Software Requirements Specification (SRS)

Project Title: Flight Delay Management System

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1. Introduction

1.1 Purpose

The purpose of this document is to define the functional and non-functional requirements for the Flight Delay Management System (FDMS). It is intended for developers, testers, airline staff, airport authorities, and end-users (passengers).

1.2 Scope

The FDMS is designed to track and manage flight delays, notify passengers, allow rescheduling, and generate analytical reports for airline staff. It supports real-time updates and serves as a centralized platform for delay communication.

1.3 Definitions, Acronyms, and Abbreviations

FDMS – Flight Delay Management System
FR – Functional Requirement
NFR – Non-Functional Requirement
SMS – Short Message Service

1.4 References

IEEE 830-1998 SRS Standard
SEPM Virtual Lab materials

2. Overall Description

2.1 Product Perspective

FDMS is a standalone web-based application that interacts with external flight data APIs and communication services (email, SMS).

2.2 Product Functions

- Track flight status in real-time
- Notify users of delays
- Allow flight rescheduling and cancellations
- Generate reports on delay trends

- Maintain historical data
- Provide search and filter tools for flight delays

2.3 User Classes and Characteristics

- Passenger: Subscribes to updates, views flight delays, reschedules bookings.
- Airline Staff: Updates flight information and delay reasons.
- Admin: Manages users, flight schedules, and system configurations.

2.4 Operating Environment

Web-based system accessible on mobile and desktop browsers using secure APIs for flight data.

2.5 Design and Implementation Constraints

Compliance with aviation data standards, real-time system response, and scalability to handle high user volume.

3. Specific Requirements

3.1 Functional Requirements (FRs)

- FR1: The system shall allow passengers to register and log in.
- FR2: The system shall allow airline staff and admins to manage flight schedules (add/update/delete).
- FR3: The system shall track real-time flight statuses and update users.
- FR4: The system shall notify passengers via SMS, email, or app notifications for delays.
- FR5: The system shall allow passengers to cancel or reschedule delayed flights.
- FR6: The system shall allow admins to generate reports on delay trends and reasons.
- FR7: The system shall provide a searchable and filterable dashboard for all delay records.
- FR8: The system shall maintain historical records of all flight delays.

3.2 Non-Functional Requirements (NFRs)

- NFR1: The system shall be available 24/7.
- NFR2: The system shall support up to 10,000 concurrent users.
- NFR3: Notifications must be delivered within 2 minutes of a flight status update.
- NFR4: The system shall ensure high data accuracy and integrity.
- NFR5: The user interface shall be responsive and user-friendly on all devices.
- NFR6: System uptime shall be at least 99.9% per month.

4. Appendices

A. Flow Diagram

(Reference to website or file as per lab instruction)

B. Assumptions and Dependencies

Real-time flight data will be sourced from third-party APIs.
SMS and email services will be integrated using external providers.