

System/Subsystem Specification (SSS)

Development Team

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1. Scope

1.1 Identification

SSS-001: System Identification - The system **shall** be identified by the following information: - **System Name:** [Project Name] System - **System Identifier:** [PROJ-001] - **Version:** 1.0 - **Release:** Initial Release - **Classification:** [Unclassified/Classified Level]

1.2 System Overview

SSS-002: System Purpose - The system **shall** provide [primary system purpose and functionality] - The system **shall** support [key operational capabilities] - The system **shall** integrate with [existing systems or infrastructure]

SSS-003: System History - The system **shall** be developed as a [new system/upgrade to existing system] - The system **shall** replace [legacy system if applicable] - The system **shall** maintain compatibility with [existing interfaces]

SSS-004: Stakeholder Identification - **Project Sponsor:** [Organization Name] - **Acquirer:** [Contracting Organization] - **User:** [End User Organization] - **Developer:** [Development Organization] - **Support Agencies:** [Support Organizations]

1.3 Document Overview

SSS-005: Document Purpose - This document **shall** specify the system requirements for [system name] - This document **shall** serve as the basis for system design and development - This document **shall** support system testing and acceptance

2. Referenced Documents

2.1 Government Documents

SSS-006: Military Standards - MIL-STD-498: Software Development and Documentation - MIL-STD-961E: Defense and Program-Unique Specifications Format and Content

2.2 Commercial Standards

SSS-007: Industry Standards - IEEE 830: Software Requirements Specification - ISO/IEC 25010: Systems and software Quality Requirements and Evaluation

3. Requirements

3.1 Required States and Modes

SSS-008: System States - The system **shall** operate in the following states: - **Idle State**: System is powered on but not actively processing - **Ready State**: System is prepared to accept and process requests - **Active State**: System is actively processing user requests - **Maintenance State**: System is under maintenance or configuration - **Emergency State**: System is operating under emergency conditions

SSS-009: System Modes - The system **shall** support the following operational modes: - **Normal Mode**: Standard operational conditions - **Degraded Mode**: Reduced functionality due to component failure - **Training Mode**: System operation for training purposes - **Backup Mode**: Operation using backup systems or procedures

3.2 System Capability Requirements

3.2.1 User Management Capability SSS-010: User Registration - The system **shall** allow new users to register with valid credentials - The system **shall** validate user information before account creation - The system **shall** send confirmation emails upon successful registration

SSS-011: User Authentication - The system **shall** authenticate users using secure login procedures - The system **shall** implement multi-factor authentication - The system **shall** lock accounts after multiple failed login attempts

SSS-012: User Authorization - The system **shall** enforce role-based access control - The system **shall** restrict access based on user permissions - The system **shall** log all access attempts and actions

3.2.2 Data Management Capability SSS-013: Data Storage - The system **shall** store data in secure, encrypted databases - The system **shall**

implement data backup and recovery procedures - The system **shall** maintain data integrity and consistency

SSS-014: Data Processing - The system **shall** process data according to business rules - The system **shall** validate data inputs and outputs - The system **shall** handle data errors gracefully

SSS-015: Data Reporting - The system **shall** generate standard and custom reports - The system **shall** support data export in multiple formats - The system **shall** provide real-time data analytics

3.3 System External Interface Requirements

3.3.1 Interface Identification **SSS-016: User Interface - Interface ID:** UI-001 - **Interface Type:** Web-based user interface - **Interfacing Entity:** End users - **Interface Characteristics:** Responsive design, accessibility compliant

SSS-017: Database Interface - Interface ID: DB-001 - **Interface Type:** Database connection - **Interfacing Entity:** Database management system - **Interface Characteristics:** Secure, high-performance connection

SSS-018: API Interface - Interface ID: API-001 - **Interface Type:** RESTful API - **Interfacing Entity:** External systems - **Interface Characteristics:** JSON format, authentication required

