# Functional Requirement

Requirement ID Description  
AM-ASSET-001 The system shall allow users to enter 15–20 fields per asset, including name, category, specifications, purchase date, supplier, purchase amount, location, user, and status.  
AM-ASSET-002 The system shall automatically populate fields such as asset number, supplier information, and purchase contract number via integration or barcode scanning.  
AM-ASSET-003 The system shall integrate with the existing procurement and finance systems to automatically retrieve asset purchase price and payment date.  
AM-ASSET-004 The system shall support barcode scanning for fast and accurate asset data entry.  
AM-TRANSFER-001 The system shall support a multi-level approval workflow for asset transfers based on asset value and type.  
AM-TRANSFER-002 The system shall require assets valued over RMB 50,000 to be approved by the department head and finance manager.  
AM-TRANSFER-003 The system shall require assets valued under RMB 50,000 to be approved by the department head only.  
AM-TRANSFER-004 The system shall automatically assign the next approver in the workflow based on the asset’s department or ownership.  
AM-TRANSFER-005 The system shall allow for parallel approvals where applicable (e.g., finance and asset management departments).  
AM-TRANSFER-006 The system shall update the asset’s ownership and location in the system after a transfer is approved.  
AM-DISPOSAL-001 The system shall allow asset administrators to initiate a disposal request and provide a reason for disposal.  
AM-DISPOSAL-002 The system shall support the uploading of supporting documents (e.g., damage photos, expert evaluation reports) for disposal requests.  
AM-DISPOSAL-003 The system shall automatically archive disposal-related documents within the system.  
AM-DISPOSAL-004 The system shall handle disposal approvals through a parallel mechanism involving finance and asset management departments.  
AM-DISPOSAL-005 The system shall mark an asset as disposed once the approval process is complete.  
AM-REPORT-001 The system shall generate real-time visual reports (e.g., dashboards, charts) for asset audits and statistics.  
AM-REPORT-002 The system shall provide reports on asset distribution by department, asset status, and disposal records.  
AM-REPORT-003 The system shall eliminate the need for manual data export and reformatting in Excel by offering built-in reporting tools.  
AM-WF-001 The system shall support configurable approval workflows with conditional triggers based on asset value or type.  
AM-WF-002 The system shall automatically assign tasks to the appropriate approvers in the workflow.  
AM-WF-003 The system shall notify approvers via email and enterprise WeChat when a task is pending.  
AM-WF-004 The system shall provide a visual representation of the approval process, showing current stage, completed approvals, and pending approvals.

# External Description

# 5. Constraints  
  
## 5.1 Regulatory/Legal Constraints   
- \*\*RC-001\*\*: The system shall comply with all applicable data protection laws and regulations, including but not limited to the Personal Information Protection Law (PIPL) and any relevant internal policies on asset management.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To ensure legal compliance and avoid penalties or reputational damage due to data misuse.   
 - \*\*Source\*\*: SRL-2.4 (Assumptions and Dependencies)   
 - \*\*Acceptance Criteria\*\*: All data handling and storage mechanisms must be audited and verified for compliance with PIPL and internal policies.  
  
- \*\*RC-002\*\*: The system shall ensure that all disposal-related documentation is archived in accordance with the organization’s record-keeping and audit policies.   
 - \*\*Priority\*\*: Should Have   
 - \*\*Rationale\*\*: Disposal documentation is often required for internal and external audits.   
 - \*\*Source\*\*: FR-11 (Disposal document archiving)   
 - \*\*Acceptance Criteria\*\*: Disposal documents must be stored in an encrypted and searchable format within the system for a minimum of 7 years as per policy.  
  
## 5.2 Hardware Constraints   
- \*\*RC-003\*\*: The system shall support barcode scanning devices that are compatible with standard 1D and 2D barcode formats (e.g., QR, UPC, EAN).   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: Barcode scanning is a core requirement for fast and accurate asset entry.   
 - \*\*Source\*\*: FR-4 (Barcode scanning)   
 - \*\*Acceptance Criteria\*\*: The system must successfully read and process data from at least three different brands of barcode scanners.  
  
- \*\*RC-004\*\*: The system shall operate on standard computing devices, including desktops, laptops, and mobile devices, with no special hardware requirements beyond those defined in the operating environment.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To ensure broad accessibility and reduce dependency on proprietary or specialized hardware.   
 - \*\*Source\*\*: SRL-5.1 (Hardware Requirements)   
 - \*\*Acceptance Criteria\*\*: The system must run without performance issues on a device with at least 4GB RAM and an Intel i5 processor.  
  
## 5.3 Interface Constraints   
- \*\*RC-005\*\*: The system shall interface with the organization’s existing procurement and finance systems using predefined APIs and data formats.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: Integration is necessary to automate data entry and maintain data consistency.   
 - \*\*Source\*\*: FR-3 (Procurement and finance system integration)   
 - \*\*Acceptance Criteria\*\*: The system must successfully retrieve and display purchase price and payment date information from the procurement and finance systems within 5 seconds of request.  
  
