PES UNIVERSITY
Department of Computer Science and Engineering
UE22CS341A: Software Engineering

Software Requirement Specification for SeaSky Logistics (Travel and Transport Agency Management System)

Version 1.0

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1. Introduction

1.1 Purpose

This document specifies the software requirements for the Travel and Transport Agency Management System. The system is designed to manage and track the transportation of goods and passengers via various modes of transport, including flight, sea, and road.

1.2 Intended Audience

This document is intended for the development team, project managers and testers involved in the project.

1.3 Product Scope

The Travel and Transport Agency Management System will provide a comprehensive solution for managing travel logs, tracking goods and passengers, handling various regulations, and calculating taxes. It aims to streamline operations for travel and transport agencies dealing with both domestic and international transportation.

1.4 References

https://github.com/praveenhonavar/Travel-Agency-Management-System
https://studentprojectguide.com/project-report/database-design/travel-agency-management-system-table-design/

1.5 Overview

The document is structured into sections detailing the functional and non functional requirements, system features, external interface requirements, and more.

2. Overall Description

2.1 Product Perspective

The system will be a new, self-contained product designed to integrate with existing transportation and customs databases.

2.2 Product Functions

- Manage travel logs for passengers and goods

- Track goods and passengers across different modes of transport
- Implement and enforce goods regulations (constraints)
- Maintain and check against a no-fly list
- Calculate and apply overseas taxes
- Calculate and apply import taxes for various goods

2.3 User Classes and Characteristics

- Passenger: Regular clients who book their own tickets online
- Sender: Suppliers who are sending goods, couriers, parcels to other receiving clients
- Receiver: Clients receiving the goods, couriers, parcels sent by other suppliers
- Travel Agency Staff: Frequent users with moderate technical expertise
- Transport Managers: Regular users focused on logistics
- Customs Officials: Occasional users with high security clearance
- System Administrators: Infrequent users with high technical expertise

2.4 Operating Environment

- Web based application accessible through web browsers
- Backend database: MySQL (for website) or firebase (for mobile app)
- Client: Any device with a web browser and internet connection

2.5 Design and Implementation Constraints

- Must comply with international transportation and customs regulations
- Requires secure, encrypted connections for all transactions
- Must integrate with existing government databases for no-fly lists and tax regulations

2.6 Assumptions and Dependencies

- Assumes constant internet connectivity
- Depends on up-to-date information from government agencies regarding regulations and taxes

3. External Interface Requirements

3.1 User Interfaces

- Progress bar for shipments / travel status
- Dashboard for quick overview of key metrics
- Forms for data entry with validation
- Search functionality for quick access to records

3.2 Software Interfaces

- DBMS software for tracking and storing transactions

3.3 Communications Interfaces

- HTTPS for secure web communication

4. System Features

4.1 Travel Log Management

4.1.1 Description and Priority

The system shall allow users to create, view, edit, and delete travel logs for both passengers and goods. HIGH PRIORITY

4.1.2 Functional Requirements

REQ-1: Users shall be able to create new travel logs with details such as traveler/goods information, origin, destination, and mode of transport.
REQ-2: The system shall allow searching and filtering of travel logs based on various criteria.
REQ-3: Users shall be able to generate reports of travel activities for specified time periods.

4.2 Goods and Passenger Tracking

4.2.1 Description and Priority

The system shall provide real-time tracking of goods and passengers across different modes of transport. HIGH PRIORITY

4.2.2 Stimulus/Response Sequences

Update the GUI for the user based on the status update of travel / transport using a progress tracker

4.2.3 Functional Requirements

REQ-4: The system shall update the location of goods and passengers at predefined checkpoints.
REQ-5: Users shall be able to view the current status and location of any shipment or passenger journey.
REQ-6: The system shall generate alerts for any delays or issues in transportation.

4.3 Goods Regulations Enforcement

4.3.1 Description and Priority

The system shall implement and enforce various goods regulations for different types of shipments. MEDIUM PRIORITY

4.3.2 Functional Requirements

REQ-7: The system shall maintain a database of current goods regulations for different countries and regions.
REQ-8: During shipment registration, the system shall check if the goods comply with relevant regulations and flag any violations.
REQ-9: Users shall be able to view detailed regulation information for any type of goods.

4.4 No-Fly List Management

4.4.1 Description and Priority

The system shall maintain and check against an up-to-date no-fly list. MEDIUM PRIORITY

4.4.2 Functional Requirements

REQ-10: The system shall integrate with government databases to maintain an updated no-fly list.
REQ-11: During passenger registration, the system shall automatically check against the no-fly list and alert users of any matches.
REQ-12: Authorized users shall be able to manually add or remove individuals from the no-fly list.

4.5 Tax Calculation

4.5.1 Description and Priority

The system shall calculate applicable overseas and import taxes for goods and travel. MEDIUM PRIORITY

4.5.2 Functional Requirements

REQ-13: The system shall maintain up-to-date tax rates for different countries and types of goods.
REQ-14: During shipment or travel registration, the system shall automatically calculate applicable taxes.
REQ-15: Users shall be able to generate tax reports for accounting purposes.

5. Nonfunctional Requirements

5.1 Performance Requirements

- The system shall respond to user inputs within 10 seconds.
- The system shall support at least 5 concurrent users.

5.2 Safety Requirements

N/A

5.3 Security Requirements

- All data transmissions shall be encrypted using industry-standard protocols.
- User authentication shall be required for accessing the system.
- Different access levels shall be implemented based on user roles.

5.4 Software Quality Attributes

- The user interface shall be intuitive, requiring minimal training for basic operations.

6. Other Requirements

6.1 Database Requirements

- The system shall use a relational database management system for data storage.
- Regular backups of the database shall be performed.

6.2 Business Rules

- All financial calculations must comply with international accounting standards.
- The system must adhere to data protection regulations such as GDPR for handling personal information.

Appendix A: Glossary

GDPR - General Data Protection Regulation

Appendix B: ER Diagram