Modified Software Requirements Specification (SRS) for Angadi Kerala App

1. Introduction

- **1.1 Purpose**
  This document outlines the software requirements for the "Angadi Kerala" mobile application.
  The app aims to standardize and streamline the publication of product details, prices, and locations for all Coop Kerala-branded products, connecting producers and consumers, and enhancing market reach.
- **1.2 Scope**
  The software will support the following functionalities:
  - Product catalog management with standardized information.
  - Location-based discovery of products and points of sale.
  - User account management for producers and consumers.
  - Product ordering and reservation.
  - Real-time notifications for updates and offers.
  - Feedback and rating mechanisms for products.
  - Multilingual support (Malayalam and English).
  - API Integration for seamless data exchange with external systems.
  - Management Information System (MIS) for data analysis and reporting.
  - Customer Relationship Management (CRM) to enhance user engagement.
  - Content Management System (CMS) for dynamic content updates.
  - Analytics Module for in-depth app usage analysis.
  - Quality Control Module to maintain product standards.
  - Inventory Management Module for real-time stock tracking.
  - Financial Management Module for transaction and payment processing.
- **1.3 Intended Audience**
  - Producers of Coop Kerala products.
  - Consumers seeking to purchase Coop Kerala products.
  - Staff managing the Coop Kerala product distribution and sales.
  - SPMU, Dept. of Cooperation, Govt. of Kerala.
  - Payment processing staff.
  - Logistics managers.
  - Customer support personnel.
  - Marketing and content management teams.
  - Quality control inspectors.
  - Finance and accounting staff.
- **1.4 Definitions, Acronyms, and Abbreviations**
  - SRS: Software Requirements Specification

- ○ SPMU: State Project Management Unit
- ○ UI/UX: User Interface/User Experience
- ○ API: Application Programming Interface
- ○ MIS: Management Information System
- ○ CRM: Customer Relationship Management
- ○ CMS: Content Management System
- ○ WCAG: Web Content Accessibility Guidelines
- ○ PCI DSS: Payment Card Industry Data Security Standard
- ○ KPI: Key Performance Indicator

2. Overall Description

- **2.1 Product Perspective**
  The "Angadi Kerala" app will be a mobile application available on Android and iOS platforms.
  It will feature:
  - ○ A centralized database for product information, pricing, and availability.
  - ○ Map-based services for locating products and sales points.
  - ○ Role-based access control for producers and consumers.
  - ○ User-friendly interfaces in Malayalam and English.
  - ○ APIs to enable data exchange with other systems.
  - ○ An MIS module to provide insights into sales, product performance, and user behavior.
  - ○ Secure payment gateway integration for online transactions.
  - ○ Logistics management capabilities for efficient delivery.
  - ○ CRM tools to manage customer interactions and support.
  - ○ A CMS to allow easy updates to app content.
  - ○ Analytics dashboards to track app usage and performance.
  - ○ Quality control features to ensure product standards.
  - ○ Inventory management functionalities for stock control.
  - ○ Financial reporting and transaction management tools.
- **2.2 User Classes and Characteristics**
  - ○ Producers: Manage product listings, update pricing and availability, receive orders/reservations, and respond to feedback.
  - ○ Consumers: Browse products, view details, locate points of sale, place orders/reservations, provide feedback, and receive notifications.
  - ○ Staff: Backend managing Cooperative Department Staff.
  - ○ System Administrators: Manage the system, including all modules and integrations.
  - ○ Payment Processing Staff: Manage transactions, refunds, and payment-related issues.

- ○ Logistics Managers: Oversee delivery operations and track shipments.
- ○ Customer Support Personnel: Handle user inquiries and provide assistance.
- ○ Marketing and Content Management Teams: Create and manage promotional content.
- ○ Quality Control Inspectors: Monitor product quality and address issues.
- ○ Finance and Accounting Staff: Generate financial reports and manage payments.
- **2.3 Operating Environment**
  - ○ Mobile application for Android and iOS devices.
  - ○ Requires internet connectivity for real-time data access.
  - ○ Backend hosted on state data center .
- **2.4 Constraints**
  - ○ The app must be compatible with a range of Android and iOS devices.
  - ○ Adherence to relevant data privacy and security standards of State and Central Government.
  - ○ Integration with existing Coop Kerala systems (if any).
  - ○ Budget constraints as outlined in the project proposal.
- **2.5 Assumptions and Dependencies**
  - ○ Producers will provide accurate and up-to-date product information.
  - ○ Users will have access to compatible mobile devices and internet connectivity.
  - ○ Mapping APIs (e.g., Google Maps) are available for integration.
  - ○ Necessary APIs from external systems (e.g., payment gateways, logistics providers) will be available and documented.

