Software Requirements Specification (SRS)

Document

Document Information

Project Name	PaintNova ColorLab System
Version	1.0
Date	23/01/2026
Authors	Abdalla Horera Fadhili Sharifa Mohamed Ali Amina Juma Hamad
Status	Draft

Contents

1 Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to define the

functional and non-functional requirements of the **PaintNova ColorLab System**. The system is

designed to support internal business operations of a paint manufacturing and sales company. This

document serves as a reference for manager, system analysts, developers, and business

stakeholders to ensure a shared and clear understanding of the system's behavior and scope.

1.2 Project Scope

The PaintNova ColorLab System is an internal business operations management system. It does

not provide any customer-facing digital interface. All customers interact with the business

physically at the industry or via phone calls, and all system interactions are performed by internal

staff only.

The system will be used by director/manager, financial-controller and workers to ensure

consistency, accuracy and efficiency in companies daily operation.

1.3 Definitions and Acronyms

Term	Definition
SRS	Software Requirements Specification
UI	User Interface
API	Application Programming Interface
User	Authorized staffs (workers, financial controller, director)

1.4 References

IEEE 830/IEEE 29148 SRS Standard

2 Overall Description

2.1 Product Perspective

The **PaintNova ColorLab System** supports internal operations of a paint business dealing with water-based, oil-based, automotive paints and primers. It integrates workflows among Director, Financial Controller and Workers.

The system supports internal coordination between these roles to manage orders, payments,

production, inventory, salaries, and reporting.

2.2 Product Features

- User authentication and access control
- Order management and approval
- Paint mixing and production tracking
- Inventory and stock management
- Financial management and reporting

2.3 User Classes and Characteristics

User Class	Description	Technical Level
Administrator (Director)	Review reports and business performance Manage users	High
Financial Controller	Manage financial and operational activities	Medium to high
Workers	Record orders and handle production	Low to high technical level

2.4 Operating Environment

Operating System: Windows / Linux

Browser Requirements: Modern web browsers (Chrome, Microsoft Edge, Firefox)

Hardware Requirements: Desktop or Laptop computer

Database: PostgreSQL
Network Requirements: Local network

2.5 Design and Implementation Constraints

Single business location

No direct customer access

Payments handled outside the system

2.6 Assumptions and Dependencies

- All customers interact physically or by phone only

- Payments are handled outside the system

- The system is used by a single business location

- Internet access is not mandatory for core operations

- Users have basic computer skills

3 Functional Requirements

3.1 Feature 1: User Management

FR-001: User Login

Description: The system shall allow authorized users to log in using a username and password.

Priority: High

Input: Username and password

Processing: The system validates credentials against stored records.

Output: Access to system dashboard.

Acceptance Criteria: User is logged in with correct role-based access.

FR-002: User Account Management

Description: The system shall allow administrators(director) to create, update, deactivate, and reset user accounts. Priority: High

Input: User details

Processing: System stores and updates user records.

Output: Updated user account information.

Acceptance Criteria: User accounts reflect changes correctly.

3.2 Feature 2: Order Management

FR-003: Record Customer Order

Description: The system shall allow workers to record customer paint requirements.

Priority: High

Input: color type, name, quantity.

Processing: Order details are saved in the system.

Output: Order recorded with pending status.

Acceptance Criteria: Order appears in pending approval list.

FR-004: Approve and Price Order

Description: The system shall allow the Financial Controller to price and approve orders.

Priority: High

Input: Order ID, price details

Processing: System updates order status.

Output: Approved or rejected order.

Acceptance Criteria: Order status updated correctly.

3.3 Feature 3: Production and Inventory

FR-005: Update Production Status

Description: The system shall allow workers to update paint mixing status.

Priority: High

Input: Order ID, production status

Processing: System updates production records.

Output: Updated order status.

Acceptance Criteria: Production status is visible to authorized users.

FR-006: Manage Inventory

Description: The system shall track stock movement for products.

Priority: High

Input: Stock in/out details

Processing: Inventory records updated.

Output: Updated stock levels.

Acceptance Criteria: Inventory levels reflect transactions accurately.

3.4 Feature 4: Financial and Reporting

FR-007: Record Financial Transactions

Description: The system shall record all sales, purchases, and salaries.

Priority: High

Input: Transaction details

Processing: System stores financial records.

Output: Updated financial ledger.

Acceptance Criteria: Transactions appear in reports.

FR-008: Generate Reports

Description: The system shall generate sales and inventory reports.

Priority: Medium

Input: Report type and period Processing:

System aggregates data.

Output: Generated report.

Acceptance Criteria: Report data is accurate and complete.

4 Non-Functional Requirements

Performance Requirements

- The system shall respond to user requests within 2 seconds under normal load.
- The system shall support at least 50 concurrent users without performance degradation.

Security Requirements

- The system shall encrypt all user passwords.
- The system shall protect data against unauthorized access.
- The system shall automatically log out inactive users after a defined period.

Usability Requirements

- The system shall have a simple and intuitive user interface.
- The system shall provide clear error messages and user guidance.
- The system shall be usable by users with basic computer skills.

Reliability Requirements

- The system shall ensure data consistency and integrity.
- The system shall have an uptime of at least 99%.

Portability Requirements

- The system shall be deployable on Windows and Linux platforms.

- The system shall support major web browsers.

5 User Stories

5.1 User Story 1 (Worker)

As a Worker,
- I want to view confirmed customer orders, so that I know which orders are ready for paint mixing.
- I want to mix paint based on the recorded order specifications, so that the customer receives the correct color and quantity.
- I want the system to update inventory after paint mixing, so that stock levels remain accurate.
- I want to mark an order as completed after mixing, so that the system reflects the finished status of the order.

