Mysoftheaven (BD) Ltd.
A Complete IT Solution

Design & Development of Asset Management System (AMS)

Version: 01

MYSOFT HEAVEN (BD) LTD.

1. Overall Description

The Banking Asset Management System will be a **standalone application designed for seamless integration** with the bank's existing CBS. It will not replace the CBS but will augment its financial capabilities specifically for fixed asset management. The AMS will act as the master repository for all non-current assets, providing detailed operational and financial insights not typically available within the CBS. Data synchronization with CBS will be paramount for accurate financial statements and compliance.

2.1 Product Perspective

2.2 Product Functions

The main functions of the system include:

- ✓ Comprehensive asset registration and master data management.
- ✓ Automated depreciation calculation using various methods.
- ✓ Seamless integration with CBS for General Ledger (GL) postings related to asset acquisition, depreciation, revaluation, and disposal.
- ✓ Efficient asset tracking, allocation, and transfer.
- ✓ Robust reporting and dashboard capabilities for financial, operational, and audit purposes.
- ✓ Management of asset disposal and retirement.

2.3 User Characteristics

- ✓ **Finance Department Users (Accountants, Controllers):** High financial literacy, strong understanding of IFRS and BB regulations, requires accurate depreciation, GL integration, and financial reports.
- ✓ **Operations Department Users (Branch Managers, Facilities Managers):** Responsible for physical asset tracking, allocation, and movement. Needs easy-to-use interface for asset tagging, verification, and transfer.
- ✓ **Procurement Department Users:** Involved in asset acquisition process, needs integration with purchase records.
- ✓ **IT Department Users:** Responsible for IT asset tracking, potentially integration with IT service management (ITSM) tools.
- ✓ **Internal Auditors:** Requires comprehensive audit trails, transparent reporting, and ability to verify asset records against physical existence.
- ✓ **System Administrators:** Responsible for system configuration, user management, and data imports/exports.

3. Specific Requirements

3.1 Functional Requirements (MVP & Future)

3.1.1 Asset Master Data Management

- ✓ **FR-AMS-001: Asset Categorization:** The system shall allow creation and management of multi-level asset categories and sub-categories (e.g., "IT Assets" > "Laptops," "Branch Infrastructure" > "Furniture & Fixtures").
- ✓ **FR-AMS-002: Asset Attributes:** The system shall support capturing detailed attributes for each asset, including:
  - Unique Asset ID (auto-generated)
  - Asset Name/Description
  - Asset Category/Sub-category
  - Acquisition Date
  - Cost (Original Cost, Capitalized Cost)
  - Supplier Information
  - Serial Number / Batch Number
  - Warranty Information
  - Location (Branch, Department, Floor, Room)
  - Assigned Employee/Custodian
  - Asset Status (e.g., In Use, Under Maintenance, Disposed, Retired)
  - Custom fields (configurable by admin).
- ✓ **FR-AMS-003: Asset Tagging:** The system shall support generation of printable asset tags (e.g., QR codes, barcodes) containing key asset information.
- ✓ **FR-AMS-004: Asset Bulk Import/Export:** The system shall allow bulk import of asset data from structured files (e.g., Excel, CSV) and export of asset data for reporting.

3.1.2 Asset Acquisition

- ✓ **FR-AMS-005: Manual Asset Entry:** The system shall allow manual entry of new asset records.
- ✓ **FR-AMS-006: Capitalization:** The system shall allow the capitalization of expenses into asset costs, including adding subsequent costs (e.g., installation, freight) to the asset's capitalized value.
- ✓ **FR-AMS-007: Automated Acquisition Workflow (Future):** The system could integrate with procurement modules to automatically create asset records from purchase orders/invoices.

