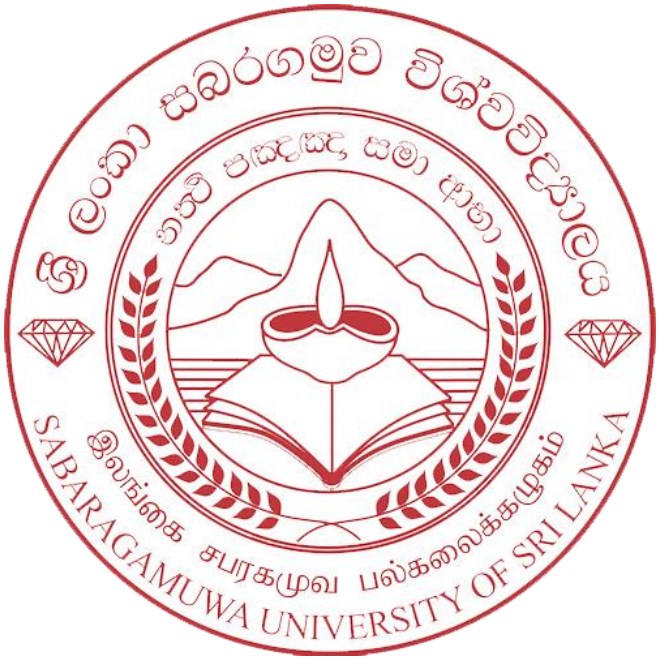
Software Requirements Specification



System-CC

Streamlining Divisional Secretary Office Communication with External Contractors

Version 1.0

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1. Introduction

1.1 Purpose

The purpose of System-CC is to provide a comprehensive solution for managing contracts and facilitating communication between the Divisional Secretary's Office and contractors responsible for infrastructure development projects such as building construction and road development. This system aims to streamline the contract management process, ensure adherence to rules and regulations, optimize time management, address issues related to check issuance, and enhance overall efficiency in project execution.

1.2 Intended Audience

The intended audience for System-CC includes personnel within the Divisional Secretary's Office responsible for contract management, administrators overseeing infrastructure development projects, contractors engaged in construction and development activities, as well as any stakeholders involved in the execution and oversight of such projects. Additionally, software developers and IT professionals tasked with implementing and maintaining the System-CC platform will also find this document relevant.

1.3 Reading Suggestions

For a comprehensive understanding of System-CC and its functionalities, readers are encouraged to review the entire Software Requirements Specification (SRS) document. However, specific sections may be of particular interest to different stakeholders:

- Divisional Secretary's Office Personnel: Focus on sections detailing contract management features, notification systems, and compliance with regulations.
- Contractors and Project Administrators: Pay attention to sections outlining the user interface, time-saving functionalities, and communication features.
- Software Developers and IT Professionals: Review technical specifications, integration requirements, and system architecture details.

1.4 Project Scope

The scope of System-CC encompasses the development of a web-based platform designed to centralize contract management processes and communication channels between the Divisional Secretary's Office and contractors. Key features include:

- Displaying rules and regulations pertinent to contract processes.
- Time-saving functionalities to streamline administrative tasks.
- Addressing issues related to check issuance.
- Implementing a notification system to facilitate efficient communication.
- Ensuring scalability and adaptability to accommodate future enhancements and regulatory changes.

2. Overall Description

2.1 Product Perspective

System-CC is a standalone web-based application designed to facilitate contract management and communication between the Divisional Secretary's Office and contractors involved in infrastructure development projects. It operates independently but may integrate with existing systems or databases for data retrieval and financial transactions.

2.2 Product Functions

System-CC offers the following key functionalities:

- Allow the Divisional Secretary and Assistant Director to add contracts to the system.
- Enable contractors to request contracts from the contract queue.
- Provide the Evaluation Committee with the ability to accept contract requests.
- Allow contractors to upload bills for completed work.
- Enable the Divisional Secretary, Assistant Director, and Accountant to view and verify uploaded bills.
- Facilitate communication between stakeholders through notifications.
- Support the transfer of funds from the Divisional Secretary to contractors' bank accounts.
- Implement holding and releasing 10% of contract funds for verification purposes.

2.3 User Classes and Characteristics

User classes include:

- Divisional Secretary
- Assistant Director
- Evaluation Committee
- Accountant
- Technical Officer
- Grama Niladhari
- Development Officer
- Contractor

Users are expected to have basic computer literacy and familiarity with web-based applications.

2.4 Operating Environment

System-CC operates in a web-based environment, accessible via modern web browsers such as Google Chrome, Mozilla Firefox, and Microsoft Edge. It requires an internet connection and may be hosted on a server accessible to authorized users.

2.5 Design and Implementation Constraints

System-CC must adhere to relevant data protection and privacy regulations.

- It should be designed with scalability and maintainability in mind to accommodate future updates and enhancements.
- Compatibility with various devices and screen sizes should be ensured for optimal user experience.

2.6 User Documentation

Comprehensive user documentation will be provided to guide users on system functionalities, navigation, and troubleshooting. This documentation will include user manuals, FAQs, and tutorials.

2.7 Assumptions and Dependencies

- It is assumed that users have access to stable internet connectivity and compatible devices.
- System-CC may depend on external services or APIs for functionalities such as email notifications and financial transactions.
- Development and implementation timelines may be affected by factors such as resource availability and regulatory compliance.

3. External Interface Requirements

3.1 User Interfaces

System-CC provides intuitive and user-friendly interfaces for various stakeholders involved in contract management.