3.4 Security and Privacy Requirements

SSS-019: Access Control - The system **shall** implement role-based access control - The system **shall** enforce least privilege principles - The system **shall** require strong authentication

SSS-020: Data Protection - The system **shall** encrypt sensitive data at rest and in transit - The system **shall** implement data anonymization where required - The system **shall** comply with privacy regulations

SSS-021: Audit and Monitoring - The system **shall** log all security-relevant events - The system **shall** provide real-time security monitoring - The system **shall** support security incident response

3.5 System Quality Factors

SSS-022: Reliability Requirements - The system **shall** achieve 99.9% uptime - The system **shall** have mean time between failures of [X] hours - The system **shall** implement automatic error recovery

SSS-023: Performance Requirements - The system **shall** respond to user requests within [X] seconds - The system **shall** support [Y] concurrent users - The system **shall** process [Z] transactions per second

SSS-024: Maintainability Requirements - The system **shall** support modular design principles - The system **shall** provide comprehensive logging and monitoring - The system **shall** enable easy configuration changes

SSS-025: Usability Requirements - The system **shall** be learnable within [X] hours of training - The system **shall** support user productivity goals - The system **shall** provide helpful error messages and guidance

3.6 Design and Construction Constraints

SSS-026: Architecture Constraints - The system **shall** follow [specified architecture pattern] - The system **shall** use [specified design principles] - The system **shall** implement [specified coding standards]

SSS-027: Technology Constraints - The system **shall** use [specified programming languages] - The system **shall** implement [specified frameworks] - The system **shall** comply with [specified standards]

SSS-028: Physical Constraints - The system **shall** fit within [specified physical dimensions] - The system **shall** weigh no more than [X] pounds - The system **shall** operate within [specified power requirements]

4. Qualification Provisions

4.1 Qualification Methods

SSS-029: Testing Methods - Demonstration: User interface functionality, system integration - **Test:** Performance testing, security testing, load testing - **Analysis:** Code review, architecture analysis, risk assessment - **Inspection:** Documentation review, configuration verification

4.2 Qualification Requirements

SSS-030: Test Coverage - The system **shall** achieve [X]% code coverage - The system **shall** pass all unit and integration tests - The system **shall** complete system acceptance testing

SSS-031: Performance Qualification - The system **shall** meet all performance benchmarks - The system **shall** pass stress and load testing - The system **shall** demonstrate scalability requirements

5. Requirements Traceability

5.1 Traceability Matrix

Requirement ID	Parent Requirement	Child Requirements	Status
SSS-001	-	SSS-002, SSS-003, SSS-004	Approved
SSS-010	SSS-002	SSS-011, SSS-012	In Progress

Requirement ID	Parent Requirement	Child Requirements	Status
SSS-013	SSS-002	SSS-014, SSS-015	Approved
SSS-019	SSS-002	SSS-020, SSS-021	Approved

5.2 Change Management

SSS-032: Change Control - All requirement changes **shall** be documented in change requests - Changes **shall** be reviewed by technical and business stakeholders - Changes **shall** be tested before implementation

6. Notes

6.1 Acronyms and Abbreviations

- **SSS:** System/Subsystem Specification
- **API:** Application Programming Interface
- **CPU:** Central Processing Unit
- **GB:** Gigabyte
- **JSON:** JavaScript Object Notation
- **RAM:** Random Access Memory
- **REST:** Representational State Transfer
- **WCAG:** Web Content Accessibility Guidelines

6.2 Definitions

- **System:** The complete software and hardware solution
- **Component:** A modular part of the system
- **Interface:** A boundary between system components
- **Requirement:** A condition or capability that must be met
- **Stakeholder:** Any person or organization affected by the system

6.3 Background Information

This System/Subsystem Specification follows MIL-STD-498 guidelines and provides a comprehensive framework for system development. The requirements are structured to support traceability, testing, and validation throughout the development lifecycle.