3.1.3 Asset Depreciation Management (Core Banking Need)

- ✓ **FR-AMS-008: Depreciation Method Configuration:** The system shall support configuration of multiple depreciation methods as per IFRS and BB guidelines, including:
  - Straight-Line Method
  - Written Down Value (WDV) / Declining Balance Method
  - Units of Production Method (Future)
- ✓ **FR-AMS-009: Depreciation Parameters:** For each asset, the system shall allow definition of:
  - Depreciation Method
  - Useful Life (in years or units)
  - Salvage Value / Residual Value
  - Depreciation Start Date
- ✓ **FR-AMS-010: Automated Depreciation Calculation:** The system shall automatically calculate monthly/quarterly/annual depreciation charges for all applicable assets based on configured methods and parameters.
- ✓ **FR-AMS-011: Depreciation Schedule Generation:** The system shall generate a detailed depreciation schedule for each asset, showing monthly/annual depreciation, accumulated depreciation, and net book value over its useful life.
- ✓ **FR-AMS-012: Depreciation Posting (Crucial for CBS Integration):** The system shall generate batch depreciation entries (debit Depreciation Expense, credit Accumulated Depreciation) ready for posting to the bank's General Ledger via CBS integration.

3.1.4 Asset Tracking & Allocation

- ✓ **FR-AMS-013: Location Tracking:** The system shall track the current physical location of each asset (e.g., specific branch, department, office).
- ✓ **FR-AMS-014: Custodian Assignment:** The system shall allow assignment of a responsible employee or department as the custodian for each asset.
- ✓ **FR-AMS-015: Asset Verification:** The system shall support periodic physical verification of assets against system records, including discrepancy reporting.

3.1.5 Asset Movement & Transfer

- ✓ **FR-AMS-016: Internal Transfer:** The system shall allow recording of asset transfers between locations (branches, departments) with an audit trail of movement history.
- ✓ **FR-AMS-017: Transfer Approval Workflow (Future):** Support for multi-level approval workflows for asset transfers.

3.1.6 Asset Disposal / Retirement

- ✓ **FR-AMS-018: Disposal Recording:** The system shall allow recording of asset disposal due to sale, write-off, obsolescence, or damage.
- ✓ **FR-AMS-019: Gain/Loss Calculation:** The system shall automatically calculate the gain or loss on disposal based on the asset's net book value and sale proceeds (if any).

- ✓ **FR-AMS-020: Disposal Posting (Crucial for CBS Integration):** The system shall generate batch accounting entries for asset disposal (e.g., debit Cash/Bank for proceeds, debit Accumulated Depreciation, credit Asset Cost, credit/debit Gain/Loss on Disposal) ready for posting to the GL via CBS integration.

3.1.7 Reporting & Dashboards

- ✓ **FR-AMS-021: Interactive Dashboard:** Provide a configurable dashboard for key asset management KPIs:
  - Total Asset Value (Gross and Net)
  - Current Month's Depreciation Expense
  - Assets by Category/Location
  - Upcoming Depreciations
  - Recently Acquired/Disposed Assets
- ✓ **FR-AMS-022: Asset Register Report:** A comprehensive report listing all assets with their key details, original cost, accumulated depreciation, and net book value.
- ✓ **FR-AMS-023: Depreciation Schedule Report:** Detailed report showing depreciation for selected periods.
- ✓ **FR-AMS-024: Disposal Gain/Loss Report:** Report detailing gains or losses from asset disposals.
- ✓ **FR-AMS-025: Asset Movement History Report:** Report showing all transfers and movements of assets.
- ✓ **FR-AMS-026: Customizable Reports:** Ability for authorized users to generate custom reports based on various asset attributes.
- ✓ **FR-AMS-027: Export Capabilities:** All reports shall be exportable to common formats (e.g., PDF, Excel, CSV).

3.1.8 Core Banking Solution (CBS) Integration (HIGH PRIORITY MVP Feature)

- ✓ **FR-AMS-028: GL Account Mapping:** The system shall allow mapping of asset categories to specific GL accounts (Asset Cost Account, Accumulated Depreciation Account, Depreciation Expense Account, Gain/Loss on Disposal Account) within the AMS, which aligns with the bank's CBS Chart of Accounts.
- ✓ **FR-AMS-029: Automated Journal Entry Generation:** The system shall automatically generate journal entries for:
  - Asset Capitalization
  - Monthly/Periodic Depreciation Posting
  - Asset Disposal (Sale/Write-off)
  - Asset Revaluation (Future)
  - Each entry should include relevant details (e.g., date, amount, GL accounts, description, reference to asset ID).
- ✓ **FR-AMS-030: Journal Entry Export/API Sync:** The system shall support:
  - **Option 1 (MVP Focus):** Exporting generated journal entries in a format compatible with the bank's CBS for bulk import (e.g., CSV, XML template provided by CBS vendor).

