

1. Introduction

1.1 Purpose

The purpose of this Functional Requirements Document (FRD) is to define the detailed functional requirements of the UCC-1 Filing Automation System. This document describes system behaviors, workflows, validations, and integrations required to automate the intake, verification, and processing of UCC-1 filings.

1.2 Scope

The scope of the UCC-1 Filing Automation System includes the following functionalities:

- Automated intake of UCC-1 filing applications received through a designated email inbox.
- Automatic extraction and processing of UCC-1 filing data and attached documents.
- Validation and cross-verification of extracted UCC-1 data with loan agreement information available in the Loan Origination System (LOS).
- Identification and flagging of exceptions such as missing documents, data mismatches, or incomplete filings.
- Automated categorization and status updates of UCC-1 filings throughout the processing lifecycle.
- Notification generation for approved, rejected, or exception cases.

1.3 Background

The Credit Union currently manages UCC-1 filing requests through a manual process involving email-based submissions, document downloads, and spreadsheet tracking. This approach requires significant human effort, involves multiple operational teams, and increases the risk of delays and data entry errors.

As the volume of UCC-1 filings continues to grow, the existing process has become inefficient and difficult to scale. To address these challenges, the Credit Union has initiated a UCC-1 Filing Automation project aimed at streamlining filing intake, improving data accuracy, reducing processing time, and lowering operational costs through automation.

1.4 Reference

The following documents and inputs were referenced during the preparation of this Functional Requirement Document:

- Business Requirement Document (BRD) – UCC-1 Filing Automation
- Existing As-Is and To-Be process documentation
- Stakeholder discussions and business walkthroughs
- Internal operational guidelines for UCC-1 filing processing

1.5 Assumptions & Constraints

Assumptions

- All UCC-1 filing applications are received through a designated and monitored email inbox.
- Submitted UCC-1 filings follow a standard format and include required documents as attachments.
- The Loan Origination System (LOS) contains accurate and up-to-date loan agreement data for verification purposes.
- Users accessing the system have appropriate roles and permissions assigned.
- The automation system is available during standard business hours for processing filings.

Constraints

- The system's functionality depends on the availability and performance of external systems such as the email server and Loan Origination System.
- Any changes to external system interfaces may impact the automated verification process.
- The system must comply with organizational security policies and data privacy regulations.
- Processing speed may vary based on email volume and system load.
- Manual intervention may be required for exception cases that cannot be resolved automatically.

1.6 Document Overview

This Functional Requirement Document is structured to provide a clear and detailed understanding of the UCC-1 Filing Automation System. The document begins with an introduction section that outlines the purpose, scope, background, assumptions, and constraints of the system.

Subsequent sections describe the methodology used to gather and define requirements, followed by detailed functional requirements that specify system behavior, workflows, validations, and integrations. The document also includes additional system requirements such as interface and operational considerations. Appendices are provided to support the document with definitions and reference information.

2. Methodology

The functional requirements for the UCC-1 Filing Automation System were identified and documented using a structured requirements analysis approach. Business requirements defined in the Business Requirement Document (BRD) were reviewed to understand the overall objectives and scope of the solution.

As-Is and To-Be process flows were analyzed to identify gaps in the existing process and define the desired system behavior. Stakeholder roles and responsibilities were considered to ensure that system functionality aligns with operational and compliance needs.

Process modeling, requirement decomposition, and validation techniques were applied to derive detailed functional requirements. The documented requirements were reviewed to ensure clarity, completeness, and alignment with business goals.

4.1 Context

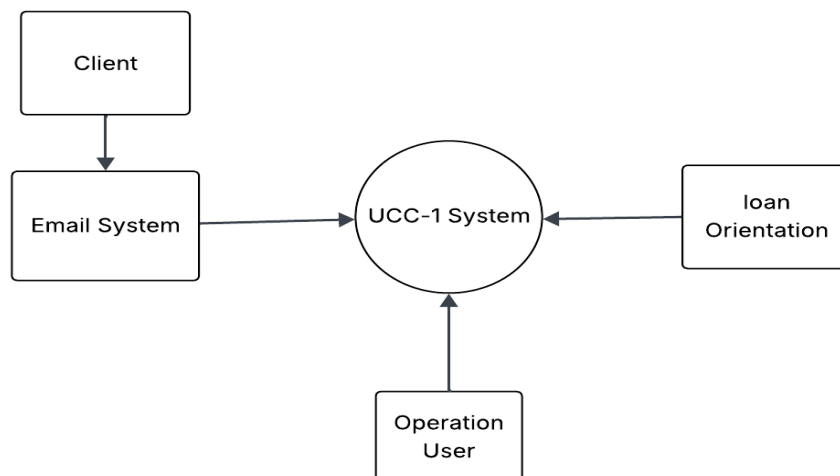
The UCC-1 Filing Automation System is designed to automate the intake, processing, verification, and status management of UCC-1 filings received by the Credit Union. The system operates as a centralized automation platform that interacts with multiple internal and external systems.

