# Functional Requirement

1.1 Asset Registration Function

Function Number: FR-01

Description: Users can enter new asset information into the system. The system must support asset registration operations, including filling in basic asset information, initial status, initial location, etc., and automatically trigger the approval process based on the configured workflow.

Input: Fields such as asset name, category, status, location, purchase date, purchase price, description, and registrar ID.

Output: New asset registration record added to the database (AssetRegistrationInfo), asset information (Asset) updated, and approval process (if applicable) triggered.

1.2 Asset Management Function

Function Number: FR-02

Description: Users or system administrators can perform usage, transfer, or return operations on assets, update the asset status based on the operation type, and generate corresponding usage, transfer, or return records. The system must also determine whether to submit for approval based on the configured approval process.

Input: Asset number, operation type (usage, transfer, return), operator ID, operation time, approval status, etc.

Output: Updated asset status information (Asset), new or modified records for asset usage records (AssetUsageRecord), asset transfer records (AssetTransferRecord), asset return records (AssetReturnRecord), and triggering of the approval process (if applicable).

1.3 Asset Query Function

Function Number: FR-03

Description: Users or system administrators can query asset registration information, usage records, transfer records, or return records based on conditions such as asset number, asset name, category, status, registration time, etc., and support exporting query results as reports.

Input: Query conditions (asset number, asset name, category, status, registration time, etc.).

Output: Query result list (AssetRegistrationInfo, AssetUsageRecord, AssetTransferRecord, AssetReturnRecord, etc.), with support for exporting reports (Report).

1.4 Asset Transfer Application Function

Function Number: FR-04

Description: Users can submit asset transfer applications, filling in fields such as asset number, original user, new user, reason for transfer, application time, etc., and trigger the approval process.

Input: Asset number, original user ID, new user ID, reason for transfer, application time, etc.

Output: New asset transfer record (AssetTransferRecord) added, asset status updated to "In Transfer," and approval process (if applicable) triggered.

1.5 Asset Transfer Approval Function

Function Number: FR-05

Description: System administrators can approve asset transfer applications, fill in approval comments, choose "Approve" or "Reject" actions, and update the asset status and approval records based on the approval results.

Input: Approval status (approve/reject), approval comments, approval time, approver ID, asset number, original user ID, new user ID, etc.

Output: Updated approval record (ApprovalRecord), asset status updated, notification of approval status change, and operation log records.

1.6 Asset Return Application Function

Function Number: FR-06

Description: Users can submit asset return applications, filling in fields such as asset number, user ID, returner ID, return time, reason for return, application time, etc., and trigger the approval process.

Input: Asset number, user ID, returner ID, return time, reason for return, application time, etc.

Output: New asset return record (AssetReturnRecord) added, asset status updated to "In Return," and approval process (if applicable) triggered.

1.7 Asset Return Approval Function

Function Number: FR-07

Description: System administrators can approve asset return applications, fill in approval comments, choose "Approve" or "Reject" actions, and update the asset status and approval records based on the approval results.

Input: Approval status (approve/reject), approval comments, approval time, approver ID, asset number, user ID, returner ID, etc.

Output: Updated approval record (ApprovalRecord), asset status updated, notification of approval status change, and operation log records.

1.8 Approval Process Configuration Function

Function Number: FR-08

Description: System administrators can configure the approval process, including approval types (such as asset registration, asset transfer, asset return, etc.), approval steps, approver roles, approval order, approval conditions, etc.

Input: Fields such as approval process type, approval steps, approver roles, approval order, approval conditions, etc.

Output: Updated approval process (ApprovalProcess) configuration records, effective approval rules, and operation log records.

1.9 Approval Record Viewing Function

Function Number: FR-09

Description: Users or system administrators can query approval records, including approvers, approval times, approval statuses, approval comments, related asset numbers, etc., and support exporting reports.

Input: Query conditions (approval time range, approval status, asset number, approver, etc.).

Output: List of approval records (ApprovalRecord), with support for exporting as reports (Report).

1.10 User Registration Function

Function Number: FR-10

Description: Users can register new accounts, filling in information such as username, password, name, department, role, etc., and generate user information and authentication information.

Input: Fields such as username, password, confirm password, name, department, role, etc.

Output: New user (User) information added, authentication information (AuthenticationInfo) generated, initial permission allocation, and operation log records.

1.11 User Permission Allocation Function

Function Number: FR-11

Description: System administrators can assign permissions to registered users, including permissions for asset registration, asset management, asset query, asset transfer, asset return, approval operations, etc.

Input: Target user ID, permission name, allocation time, etc.

Output: New or updated user permission (Permission) records, effective permissions, and operation log records.

1.12 User Information Management Function

Function Number: FR-12

Description: System administrators can edit or view basic user information, including username, password, name, department, role, status, etc., and synchronize updates to authentication information and permission status.

Input: User ID, username, password, name, department, role, status, etc.

Output: Updated user (User) information, synchronized updates to authentication information (AuthenticationInfo), adjusted permission status, and operation log records.

1.13 System Administrator Login Function

Function Number: FR-13

Description: System administrators can log in to the system by entering their username and password, complete identity authentication, load their permission configuration, and enter the main interface.

Input: Username, password, verification code (if applicable).

Output: Updated system administrator login status, loaded permission configuration, and operation log records.

1.14 Report Generation Function

Function Number: FR-14

Description: Users or system administrators can generate reports on asset registration, usage, transfer, return, and approval records, and set query conditions.

Input: Fields such as report type, asset number, time range, status, department, user, etc.

Output: Generated report (Report), report content containing selected data, and operation log records.

1.15 Report Export Function

Function Number: FR-15

Description: Users or system administrators can export generated reports in formats such as Excel, PDF, and provide download links.

Input: Report ID, export format (Excel, PDF, etc.).

Output: Report file export completed, download link generated, and operation log records.

1.16 Data Import Function

Function Number: FR-16

Description: System administrators can upload asset information files, and the system will batch-import asset registration, usage, transfer, or return records based on the file content.

Input: Excel or CSV format file, containing fields such as asset number, asset name, category, status, user ID, etc.

Output: Imported data for asset information (Asset), asset registration information (AssetRegistrationInfo), usage records (AssetUsageRecord), transfer records (AssetTransferRecord), return records (AssetReturnRecord), and operation log records.

1.17 Data Export Function

Function Number: FR-17

Description: Users or system administrators can export data such as asset registration information, usage records, transfer records, return records, etc., in formats such as Excel, PDF, and provide download links.

Input: Export data type (asset registration, usage records, transfer records, return records), export format (Excel, PDF, etc.).

Output: Exported file generated and provided with a download link, and operation log records.

1.18 Authentication Information Management Function

Function Number: FR-18

Description: System administrators can manage user authentication information, including password resets, account locking, unlocking, disabling, and other operations, and synchronize updates to user status and permissions.

Input: User ID, username, password, authentication status (normal, locked, disabled, etc.).

Output: Updated authentication information (AuthenticationInfo), synchronized updates to user status, adjusted permission status, and operation log records.