- \*\*RC-006\*\*: The system shall interface with enterprise WeChat for real-time notifications, using the organization’s existing WeChat instance and API configuration.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: Real-time communication via enterprise WeChat is critical for timely approvals.   
 - \*\*Source\*\*: NFR-7 (WeChat notification support)   
 - \*\*Acceptance Criteria\*\*: All approval notifications must be delivered via enterprise WeChat with a success rate of at least 99.9% under normal network conditions.  
  
- \*\*RC-007\*\*: The system shall support integration with document management services for storage and retrieval of disposal-related documents.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: Disposal documents must be securely stored and easily accessible for audit and compliance.   
 - \*\*Source\*\*: FR-11 (Disposal document archiving)   
 - \*\*Acceptance Criteria\*\*: The system must allow upload and retrieval of PDF and image files (e.g., photos, reports) with no loss of content or metadata.  
  
## 5.4 Design and Implementation Constraints   
- \*\*RC-008\*\*: The system shall be developed using a modular architecture to support independent updates and scalability across asset management modules.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: A modular design ensures flexibility for future enhancements and easier maintenance.   
 - \*\*Source\*\*: SRL-2.1 (System Context and Background)   
 - \*\*Acceptance Criteria\*\*: Each functional module (e.g., asset entry, transfer, disposal) must be independently testable and deployable.  
  
- \*\*RC-009\*\*: The system shall not enforce any specific UI design patterns or technologies, allowing the implementation team to select the most appropriate framework for cross-platform compatibility.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To ensure the system can be implemented using the best available tools and technologies.   
 - \*\*Source\*\*: NFR-3 (User-friendly interface)   
 - \*\*Acceptance Criteria\*\*: The UI must be consistent across all supported platforms (Windows, macOS, iOS, Android) and compatible with modern web browsers.  
  
- \*\*RC-010\*\*: The system shall use a centralized identity management system (e.g., LDAP or SSO) for user authentication and role-based access control.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: Centralized authentication ensures secure and consistent user management across the organization.   
 - \*\*Source\*\*: NFR-5.6 (Authentication via centralized system)   
 - \*\*Acceptance Criteria\*\*: All user logins must be authenticated through the centralized system with no local user accounts allowed.  
  
- \*\*RC-011\*\*: The system shall not allow users to manually edit asset numbers or financial fields after initial entry.   
 - \*\*Priority\*\*: Should Have   
 - \*\*Rationale\*\*: To maintain data integrity and prevent unauthorized modifications to critical asset information.   
 - \*\*Source\*\*: NFR-9 (Data integrity for asset fields)   
 - \*\*Acceptance Criteria\*\*: Attempting to edit asset number or financial fields must result in an error message and no data changes.  
  
- \*\*RC-012\*\*: The system shall not require users to install any additional software beyond their standard operating environment to function correctly.   
 - \*\*Priority\*\*: Should Have   
 - \*\*Rationale\*\*: To reduce user friction and ensure the system is easily adopted.   
 - \*\*Source\*\*: SRL-2.4 (User Training and adoption)   
 - \*\*Acceptance Criteria\*\*: All core features must be accessible via a web browser without requiring local installations.  
  
## 5.5 Other Constraints   
- \*\*RC-013\*\*: The system shall not be developed using any proprietary or closed-source frameworks that would limit its deployment flexibility or integration with open systems.   
 - \*\*Priority\*\*: Should Have   
 - \*\*Rationale\*\*: To ensure long-term maintainability and compatibility with existing open-source infrastructure.   
 - \*\*Source\*\*: SRL-2.1 (Unified digital platform)   
 - \*\*Acceptance Criteria\*\*: All source code must be written in open standards and use open-source or widely supported libraries.  
  
- \*\*RC-014\*\*: The system shall not support asset transfers or disposals outside the organization’s active departments unless explicitly configured by IT Support.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To ensure that asset movements are tracked within the organization’s structure and not lost in external systems.   
 - \*\*Source\*\*: FR-5 (Multi-level approval based on asset value)   
 - \*\*Acceptance Criteria\*\*: Any attempt to transfer an asset to a non-recognized department must be rejected with a clear error message.  
  
- \*\*RC-015\*\*: The system shall not allow any changes to asset status (e.g., disposed, transferred) without a completed and logged approval workflow.   
 - \*\*Priority\*\*: Must Have   
 - \*\*Rationale\*\*: To maintain accountability and traceability of all asset lifecycle changes.   
 - \*\*Source\*\*: FR-8 (Asset status updates after approval)   
 - \*\*Acceptance Criteria\*\*: Asset status changes must only occur after the relevant workflow is completed, and the change must be logged with timestamp and user ID.