The primary external systems interacting with the UCC-1 Filing Automation System include the Email System, which serves as the intake channel for UCC-1 filings, and the Loan Origination System (LOS), which provides loan agreement data for verification purposes. Internal users such as Operations Users interact with the system to monitor processing, review exception cases, and manage system configurations.

The context diagram below illustrates the high-level interaction between users, the UCC-1 Filing Automation System, and dependent systems.

Detailed To-Be process flow diagrams are maintained as a separate artifact and are referenced for workflow understanding.

Context Diagram



4.2 User Requirements

UR-01

Operations users require the ability to automatically receive and process UCC-1 filings submitted via email.

UR-02

Operations users require visibility into the status and processing history of UCC-1 filings.

UR-03

Compliance officers require the ability to review UCC-1 filings that are flagged as exceptions by the system.

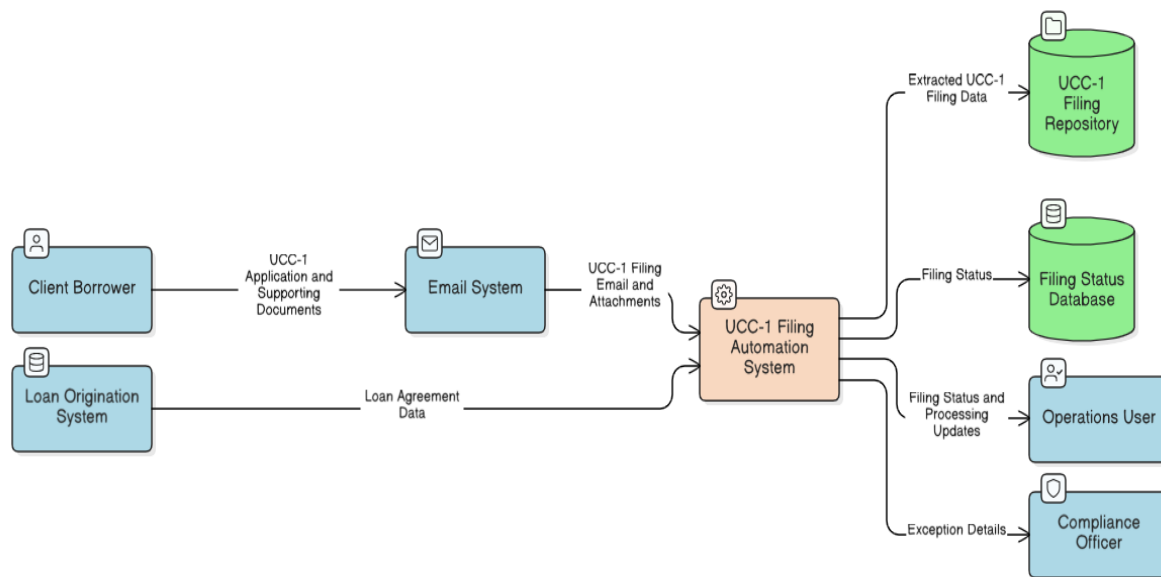
UR-04

Compliance officers require the ability to take corrective actions on exception cases when required.

UR-05

System administrators require the ability to configure validation rules, system parameters, and user access controls.

4.3 Data Flow Diagram



The Data Flow Diagram (DFD) illustrates the high-level movement of data between external entities, the UCC-1 Filing automation System, and internal data stores. It represents how UCC-1 filing data is received, processed, stored, verified, and communicated to users and external systems. The detailed business workflow is documented separately in the To-Be Process Flow Diagram.

4.4 Logical Data Model/ Data Dictionary

The logical data model identifies key data entities used by the UCC-1 Filing Automation System. The data dictionary below provides a high-level description of each entity and its primary attributes.

Data Entity	Description	Key Attributes
UCC-1 Form filing	Represents a UCC-1 application submitted by a client	Filing ID, Client Name, Filing Date, Collateral Details, Filing Status
Client	Represents the borrower submitting the UCC-1 filing	Client ID, Name, Email Address
Loan Agreement	Represents loan details used for verification	Loan ID, Loan Amount, Loan Type, Agreement Date
Filing Document	Represents documents attached to a UCC-1 filing	Document ID, Document Type, File Name
Filing Status	Represents the current processing state of a UCC-1 filing.	Status Code, Status Description, Last Updated Date.

4.4 Functional Requirements

Email Intake & Filing Collection

FR-01

The system shall scan the designated email inbox at predefined intervals to identify incoming UCC-1 filing emails.

FR-02

The system shall identify UCC-1 filing emails based on predefined keywords, sender rules, or subject line patterns.