Web-based Interface
The primary interface for accessing System-CC is a web-based application accessible via standard web browsers. The interface features a dashboard providing quick access to contract management functionalities, contract queue, bill uploads, notifications, and other relevant information. It is designed with a clean layout and intuitive navigation to ensure ease of use for all user classes.

- Sign up
- Log in
- Rules and Regulations
- Contract Queue
- Uploaded bills
- Fund transaction
- Holding 10% and Releasing 10%

3.2 Hardware Interfaces

System-CC is platform-independent and requires minimal hardware specifications.

User Devices
Users can access System-CC using desktop computers, laptops, tablets, or smartphones with internet connectivity and modern web browsers. The application is designed to be responsive, adapting to various screen sizes and resolutions for optimal usability across different devices.

3.3 Software Interfaces

System-CC may interact with external software systems and services for enhanced functionality:

- Database Management System (DBMS): System-CC may utilize a DBMS for data storage and retrieval. It should be compatible with commonly used database systems such as MySQL, PostgreSQL, or SQLite.
- Financial Systems: Integration with external financial systems may be required for processing fund transfers to contractors' bank accounts. System-CC should support secure communication protocols for seamless interaction with these systems.
- Email Services: System-CC may utilize email services for sending notifications to users. It should support standard email protocols such as SMTP for reliable email delivery.

3.4 Communications Interfaces

System-CC facilitates communication between stakeholders through various channels:

- Internal Messaging: The application includes an internal messaging system for sending and receiving messages between users. It supports real-time communication and notifications to keep users informed about contract-related activities.
- Email Notifications: System-CC sends automated email notifications to users for important events such as contract requests, bill uploads, and fund transfers. Users can configure their notification preferences within the application to receive timely updates via email.

4. System Features

4.1 Use Case
{Diagram}

4.2 Functional Requirements

1. User Authentication and Authorization

- The system shall provide user authentication to verify the identity of users logging into the system.
- Users shall be authorized based on their roles to access specific functionalities within the system.

2. Contract Management

- The Divisional Secretary and Assistant Director shall be able to add contracts to the system.
- Contracts shall include details such as title, description, and status.
- The contract queue shall display all available contracts for contractors to request.
- Contractors shall be able to request contracts from the contract queue.
- The Evaluation Committee shall have the authority to accept or reject contract requests from contractors.

3. Bill Management

- Contractors shall be able to upload bills for completed work to the system.
- Bills shall include details such as amount, date, and status.
- The Divisional Secretary, Assistant Director, and Accountant shall be able to view and verify uploaded bills.

4. Communication

- The system shall send notifications to users for important events such as contract requests, bill uploads, and fund transfers.
- Users shall have the option to configure their notification preferences within the system.

5. Fund Transfer

- The Divisional Secretary shall be able to transfer funds to contractors' bank accounts through the system.
- 10% of the contract funds shall be held for verification purposes.
- Upon completion and verification of work, the held funds shall be released to the contractor's account.

6. Verification Process

- The Assistant Director, Technical Officer, Development Officer, and Grama Niladhari shall verify the completion of work and bills uploaded by contractors.
- Upon verification, the system shall initiate the release of the held funds to the contractor.

7. Logging and Audit Trail

- The system shall maintain logs of all user activities and transactions for auditing and accountability purposes.
- Logs shall include details such as user actions, timestamps, and system responses.

8. System Administration

- Administrators shall have access to system administration functionalities to manage users, roles, and system configurations.
- Administrators shall be able to add, modify, or deactivate user accounts as needed.

5. Other Nonfunctional Requirements

5.1. Performance Requirements

- The system shall respond to user interactions within a maximum response time of 3 seconds under normal operating conditions.
- Concurrent user handling: The system shall support a minimum of 100 concurrent users without degradation in performance.

5.2. Safety Requirements

- The system shall implement data encryption mechanisms to ensure the confidentiality and integrity of sensitive information such as user credentials, contract details, and financial transactions.
- User authentication: The system shall enforce strong authentication measures to prevent unauthorized access to user accounts and sensitive data.

5.3. Security Requirements

- Access control: The system shall enforce role-based access control (RBAC) to restrict users' access to functionalities based on their assigned roles.
- Secure data transmission: All data transmitted between the client and server shall be encrypted using secure communication protocols such as HTTPS to prevent eavesdropping and tampering.
- Data backup and recovery: The system shall regularly backup critical data and provide mechanisms for data recovery in the event of system failures or data corruption.

5.4. Software Quality Attributes

- Reliability: The system shall operate reliably with minimal downtime, ensuring uninterrupted access to critical functionalities.
- Usability: The user interface shall be intuitive and easy to navigate, requiring minimal training for users to perform tasks efficiently.
- Maintainability: The system shall be designed with modular components and well-documented code to facilitate future enhancements, bug fixes, and system upgrades.
- Scalability: The system architecture shall be scalable to accommodate increasing user loads and additional features without significant performance degradation.

5.5. Business Rules

- Payment verification: Funds shall not be transferred to contractors until the completion of work is verified by authorized personnel, in accordance with established business rules.
- Contract prioritization: Contracts in the queue shall be prioritized based on factors such as project urgency, funding availability, and regulatory requirements.
- Notification thresholds: Users shall receive notifications for critical events such as contract approvals, pending bills, and fund transfers, based on predefined thresholds and user preferences.

Analysis Models - ER Diagram