Software Requirements Specification (SRS)

# Addis Ababa Transport Management System

# 1. Introduction

1.1 Purpose

This document defines the software requirements for the Addis Ababa Transport Management System, developed by JONY SOLUTIONS for the Addis Ababa Transport Bureau. The software aims to enhance the efficiency, transparency, and functionality of urban transport services.

1.2 Scope

The system will streamline vehicle registration, traffic monitoring, public transport scheduling, and commuter services via a web and mobile platform. It will integrate with existing systems and enable real-time analytics for decision-making. Private vehicle management and physical infrastructure are excluded.

1.3 Definitions, Acronyms, and Abbreviations

- AATB – Addis Ababa Transport Bureau  
- UI – User Interface  
- UX – User Experience  
- API – Application Programming Interface  
- AWS – Amazon Web Services

1.4 References

1. https://ethiopianbusinessreview.net/public-transport-in-addis-from-crisis-through-crisis-into-crisis/

2. https://addisfortune.news/public-transporters-in-crosshairs/

# 2. Overall Description

2.1 Product Perspective

The system is a new, modular platform integrating with legacy transport systems. It will consist of web and mobile applications backed by a centralized cloud infrastructure.

2.2 Product Functions

- Digital vehicle registration  
- Real-time public transport tracking  
- Traffic congestion analysis  
- Digital ticketing  
- Commuter mobile app  
- Data analytics dashboard

2.3 User Characteristics

- Transport Bureau staff  
- Commuters using public transportation  
- System administrators  
- Data analysts

2.4 Constraints

- Must support low-bandwidth environments  
- Hosted on cloud (AWS/Azure)  
- Built using Python, JavaScript (React), Django, Node.js

2.5 Assumptions and Dependencies

- Internet availability for real-time functions  
- Client provides access to existing systems  
- Government support for implementation

# 3. Specific Requirements

3.1 Functional Requirements

- FR1: The system shall register and manage vehicle data.  
- FR2: The system shall monitor and report public transport in real time.  
- FR3: The system shall support commuter ticket purchases via a mobile app.  
- FR4: The dashboard shall generate real-time analytics for decision-making.  
- FR5: The system shall provide user login and authentication features.

3.2 Non-functional Requirements

- NFR1: The system shall be responsive across mobile and desktop devices.  
- NFR2: The platform shall handle up to 1 million active users.  
- NFR3: Data should be stored securely and encrypted in transit and at rest.  
- NFR4: The system must maintain 99.9% uptime.

3.3 External Interface Requirements

- User Interfaces: Web portal, mobile app (iOS, Android)  
- Hardware Interfaces: None required  
- Software Interfaces:  
 - Google Maps API  
 - Payment Gateway API  
 - AATB legacy systems

# 4. Budget and Cost Estimation

- Software Development: $100,000  
- UI/UX Design: $100,000  
- Hosting & Maintenance: $200,000/year  
- Training & Support: $100,000  
Total Cost: $500,000

# 5. Project Timeline

Phases and Duration:  
- Planning & Requirement Gathering: Week 1  
- Design & Prototyping: Weeks 2–3  
- Development: Weeks 4–6  
- Testing & Optimization: Weeks 7–8  
- Deployment & Training: Weeks 9–10  
- Maintenance & Support: Weeks 11–12

# 6. Team & Expertise

- Project Manager: Overall coordination  
- Developers: Frontend & backend development  
- UI/UX Designers: Interface design  
- QA Engineers: Testing and bug fixing  
- Data Analysts: Traffic data analysis

# 7. Technology Stack

- Frontend: React.js  
- Backend: Django, Node.js  
- Database: PostgreSQL  
- Hosting: AWS or Azure  
- APIs: RESTful APIs, Google Maps, Payment Gateway

# 8. Risk Analysis & Mitigation

Potential Risks and Mitigation:  
- Technical integration issues: Early testing, modular architecture  
- Budget overruns: Cost control and phased development  
- Implementation delays: Agile methodology and regular review cycles

# 9. Conclusion and Call to Action

This SRS outlines is a transformative digital solution for Addis Ababa’s transport infrastructure. JONY SOLUTIONS invites the Addis Ababa Transport Bureau to initiate the next steps:  
- Schedule review meeting  
- Finalize requirements and budget  
- Proceed with contract signing and implementation

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