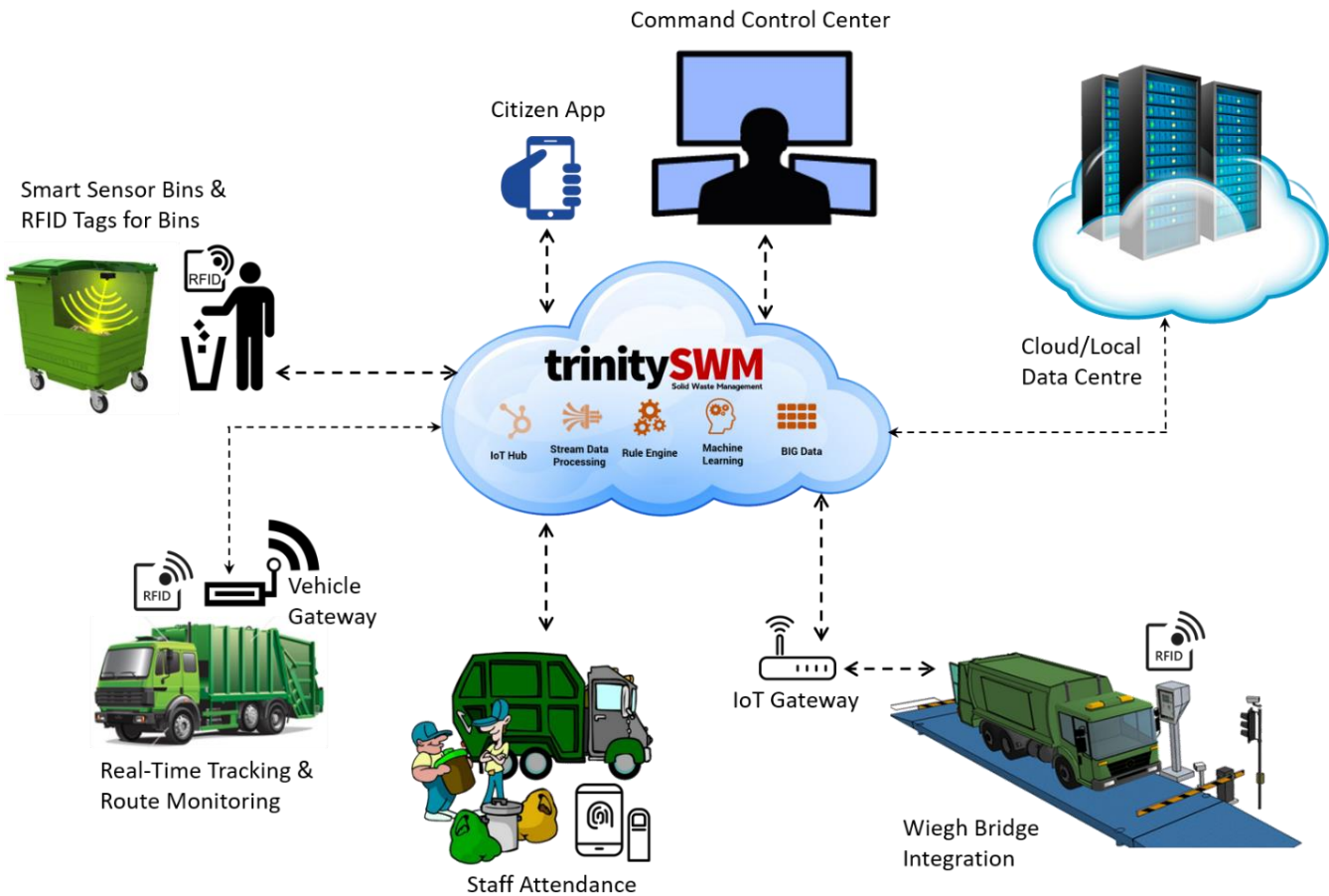
Key Benefits

IoT based bundled solution to interconnect sensors & devices and aggregate data.

The Platform can be deployed on-Premises or through cloud service and delivered through Software-as-a-Service Model.