Acceptance Criteria:

- Given the worker is logged in, When the worker accesses the orders list, Then the system shall display only orders with status "Confirmed".
- Given a confirmed order exists, When the worker opens the order details,
- Then the system shall display paint type, color specifications, and quantity clearly.
- Given the worker completes paint mixing for an order, When the worker marks the mixing as completed, Then the system shall automatically reduce the relevant product stock quantity.
- Given inventory is updated, When the stock deduction is recorded,
- Then the system shall create an inventory transaction record with type OUT.
- Given paint mixing and inventory updates are successful, When the worker marks the order as finished,
- Then the system shall update the order status to "Completed".
- Given required order information is missing or invalid, When the worker attempts to complete the order,
- Then the system shall display an appropriate error message and prevent completion.

5.2 User Story 2 (Financial Controller)

As a Financial Controller, I want to review, price, and approve customer orders, so that payments and sales records are managed correctly.

Acceptance Criteria:

- Given an order is pending approval, when the Financial Controller sets a price, then the system shall save the pricing details.
- Given pricing is set, when the Financial Controller approves the order, then the system shall update the order status to Approved.
- Given an order is rejected, when the rejection is confirmed, then the system shall notify the worker.

5.3 User Story 3 (Director/Manager)

As a Director, I want to view sales and financial reports, so that I can make informed strategic business decisions.

Acceptance Criteria:

- Given the Director is logged in, when a report type and date range are selected, then the system shall generate the report.
- Given a report is generated, when the Director views it, then the data shall be accurate and complete.
- Given required data is unavailable, when the report is requested, then the system shall display warning message.

6 Use Cases

6.1 Use case 1:Record Customer Order

Use Case ID	UC-001
Name	Record Customer Order
Actor(s)	Sales Officer
Description	Allows the sales officer to record a new customer paint order into the system.
Preconditions	Sales Officer is logged into the system

Main Flow	1. Sales Officer selects New Order. 2. System displays order entry form. 3. Sales Officer enters customer details and paint requirements. 4. Sales Officer submits the order. 5. System saves the order with status Pending Approval.
Alternative Flows	If required fields are missing, the system prompts the user to correct them.
	Customer order is successfully recorded in the system.

6.2 Use Case 2: Approve and Price Order

Use Case ID	UC-002
Name	Approve and Price Order
Actor(s)	Financial Controller
Description	Allows financial controller to approve customer orders and assign prices.
Preconditions	Order has been recorded and is pending approval

Main Flow	1. financial controller views pending orders. 2. financial controller selects an order. 3. financial controller reviews order details. 4. financial controller assigns price and approves the order. 5. System updates order status to Approved.
Alternative Flows	financial controller may reject the order and add comments.
Postconditions	Order is approved and priced or rejected.

6.3 Use Case 3: Confirm Payment

Use Case ID	UC-003
Name	Confirm Payment
Actor(s)	Financial Controller
Description	Confirms customer payment for an approved order.
Preconditions	Order is approved

Main Flow	1. Financial Controller searches for approved order.
	2. Financial Controller enters payment details.
	3. System validates payment information.
	4. System confirms payment.
	5. Order status is updated to Paid.
Alternative Flows	If payment fails, system displays an error message.
Postconditions	Payment is confirmed and recorded.

6.4 Use Case 4: Mix Paint and Update Status

Use Case ID	UC-004
Name	Mix Paint and Update Status
Actor(s)	Production Staff
Description	Allows production staff to mix paint according to order specifications and update order status.
Preconditions	Payment is confirmed
Main Flow	1. Production staff views paid orders.
	2. Staff mixes paint based on order details.
	3. Staff updates order status to Completed.
	4. System records completion time.
Alternative Flows	If materials are insufficient, status is set to On Hold.
Postconditions	Paint is mixed and order status updated.

6.5 Use Case 5: Manage Inventory

Use Case ID	UC-005
Name	Manage Inventory
Actor(s)	Manager
Description	Manages raw materials and finished paint stock levels.
Preconditions	Manager is logged into the system
Main Flow	1. Manager views inventory list. 2. Manager updates stock quantities. 3. System saves inventory changes.
Alternative Flows	System alerts when stock level is low.
Postconditions	Inventory records are updated.

6.6 Use Case 6: Generate Reports

Use Case ID	UC-006
Name	Generate Reports
Actor(s)	Manager
Description	Generates sales, inventory, and production reports.
Preconditions	Manager is logged into the system

Main Flow	1. Manager selects report type.
	2. Manager selects date range.
	3. System generates report.
	4. Manager views or downloads report.
Alternative Flows	If no data exists, system displays No records found.
Postconditions	Report is generated and available for review.

6.7 Use Case 7: Manage Users

Use Case ID	UC-007
Name	Manage Users
Actor(s)	System Administrator
Description	Allows administrator to add, update, or deactivate system users.
Preconditions	Administrator is logged into the system
Main Flow	1. Administrator views user list.
	2. Administrator adds or edits user details.
	3. Administrator assigns roles.
	4. System saves user information.
Alternative Flows	If username already exists, system displays an error.
Postconditions	User accounts are updated in the system.

7 Requirements Traceability Matrix

Req ID	User Story	Test Case	Status
FR-001	US-001	TC-001	Pending
FR-002	US-003	TC-002	Pending
FR-003	US-001	TC-003	Pending

FR-004	US-002	TC-004	Pending
FR-005	US-001	TC-005	Pending
FR-006	US-003	TC-006	Pending
FR-007	US-002	TC-007	Pending
FR-008	US-001	TC-008	Pending

8 Approval

Role	Name	Signature/Date
Project Supervisor	Mr Massoud Hamad Mmanga	
Team Lead	Abdalla Horera Fadhili	23/1/2026