- Option 2 (Future/Ideal): Direct API integration with the CBS to push journal entries programmatically. (Requires bank's CBS API details and approval).

✓ **FR-AMS-031: Reconciliation Reports:** The system shall generate reconciliation reports comparing the AMS's financial summary with the GL balances in CBS (manual comparison for MVP, automated for future).
✓ **FR-AMS-032: Error Handling for Integration:** The system shall provide clear logging and error messages for any failed CBS integration attempts and mechanisms for manual retry or correction.

3.2 Non-Functional Requirements

3.2.1 Security (Highest Priority for Banks)

✓ **NFR-S-1: Authentication:** Implement robust multi-factor authentication (MFA) for all user logins.
✓ **NFR-S-2: Authorization (RBAC):** Implement granular Role-Based Access Control (RBAC) to ensure segregation of duties (e.g., only specific users can approve disposals, only finance users can post depreciation).
✓ **NFR-S-3: Data Encryption:** All sensitive data (e.g., financial values, user credentials) shall be encrypted both **in transit (TLS 1.2 or higher)** and **at rest (AES-256 or equivalent)**.
✓ **NFR-S-4: Audit Trail:** A comprehensive, immutable audit trail shall be maintained for every create, read, update, and delete (CRUD) operation, including user ID, timestamp, and changes made. This is critical for regulatory compliance.
✓ **NFR-S-5: Vulnerability Management:** Regular security audits and penetration testing to identify and remediate vulnerabilities.
✓ **NFR-S-6: Session Management:** Secure session management to prevent session hijacking.

3.2.2 Performance

✓ **NFR-P-1:** All dashboard load times and individual asset detail page loads shall be under 2 seconds.
✓ **NFR-P-2:** The system shall support at least 500 concurrent users without noticeable performance degradation.
✓ **NFR-P-3:** Batch processing for depreciation or integration data export shall be non-blocking for user interaction.

3.2.3 Reliability & Availability

✓ **NFR-R-1:** The system shall achieve a minimum uptime of 99.99% (excluding planned maintenance).
✓ **NFR-R-2:** Implement robust backup and restore procedures with defined Recovery Point Objective (RPO) and Recovery Time Objective (RTO) targets agreed with the bank.
✓ **NFR-R-3:** Automated monitoring and alerting for system health and performance.

3.2.4 Scalability

- ✓ **NFR-SC-1:** The system must be capable of managing at least 5 million asset records efficiently.
- ✓ **NFR-SC-2:** The architecture shall support horizontal scaling to accommodate future growth in user base and data volume.

3.2.5 Compliance

- ✓ **NFR-C-1: Regulatory Alignment:** The system's accounting and reporting functionalities must align with Bangladesh Bank (BB) regulations and circulars related to fixed assets.
- ✓ **NFR-C-2: IFRS Compliance:** All financial calculations (especially depreciation, revaluation, gain/loss on disposal) shall comply with relevant International Financial Reporting Standards (IFRS) applicable in Bangladesh.
- ✓ **NFR-C-3: Data Retention:** The system shall support configurable data retention policies as per regulatory requirements.

3.2.6 Usability & User Experience (UX)

- ✓ **NFR-U-1:** The UI shall be intuitive, clean, and professional, consistent with banking software standards.
- ✓ **NFR-U-2:** Navigation should be straightforward, minimizing clicks to access core functionalities.
- ✓ **NFR-U-3:** Error messages shall be clear, informative, and provide actionable solutions.
- ✓ **NFR-U-4:** Contextual help and tooltips should be available for complex fields or processes.

3.2.7 Maintainability

- ✓ **NFR-M-1:** The system's codebase shall be well-documented, modular, and follow industry best practices for maintainability and future enhancements.
- ✓ **NFR-M-2:** The system should have clear logging mechanisms for troubleshooting and issue resolution.