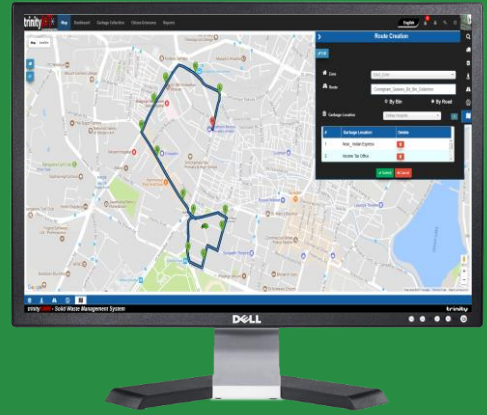
The GIS Platform is integrated with Google Map and support rich Spatial functionalities.

Platform Overview



Key Features

- ✓ The application uses advances in GIS technologies for route scheduling, route monitoring, and Route Optimization, Geofence based updates and Map based Visualization of the Vehicles
- ✓ Understand the Bin Fill Level through Sensors and do the scheduling of collection based on the fill level instead of having fixed routes for collection.
- ✓ Use of RFID Tags on Bin to understand the status of Garbage Collection Status.
- ✓ Use of GPS Sensing to understand the locations of the Fleet and integrate the GPS locations.



Real Time Tracking



Trip Scheduling



Events & Alerts



Citizen Grievance



Smart Bin Integration

The Smart Bin System will cover the integration of the Bin Sensors – Volume Sensors fitted to the Bins to the integrated Solid Waste Management Platform. The Bin Sensors data will be collected, communicated, aggregated, processed by the IoT Hub for real time values .

The Application enable easy visualization of the Bin Alerts and provide operators with the intelligence to take action in dispatching the right resource

RFID Based Garbage Collection

RFID Reader mounted on the Vehicle reads the Bin Tags when the Bin is lifted and is in close proximity to the Reader and transmit to Solid Waste Management Application System so that the bin collection status is updated and used by the application for viewing and reporting.

Vehicle Gateway, IoT based data logger collects all the data including GPS data. It connects RFID Reader, Smart Card Reader and the Vehicle Weight Sensor System.

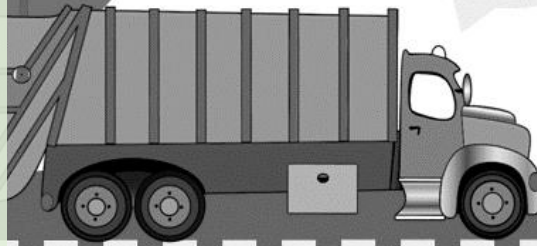


Weigh Bridge Integration

IoT gateway installed at the Dumping ground integrated with entry gate RFID Reader to identify the vehicle using windshield tags capture weight from the weigh bridge and transmit the same to the application. This will enable total the weight for the trip carried out by the vehicle to be computed. Also, the entry/exit operations can be automated through boom barrier integration.



Workforce Integration through Mobile App

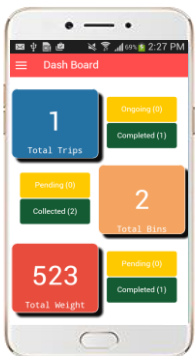


Field Staff Attendance & Movement

GPS based mobile device provided to the supervisor enables filed staff attendance/presence through biometric. In addition a mobile device with app equipped with staff can periodically track the location of the staff and shall map it in the system with the pre-defined area coordinates.

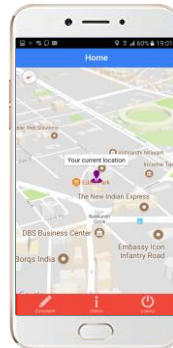


Driver App



The application enables the staff to accept job cards for the driver and navigates to the location as per the job card. Upon completion of the work the driver takes a picture of the location and updates to the system for the proof of service of the work completed. Driver can associate himself to the vehicle through the given mobile application.

Citizen App



Citizen can lodge the complaint through the app. The app will locate the location on the map and citizen can take a photo and update as reference to the complaint.

All these complaints are captured and are made available for action in Citizen Grievance application.

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