Software Requirements Specification

for

Road Repair Tracking System

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1. Introduction

1.1 Purpose

Road Repair Tracking System(RRTS) is to be developed for automating various book keeping activities associated with the road repairing task of the Public Works Department of the Corporation of a large city.

1.2 Product Scope

This document will describe the functional and non-functional requirements of the Road Repair Tracking System. It will detail all objects involved in the system and present each objects properties and available actions. How objects interact with each other as well as how actors interact with the system will be presented.

1.3 References

SRS Format adheres to the format specified by:
830-1998 — IEEE Recommended Practice for Software Requirements Specifications. 1998.
doi:10.1109/IEEESTD.1998.88286. ISBN 0-7381-0332-2.

2. Overall Description

2.1 Product Perspective

Road Repair Tracking System(RRTS) is a new, self-sustained product that is to be developed for automating various book keeping activities associated with the road repairing task.

2.2 Product Functions

The RRTS system should be able to:

- *Accept road repair requests from residents where they directly access the system online.*
- *Accept road repair requests from residents which enter the requests offline from the residents.*
- *Accept values for the different quantities that define the state of the road by the supervisor. The supervisor should be able to schedule repair of the road along with the repair of the other roads.*
- *Accept the available manpower and machines available currently by the City Corporation Administrator.*
- *Return the road repair statistics for the mayor.*

2.3 User Classes

*The different user classes that will use this product are **Residents**, **Clerks**, **Supervisors**, **City Corporation Administrators** and **Mayors**.*

2.4 Design and Implementation Constraints

No constraints.

2.5 Assumptions

All residents, clerks, supervisors, city corporation administrators, mayors have a basic understanding of how to navigate a webpage as well as filling in basic text forms.

3. Functional Requirements

The organizing of the functional requirements for the product has been done on the basis of the user classes defined before in Section 2.3.

3.1 User Class: Residents

R.3.1.1: Raise requests in system

Description: The residents will raise requests for road repair.

Input: Location of road, start point of road, end point of road, name of resident, address and contact details of resident, Unique Government issued ID Card number(For example Aadhar card number).

Output: True/False depending on whether the request was successfully entered in the system or not.

3.2 User Class: Clerk

R.3.2.1: Enter requests in system.

Description: The requests of the residents will be entered by the clerk if the residents choose to manually come to the office to register a road repair request.

Input: Location of road, start point of road, end point of road, name of resident, address and contact details of resident, Unique Government issued ID Card number(For example Aadhar card number).

Output: True/False depending on whether all information about the road is provided or not.

3.3 User Class: Supervisor

R.3.3.1: Enter information about the road in system

Description: Studies severity of road condition. The information is entered in the system about the road by the following sub-functions from R.3.3.1.1-R.3.3.1.4.

Input: Information required for R.3.3.1.1-R.3.3.1.4.

Output: Summary of the requirements of this particular road repair project if all information has been correctly entered. The system should return an error if erroneous information has been entered.

R.3.3.1.1 Enter priority of road repair

Description: Estimate and enter the priority of the road repair on some fixed scale. He/She estimates this value based on the severity of the road condition and the type of the locality(ex. Commercial area, busy area, relatively deserted area, etc.)

Input: Priority of road repair.

Output: Nil

R.3.3.1.2 Enter raw material for road repair

Description: Estimate they types of raw materials required and enter the estimated quantity required for the road repair

Input: Types of raw materials and quantity of each material.

Output: Nil

R.3.3.1.3 Enter type and number of machines required for road repair

Description: Estimate types of machine required and enter the information about machines for the road repair

Input: Types of machines required and number of each machine required.

Output: Nil.

R.3.3.1.4 Enter number and type of personnel for road repair

Description: Estimate and enter information of personnel required for road repair

Input: Types of personnel and number of personnel required.

Output: Nil

R.3.3.2: Schedule repair of the road along with other roads.

Description: The supervisor will ask the system to schedule the road repair according to the data entered in R.3.3.1.

Input: Nil. System can access the information to compute priority directly.

Output: The schedule report.

The position of this particular road repair project in the list of all road repair projects handled by the system should be indicated clearly.

The system should return an error if sufficient information about priority, raw materials, machines, personnel is not provided by the supervisor.

R.3.3.1 should return successfully without an error before the execution of R.3.3.2

3.4 User Class: City Corporation Administrator

R.3.4.1: Enter information about the road

Description: City Corporation Administrator (CCA) should be able to enter and edit the available manpower and machines for road repair.

Input: New values for manpower and machines in the system.

Output: True/False depending on whether the values have been successfully entered in the system or not.

R.3.4.1.1: Enter the available manpower and machines in the system

Description: Enter the currently available manpower and machines for road repair.

Input: Values for currently available manpower and machines.

Output: True/False depending on whether the values have been successfully entered in the system or not.

R.3.4.1.2: Edit the available manpower and machines in the system

Description: If the manpower and the number of machines change then the CCA should be able to edit them at any moment of time. The road repair schedule will need to be recomputed automatically. R.3.3.2 will be automatically executed.

Input: Nil

Output: New repair schedule.

3.5 User Class: Mayor

R.3.5.1: Query road repair statistics about the road repair.

Description: The mayor should be able to query the following statistics at any moment.

Executed by: Mayor

R.3.5.1.1: Return number and type of repairs carried out over a period of time.

Description: As above.

Input: Nil

Output: Number and type of repairs carried out over a period of time

R.3.5.1.2: Return repair work outstanding

Description: As above.

Input: Nil

Output: Repair work outstanding at any point of time.

R.3.5.1.3: Return utilization statistics of the manpower and machines at any point of time

Description: As above.

Input: Nil

Output: Utilization statistics of the manpower and machines at any point of time.

4. Nonfunctional Requirements

4.1 Performance Requirements

The system must retrieve data and load pages within a reasonable amount of time. The load time must be within 20 seconds.The system must be capable of supporting simultaneous connections without supporting performance loss. The system must be capable of supporting a minimum of 1000 simultaneous connections.

4.2 Backup Requirements

The database contains not only the history of all consignments, but also existing consignments and work orders. Consequently, backing up the data on a regular basis is necessary. There should be multiple copies of the database to ensure backups.