

Software Requirements Specification

for

Road Repair And Tracking System(RRTS)

Version 1.0

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1. Introduction

1.1 Purpose

The purpose of this document is to define the requirements which the Road Repair and Tracking System(RRTS), must meet. The system is to be developed as an Online Portal for record keeping activities associated with the road repairing task of the Public Works Department of the Corporation of any large city. This document holds all the relevant information to start development.

1.2 Intended Audience and Reading Suggestions

The document is intended for the developers, project managers and users who wish to view the system requirements and specifications. The rest of the document has been categorised into overall description, functional requirement, non-functional requirements and goals of implementation.

1.3 Product Scope

The purpose of this system is to provide an invaluable platform for the residents of a large city (having large number of residents) and the workers of Public Works Department to communicate, coordinate, integrate and give feedback on the repair and maintenance of various damaged roads in the city. The system will enable the registered residents to complain/raise repair requests for specific roads in any area of the city. The system will also coordinate the work of the Public Works Department by enabling them to access the grievances of the residents and also assist the Department to maintain and monitor the available resources for road repair and schedule repair tasks accordingly.

2. Overall Description

2.1 Product Perspective

In a large city with an ever increasing population striving for more development the number roads will increase by substantial rate. In such a scenario the requirement of a transparent tracking system for the maintenance of roads is inevitable as complete surveillance of all the roads by Public Works Department is improbable. For example a resident has spotted the anomalies in any road while traversing but he/she is unaware of the grievance system or does not have time to report complaint in Public Works Office physically by person. This is a very painful situation which needs to be taken care of.

Road Repair and Tracking System(RRTS) can act as a viable solution to this problem. This is a web based system which any resident can open in their mobile devices/tablets/laptops and register their complaint mentioning the location and road. As a result, the Department can now take necessary action required by examining the location and specifying the resources required for the repair.

2.2 Development Environment and Constraints

The system will make use of Java and JavaScript for the Front-End part. This system will have internet accessibility to enable users and maintainers to coordinate and communicate via the web.

2.3 Assumptions

The maintainers will update the data regarding the availability of various resources like availability of manpower, machines and raw materials etc.

3. Functional Requirements

3.1 Inputs

- a) Record the complaint by the user raising the repair request for a road clearly mentioning the name of the road, exact location where the problem has occurred and a brief description of the problem that is associated with the road that the user wants to bring to the notice of the officials.
- b) Record the data regarding severity of damage to roads including the priority order of their repair work and the exact requirement of resources like manpower, machines, raw materials etc from the supervisors
- c) Update the resource availability data at any time from the administrators.

3.2 Processing

- a) Process the complaint list of roads in various areas from users and generate a list of damaged roads for the supervisors to inspect by allocating the workload based on geographic area to the supervisors.
- b) Analyse the priority order of repair work and optimally decide a schedule for the work taking into consideration the availability of resources.
- c) Process and update the resource availability data from the administrators.
- d) Retrieve and generate the statistics for the overall status of work completed or outstanding including data like number of roads repaired and the resource usage for any particular work like money, manpower, machines etc.

3.3 Outputs

- a) Generate the area-wise list of fresh complaints for the respective supervisors based on previous allocation.
- b) Generate a detailed and scheduled report for repairing of the roads.
- c) Generate statistics regarding all the repair work completed or pending and distinctly mention the resource utilised for the commencement of the work.

4. Non-functional Requirements

4.1 Performance Requirements

The primary performance requirement is the capability of the system to function with low speed of the internet connection and consumption of low data.

4.2 User-friendliness

The system will have a user interface that is very intuitive and easy to register complaint for the users. The Front-End of the system will be very intuitive and easy to understand.

4.3 Security

The primary security concern of the system is not to leak the information of the users registering the complaint and strictly being able to maintain the anonymity of the users. Under no circumstances is the anonymity of the users registering complaint will be made public.

5. Goals Of Implementation

5.1 Feedback

The system will incorporate changes based on the feedback of the users sharing their experience in using the system including factors like complaint processing time and timely repair of the roads.