3. Functional Requirements

- **3.1 Product Catalog Management**
  - ○ Producers:
    - ■ Add new products with detailed specifications (name, description, quality, quantity, price, images).
    - ■ Update product information, including pricing and availability.
    - ■ Categorize products for easy browsing.
    - ■ Manage product inventory.
    - ■ Remove products already added
  - ○ Consumers:
    - ■ Browse products by category, name, or other criteria.
    - ■ View detailed product information.
    - ■ Search for specific products.
    - ■ See product availability and pricing.
- **3.2 Location Services**
  - ○ Consumers:

- View the points of sale on a map.
- Get directions to the nearest point of sale.
- Filter points of sale by product availability.
- [Consider integration with Kerala's specific location services, if available].
    - Producers :
        - Add their point of sale.
        - Update point of sales locations.
- **3.3 User Account Management**
    - Producers:
        - Create and manage producer accounts.
        - Secure login with password protection.
        - [Consider two-factor authentication].
        - Manage profile information.
    - Consumers:
        - Create and manage consumer accounts.
        - Secure login with password protection.
        - [Consider two-factor authentication].
        - Manage profile information.
        - Save favorite products.
        - View order/reservation history.
- **3.4 Order and Reservation**
    - Consumers:
        - Reserve products for pickup at a specific location.
        - Place orders for delivery (if applicable).
        - View order/reservation status.
        - Cancel orders/reservations (within a defined timeframe).
    - Producers:
        - Receive and manage orders/reservations.
        - Confirm order/reservation status.
        - [Potentially integrate with inventory management].
        - [Potentially generate invoices/receipts].
- **3.5 Notifications**
    - Producers:
        - Receive notifications of new orders/reservations.
        - Receive notifications of consumer feedback.
        - Receive notifications about product updates.
    - Consumers:
        - Receive notifications about order/reservation status.
        - Receive notifications about new products, price changes, and special offers.
        - Receive personalized product recommendations.
- **3.6 Feedback and Ratings**

- ○ Consumers:
  - ■ Rate products on a defined scale.
  - ■ Provide written feedback on products.
  - ■ View ratings and feedback from other consumers.
- ○ Producers:
  - ■ View ratings and feedback for their products.
  - ■ Respond to consumer feedback (optional).
  - ■ [Potentially use feedback to improve product quality].
- **3.7 Multilingual Support**
  - ○ The app will support both Malayalam and English languages.
  - ○ Users can select their preferred language.
  - ○ All text and content will be available in both languages.
- **3.8 API Integration Module**
  - ○ **3.8.1 API Requirements**
    - ■ The system shall provide APIs to integrate with:
      - ■ Payment gateways for online transactions.
      - ■ Logistics/delivery services for order fulfillment.
      - ■ Coop Kerala's existing systems for data synchronization (e.g., product information, inventory).
    - ■ **3.8.2 API Specifications**
    - ■ APIs shall use a standard data format (e.g., JSON, XML).
    - ■ Authentication and authorization mechanisms (e.g., OAuth 2.0) shall be implemented to ensure secure access.
    - ■ Detailed API documentation shall be provided, including endpoints, request/response formats, and error codes.
    - ■ The system shall handle API errors gracefully and provide informative error messages.
    - ■ **3.8.3 Data Mapping**
    - ■ Define clear mapping between data fields in the Angadi Kerala app and external systems.
    - ■ Data transformation rules shall be specified, if necessary.
- **3.9 Management Information System (MIS) Module**
  - ○ **3.9.1 Data Analysis and Reporting**
    - ■ The MIS shall provide reports and dashboards on:
      - ■ Sales performance (e.g., total sales, sales by product category, sales by region).
      - ■ Product performance (e.g., best-selling products, products with low sales).
      - ■ User behavior (e.g., user demographics, order frequency).
      - ■ Inventory levels and stock management.
      - ■ Producer performance (e.g., order fulfillment rates, average ratings).

