**Bus Transport Company Management System**

**Software Requirements Specification**

**Document**

SARIK KOIRALA-2014UCP1012

PRATYUSH PRATAP SINGH 2014UCP1013)

# Date: (09/26/2016)

1. Introduction

Page No.

* Purpose
* Scope
* Definitions, Acronyms, and Abbreviations
* References
* Overview

2. The Overall Description

* Product Perspective 
  + System Interfaces
  + Interfaces
  + Hardware Interfaces
  + Software Interfaces
  + Communications Interfaces
  + Memory Constraints
  + Operations
  + Site Adaptation Requirements
* Product Functions
* User Characteristics
* Constraints
* Assumptions and Dependencies
* Apportioning of Requirements

3. Specific Requirements

* External interfaces
* Functions
* Performance Requirements
* Logical Database Requirements
* Design Constraints 
  + Standards Compliance
* Software System Attributes 
  + Reliability
  + Availability
  + Security
  + Maintainability
  + Portability
* Organizing the Specific Requirements 
  + System Mode
  + User Class
  + Objects
  + Feature
  + Stimulus
  + Response
  + Functional Hierarchy
* Additional Comments

**Introduction:**

**Purpose:**

The purpose of this document is to present a detailed description of the Bus Transportation Management System for a company. It will explain the purpose and features of the system, the interfaces of the system, the functionalities of the system and the constraints under which is must operate.

More specifically, this system is designed to allow an editor to manage and communicate with a group of clients through a public website.

**Scope:**

**Bus** **Transport Company Management System** is an efficient tool to store and retrieve relevant data for the management of a transportation company. This system will be designed to maximize the company’s productivity by providing tools in automating convenient accessibility tool to users which otherwise would have to be performed manually.

The following are the **objectives** of the Bus Transport Management System:

1. To give information on bus timings/schedules, their destinations and their route.
2. To store the bus details for management purposes.
3. To allow the customers to book and cancel tickets from the online portal.
4. To allow the employee users to alter the information regarding bus schedules, notices, passenger details etc.

The **aim** of the system is to ensure that the users and the company employees are equipped with a state-of-the-art database management system which meets the demands and needs of the modern day market avoiding inconsistency in data relevant as well as reducing time required in managing bus transportation details in the company.

The system will be equipped with necessities which will provide the users an effortless technique to view information regarding the bus schedule, bus routes, bus delay, and bus availability along with the availability to book and manage tickets online.

## Definitions, Acronyms, and Abbreviations:

**BTMS**- Bus Transport Management System

**DBMS**- Database Management System

**References:**

IEEE. *IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications.* IEEE Computer Society, 1998.

**Overview:**

Next chapter, the Overall Description section, of this document gives an overview of the functionality of the product. It describes the informal requirements and is used to establish a context for the technical requirements specification in the next chapter.

The third chapter, Requirements Specification section, of this document is written primarily for the developers and describes in technical terms the details of the functionality of the product.

Both sections of the document describe the same software product in its entirety, but are intended for different audiences and thus use different languages.

**OVERALL DESCRIPTION:**

**Product perspective**:

The BTMS has two active actors and one cooperating system.

The Client accesses the Online Webpage through the Internet. The Clients access with the system is through an online form portal. The Editor accesses the entire system directly.

**System Interfaces:**

There are no such external interfaces linking to the database.

**Interfaces:**

There are no such interfaces linking to an external database.

**Hardware interfaces:**

The system has no hardware interface requirements

**Network Interfaces:**

The system has no hardware interface requirements.

**Memory constraints:**

The system has no software interface requirements.

**Site Adaptation Requirements:**

New data tables created for this system must be installed on the company’s existing DB server and populated prior to system activation.” Any equipment the customer would need to buy or any software setup that needs to be done so that your system will install and operate correctly should be documented here.

Product Functions

Development of region specific transportation data for use in various reports, plans, and programs. It will allow people to do everything from keep proper track of schedule, to track their bus details with which they will, to even determining the distance and route via which they have to travel. Also it will tell the total price that will cost the customer.

**User Characteristics:**

There will be two kind of users

1. The Employees
2. The Customers

Constraints:

The constraints will be on the access of the users. The Customer cannot modify any other data accept his own details though he will have access over everything. On the other hand faculty will have access over everything and can modify anything. Their access will be separated by Username and Password. Language used will be PHP and HTML.

**Assumptions and Dependencies:**

The factors that are going to affect the database are the basic primary keys like customerID, busID, routeID etc.

**Specific Requirements:**

**External Interfaces:**

**Functions:**

1. The system shall notify the customers if the input field is invalid as per the requirements of the system.
2. The system shall allow the user to proceed to a certain field only when certain criteria’s are satisfied.
3. In the case of Overflow, the developers will be notified about the receding capacity of the database beforehand.

**Performance Requirement:**

The number of Users supported by this software is relatively large (if those users are sharing the same database memory). The amount of memory cannot be predicted but it depends on the user and the traffic.

Software System Attributes

Following are some of the software attributes of the Software System-

1. **Reliability –** The product is highly reliable as it handles large amount of data and solves user queries in less than one second. It can handle any amount of users provided the system is sharing the same database.
2. **Availability –** The product will be available to its user 24/7 and they can access database anytime they want or keep it on standby if not in use. The access of the user is limited to its scope as mentioned earlier .Therefore some users may not be able to access all the information on database or operate on it.
3. **Security -** The access of the user is limited to its scope as mentioned earlier .Therefore some users may not be able to access all the information on database or operate on it. To distinguish between the different kind of user, we will have password system or separate domain for each kind of user.
4. **Maintainability –** The product is easy to maintain as it will be more of a software function than a hardware function. The maintaining of database purely depends on hardware limitation and capacity.
5. **Portability –** This product is accessible by all. Therefore we can see that the product is highly portable.

Organizing the Specific Requirements

1. **System Modes –** The two kinds of user will be having different activities or operations to do on system. But the software will be able to serve different modes to its users at the same time. The main two kinds of system modes will be inserting, deleting and viewing/accessing mode.
2. **User Class –** The two kind of users are:

-**The Employee-** Inserting, deleting and viewing/accessing mode are the activities they will be able to do on database.

-**The customer-**Inserting, deleting and viewing/accessing mode are the activities they will be able to do on database.

The kind of data the two can perform their activities on is different from each other

1. **Features-** The following are the features

-Telling the schedule which tells the different bus timings and their destinations.

-Basic Ticketing system that including cancelling a ticket.

-Bus and Destination detail for management purpose.

Additional Comments

Because it dramatically reduces transportation complexity – and integrates business and logistics throughout the network:

* Provide executable transportation plans that are cost efficient and compliant with customer requirements
* Consolidate and optimise all destinations –domestic and international
* Strategically purchase or sell ticket management.
* Improve transportation logistics to boost on-time response and customer service levels
* Handle large volumes of logistics data for state-of-the-art analysis and planning.
* Include various other details about bus maintenance and other management details for record.