**Software Requirements Specification (SRS)**

Emergency Management System

1. Introduction

The purpose of this document is to specify the requirements for the Emergency Management System (EMS). The EMS is designed to assist emergency response teams in managing incidents, coordinating resources, and communicating effectively during emergencies such as natural disasters, accidents, and other critical events.

1.2 Scope

The EMS will provide functionalities for incident reporting, resource allocation, real-time communication, and status tracking. It will be used by emergency responders, dispatchers, and management personnel to improve response times and decision-making during emergencies.

1.3 Definitions, Acronyms, and Abbreviations

- \*\*EMS\*\*: Emergency Management System

- \*\*Incident\*\*: Any event requiring emergency response

- \*\*Responder\*\*: Personnel involved in emergency response

- \*\*Dispatcher\*\*: Personnel responsible for coordinating responders and resources

1.4 References

- National Incident Management System (NIMS) guidelines

- IEEE Std 830-1998 - IEEE Recommended Practice for Software Requirements Specifications

1.5 Overview

This document includes the overall description, specific requirements, and system features for the EMS.

2. Overall Description

2.1 Product Perspective

The EMS is a standalone web-based application that integrates with existing communication and GIS systems to provide a comprehensive emergency management platform.

2.2 Product Functions

- Incident reporting and logging

- Resource management and allocation

- Real-time communication (chat, alerts)

- Incident status tracking and updates

- Reporting and analytics

2.3 User Classes and Characteristics

Emergency Responders: Field personnel who receive assignments and update incident status.

Dispatchers: Coordinate resources and communicate with responders.

Administrators: Manage user accounts, system settings, and generate reports.

2.4 Operating Environment

- Web browsers (Chrome, Firefox, Edge)

- Mobile devices (iOS, Android) for responders

- Backend server hosted on cloud infrastructure

2.5 Design and Implementation Constraints

- Must comply with data privacy and security regulations.

- System should be available 24/7 with minimal downtime.

2.6 Assumptions and Dependencies

- Reliable internet connectivity for all users.

- Integration with third-party GIS and communication services.

3. Specific Requirements

3.1 Functional Requirements

3.1.1 Incident Reporting

- The system shall allow users to create new incident reports with details such as location, type, severity, and description.

- The system shall support attaching photos and videos to incident reports.

3.1.2 Resource Management

- The system shall maintain an inventory of available resources (vehicles, equipment, personnel).

- The system shall allow dispatchers to allocate resources to incidents.

3.1.3 Communication

- The system shall provide real-time messaging between dispatchers and responders.

- The system shall send automated alerts to responders based on incident assignments.

3.1.4 Status Tracking

- The system shall allow responders to update the status of their assigned incidents.

- The system shall display incident status on a dashboard for dispatchers and administrators.

3.1.5 Reporting

- The system shall generate reports on incident response times, resource usage, and outcomes.

3.2 Non-Functional Requirements

3.2.1 Performance

- The system shall support up to 1000 concurrent users without performance degradation.

3.2.2 Reliability

- The system shall have an uptime of 99.9%.

3.2.3 Security

- The system shall implement role-based access control.

- All data transmissions shall be encrypted using TLS.

3.2.4 Usability

- The system shall have an intuitive user interface accessible to users with minimal training.

4. External Interface Requirements

4.1 User Interfaces

- Web-based dashboard for dispatchers and administrators.

- Mobile app interface for responders.

4.2 Hardware Interfaces

- Integration with GPS devices for location tracking.

4.3 Software Interfaces

- Integration with GIS mapping services (e.g., Google Maps API).

- Integration with SMS and email gateways for alerts.

4.4 Communication Interfaces

- Support for HTTP/HTTPS protocols.

- WebSocket support for real-time communication.

5. Other Requirements

5.1 Data Backup and Recovery

- The system shall perform daily backups of all data.

- The system shall support data recovery within 1 hour of failure.