- **3.9.2 Report Generation**
  - Users (Coop Kerala staff) shall be able to generate reports in various formats (e.g., PDF, Excel).
  - Reports shall be customizable with filters and sorting options.
  - The system shall support scheduled report generation and delivery.
- **3.9.3 Dashboards**
  - The MIS shall provide interactive dashboards with key performance indicators (KPIs).
  - Dashboards shall visualize data using charts, graphs, and tables.
  - Users shall be able to drill down into data for more detailed analysis.
- **3.10 Customer Relationship Management (CRM) Module**
  - **3.10.1 User Support**
    - Ticketing system for managing user support requests.
    - FAQ section and knowledge base.
    - Chatbot integration for basic inquiries.
  - **3.10.2 Customer Feedback**
    - Collection and management of user feedback and reviews.
    - Tools for analyzing customer sentiment.
    - Integration with the ratings module.
    - Notifications to producers about new feedback.
    - Reporting on feedback trends.
  - **3.10.3 Communication Channels**
    - In-app messaging between producers and consumers.
    - Integration with email and SMS for notifications and alerts.
    - Forum or community section for user discussions (optional).
  - **3.10.4 Loyalty Programs**
    - Implementation of reward points for purchases.
    - Tiered membership system with exclusive benefits.
    - Personalized offers and promotions.
    - Tracking of user engagement and rewards.
  - **3.10.5 CRM Analytics**
    - Dashboards for visualizing key CRM metrics.
    - Reporting on customer retention rates.
    - Analysis of user behavior to improve engagement.
    - Segmentation of users for targeted marketing.
- **3.11 Content Management System (CMS) Module**
  - **3.11.1 Content Creation and Management**
    - Tools for creating and editing text, images, and videos.
    - Version control for content updates.
    - Scheduling of content publication.
    - Management of content categories and tags.

- ○ **3.11.2 Banner and Advertisement Management**
  - ■ Tools for creating and managing promotional banners.
  - ■ Targeting of banners to specific user groups.
  - ■ Tracking of banner performance.
- ○ **3.11.3 Blog/News Management**
  - ■ Functionality for publishing news articles and blog posts.
  - ■ Management of comments and discussions.
  - ■ Integration with social media for sharing.
- ○ **3.11.4 Page Management**
  - ■ Ability to create and manage static pages (e.g., "About Us," "Contact Us").
  - ■ Customization of page layouts and design.
- ○ **3.11.5 User Permissions**
  - ■ Role-based access control for content management.
  - ■ Workflow for content approval.
- ● **3.12 Analytics Module**
  - ○ **3.12.1 App Usage Analytics**
    - ■ Tracking of screen views and user flows.
    - ■ Measurement of feature usage.
    - ■ Analysis of user engagement and retention.
    - ■ Reporting on app crashes and errors.
  - ○ **3.12.2 User Demographics**
    - ■ Collection and analysis of user demographics (e.g., age, location).
    - ■ Segmentation of users based on demographics.
  - ○ **3.12.3 Marketing Campaign Tracking**
    - ■ Tracking of the effectiveness of marketing campaigns.
    - ■ Measurement of user acquisition channels.
    - ■ Analysis of conversion rates.
  - ○ **3.12.4 In-App Behavior Analysis**
    - ■ Tracking of user interactions within the app.
    - ■ Analysis of user behavior patterns.
    - ■ A/B testing of different app features.
- ● **3.13 Quality Control Module**
  - ○ **3.13.1 Producer Quality Ratings**
    - ■ System for rating producers based on product quality.
    - ■ Display of producer quality ratings to consumers.
    - ■ Incentives for producers to maintain high quality.
  - ○ **3.13.2 Product Quality Feedback**
    - ■ Collection of consumer feedback related to product quality.
    - ■ Analysis of quality issues and trends.
    - ■ Notifications to producers about quality concerns.
  - ○ **3.13.3 Quality Control Checks**