FR-03

The system shall automatically download and store UCC-1 filing attachments in a predefined folder structure.

FR-04

The system shall record the date and time of receipt for each UCC-1 filing.

4.5.2 Data Extraction & Validation

FR-05

The system shall automatically extract required data fields from UCC-1 filing documents.

FR-06

The system shall validate extracted data for completeness and correct format.

FR-07

The system shall flag filings with missing, incomplete, or invalid data as exceptions.

4.5.3 Data Verification & Integration

FR-08

The system shall retrieve loan agreement data from the Loan Origination System (LOS) for verification.

FR-09

The system shall cross-verify extracted UCC-1 filing data with loan agreement data.

FR-10

The system shall mark filings as verified when all required data matches successfully.

FR-11

The system shall flag filings as exceptions when data mismatches are detected during verification.

4.5.4 Categorization & Status Management

FR-12

The system shall categorize UCC-1 filings based on predefined business rules.

FR-13

The system shall automatically update the status of UCC-1 filings throughout the processing lifecycle.

FR-14

The system shall maintain a history of status changes for audit and tracking purposes.

4.5.5 Notifications & User Access

FR-15

The system shall generate notifications for filings with missing documents or validation errors.

FR-16

The system shall send automated email notifications for approved, rejected, or exception cases.

FR-17

The system shall restrict system access based on user roles and permissions.

FR-18

The system shall allow System Administrators to configure validation rules and system parameters.

5.Other Requirements

5.1 Interface Requirements

Interfaces requirements describes the interfaces between the UCC-1 Filing Automation System and external systems or users.

5.1.1 Email System Interface

- The system shall integrate with the designated email server to receive UCC-1 filing emails and attachments.
- The system shall support standard email protocols (e.g., IMAP/POP3/SMTP) for email retrieval and notifications.
- The system shall be able to identify and process emails based on predefined rules such as sender address, subject line, or keywords.

5.1.2 Loan Origination System (LOS) Interface

- The system shall integrate with the Loan Origination System to retrieve loan agreement data for verification purposes.
- Data exchange between the systems shall be performed through secure APIs or approved data integration mechanisms.
- The system shall handle data retrieval failures and log interface errors for review.

5.1.3 User Interface

- The system shall provide a user interface for Operations Users to view UCC-1 filing status and processing history.
- The system shall provide a user interface for Compliance Officers to review exception cases and take corrective actions.
- The system shall provide administrative screens for System Administrators to manage configurations and access controls.

5.2 Data Conversion Requirements

The UCC-1 Filing Automation System is designed to process new UCC-1 filings received after the system go-live. No legacy data conversion or migration from existing systems is required as part of this project. Existing historical UCC-1 filing data maintained in spreadsheets or other manual records will remain unchanged and will not be migrated into the new system.

5.3 Hardware / Software Requirements

The UCC-1 Filing Automation System shall be implemented as a secure, web-based application capable of supporting automated processing and user access.

5.3.1 Hardware Requirements

- The system shall be hosted on servers capable of handling high volumes of email intake and document processing.
- Adequate storage capacity shall be provided to store UCC-1 filing documents, extracted data, and audit logs.
- The infrastructure shall support scalability to accommodate increasing filing volumes.

5.3.2 Software Requirements

- The system shall support integration with standard email servers and external systems such as the Loan Origination System.
- The system shall be compatible with commonly used web browsers for user access.
- A relational database or equivalent data storage solution shall be used to manage filing data and status information.
- The system shall comply with organizational security and software standards.

5.4 Operational Requirements

This section describes the operational characteristics required to ensure reliable, secure, and efficient functioning of the UCC-1 Filing Automation System.

5.4.1 Security and Access Control

- The system shall enforce role-based access control to restrict functionality based on user roles.
- Sensitive data shall be protected in accordance with organizational security and data privacy policies.
- User access and activities shall be logged for audit purposes.

5.4.2 Audit and Logging

- The system shall maintain an audit trail of all UCC-1 filing status changes.
- The audit trail shall include timestamps, user/system actions, and status updates.
- Audit logs shall be retained as per organizational record retention policies.

5.4.3 Reliability and Availability

- The system shall be available during standard business hours with minimal downtime.
- The system shall be capable of handling high volumes of UCC-1 filings without performance degradation.
- System failures shall be logged and monitored for timely resolution.

5.4.4 Recoverability

- The system shall support data backup and recovery mechanisms to prevent data loss.
- In the event of system failure, the system shall be recoverable within an acceptable timeframe.

5.4.5 Error Handling

- The system shall identify and handle errors such as missing attachments, invalid data, or system integration failures.
- Filings with errors shall be flagged as exceptions for review by Compliance or Operations users.
- Error notifications shall be generated and logged for tracking and resolution.