PROJECT DESIGN PHASE-II

FUNCTIONAL REQUIREMENT

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| Team ID | PNT2022TMID52303 |
| Project Name | SMART WASTE MANAGEMENT SYSTEM FOR METROPOLITIAN CITIES |

# Functional Requirements:

Following are the functional requirements of the proposed solution:

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| **FR No.** | **Functional Requirement (Epic)** | **Sub Requirement (Story / Sub-Task)** |
| FR-1 | Detailed bin inventory. | * All monitored bins and stands can be seen on the map, and you can visit them at any time via the Street View feature from Google. * Bins or stands are visible on the map as green, orange or red circles. * You can see bin details in the Dashboard – capacity, waste type, last measurement, GPS location and * collection schedule or pick recognition. |
| FR-2 | Real time bin monitoring. | * The Dashboard displays real-time data on fill-levels of bins monitored by smart sensors. * In addition to the % of fill-level, based on the historical data, the tool predicts when the bin will become full, one of the functionalities that are not included even in the best waste management software. * Sensors recognize picks as well; so you can check when the bin was last collected. * With real-time data and predictions, you can eliminate the overflowing bins and stop collecting half-empty ones. |
| FR-3 | Expensive bins. | * We help you identify bins that drive up your collection costs. The tool calculates a rating for each bin in terms of collection costs. * The tool considers the average distance depo-bin- discharge in the area. The tool assigns bin a rating   (1-10) and calculates distance from depo-bin discharge. |
| FR-4 | Adjust bin distribution. | * Ensure the most optimal distribution of bins. Identify areas with either dense or sparse bin distribution. * Make sure all trash types are represented within a stand. * Based on the historical data, you can adjust bin capacity or location where necessary. |
| FR-5 | Eliminate unefficient picks. | * Eliminate the collection of half-empty bins. The sensors recognize picks. * By using real-time data on fill-levels and pick recognition, we can show you how full the bins you collect are. * The report shows how full the bin was when   picked. You immediately see any inefficient  picks below 80% full. |
| FR-6 | Plan waste collection routes. | * The tool semi-automates waste collection route planning. Based on current bin fill-levels and predictions of reaching full capacity, you are ready to respond and schedule waste collection. * You can compare planned vs. executed routes to   identify any inconsistencies. |