- Functionality for Coop Kerala staff to record quality control checks.
- Management of quality standards and guidelines.
- Reporting on quality control metrics.
- **3.14 Inventory Management Module**
  - **3.14.1 Real-Time Inventory Tracking**
    - Tracking of inventory levels at each point of sale.
    - Updates to inventory levels with each order/sale.
    - Low stock alerts and notifications.
  - **3.14.2 Stock Management**
    - Tools for managing stock replenishment.
    - Integration with producer inventory systems.
    - Management of stock variations (e.g., size, color).
  - **3.14.3 Inventory Reporting**
    - Reports on inventory levels, stock turnover, and stockouts.
    - Forecasting of future inventory needs.
- **3.15 Financial Management Module**
  - **3.15.1 Transaction Management**
    - Recording of all transactions within the app.
    - Generation of invoices and receipts.
    - Management of payment settlements.
  - **3.15.2 Sales Reporting**
    - Reports on sales by product, producer, and region.
    - Analysis of sales trends.
    - Calculation of commissions and fees.
  - **3.15.3 Payment Processing**
    - Management of payments to producers.
    - Reconciliation of payments with payment gateways.
    - Handling of refunds and disputes

4. Non-Functional Requirements

4.1 Performance

- The app should load quickly and respond to user interactions promptly**(within 2 seconds).**

- The system should be able to handle a large number of concurrent users**(at least 5000 consumers).**

4.2 Security

- Secure storage of user data, including personal and order information.

- Protection against unauthorized access and data breaches.

- Secure payment processing (if applicable).

- Adherence to relevant data privacy regulations.

- Regular security audits.

4.3 Usability

- Intuitive and user-friendly interface for both producers and consumers.

- Easy navigation and search functionality.

- Clear and concise information display.

- Consistent design and branding.

- Accessibility for users with disabilities (consider guidelines).

4.4 Availability

- High availability of the app and its services.

- Minimal downtime for maintenance or updates.

4.5 Scalability

- The system should be scalable to accommodate future growth in users, products, and features.

- The architecture should support adding new functionalities and integrations.

5. System Design and UI/UX

The UI/UX design will be guided by the following principles:

User-Centered Design: The app will be designed with a focus on the needs and preferences of both producers and consumers. User research and testing will be conducted to ensure that the app is easy to use and meets their requirements.

- User research (surveys, interviews, focus groups) to understand the specific needs and pain points of Coop Kerala producers and consumers.

- Create user personas to represent different user types and their goals.

- Perform usability testing of wireframes and prototypes to gather feedback and iterate on the design.

Simplicity and Clarity: The app will have a clean and intuitive interface, with clear and concise information display. Unnecessary complexity will be avoided.

- Use a minimalist design approach, focusing on essential elements and avoiding clutter.

- Information architecture will be carefully planned to ensure that users can easily find what they need.

- Clear and concise language will be used throughout the app, in both Malayalam and English.

Consistency: A consistent design language will be used throughout the app, including consistent use of colors, typography, and layout. This will help users to learn the app quickly and use it efficiently.

- A style guide will be created to define the visual language of the app, including color palettes, typography, and iconography.

- UI components will be designed to be reusable and consistent across different screens.

- Platform-specific design guidelines (Material Design for Android, Human Interface Guidelines for iOS) will be followed to ensure a native user experience.

Accessibility: The app will be designed to be accessible to users with disabilities, following accessibility guidelines.

- Adhere to WCAG (Web Content Accessibility Guidelines) to ensure that the app is usable by people with visual, auditory, motor, and cognitive impairments.

- Features such as alternative text for images, keyboard navigation, and screen reader compatibility will be implemented.

- The app will be tested with assistive technologies to ensure accessibility.

Responsiveness: The app will be designed to be responsive to different screen sizes and orientations, providing a seamless experience on different devices.

- A responsive layout will be used to adapt the app's design to different screen sizes (phones, tablets).

- The app will be tested on a variety of devices to ensure a consistent experience.

- Images and other media will be optimized for different screen resolutions.

Branding: The app's design will be consistent with Coop Kerala's branding, reinforcing brand recognition and trust.

- The app will use Coop Kerala's logo, color palette, and typography.

- The app's design will reflect Coop Kerala's values and brand personality.

- Consistency in branding will be maintained across all app screens and interactions.

Performance: The UI/UX design will consider performance, ensuring that the app is fast and responsive, even on low-bandwidth connections.

- Images and other assets will be optimized for fast loading times.

- The app's architecture will be designed for efficient data retrieval and display.

- User interactions will be designed to be smooth and responsive.

- The design will prioritize a clean, modern, and user-friendly experience.
- The design will be consistent with Coop Kerala's branding.

6. Conclusion

This SRS provides a comprehensive overview of the functional and non-functional requirements for the "Angadi Kerala" app. By digitizing the product information and sales process, this app will enhance transparency, accessibility, and efficiency for both producers and consumers within Kerala's cooperative sector.