

Laboratory Fixed Asset Management System

Case Providing Department: Laboratory and Technical Management

Office

Supported by LM

1. Background

Laboratories across various departments in our university undertake heavy teaching and research responsibilities, with a vast number of fixed assets that are diverse, highly specialized, and of significant value. Prior to the platform's implementation, laboratory asset information management faced notable challenges: while the asset ledger was uniformly managed by the Finance Office, dynamic data such as the specific usage status, real-time location, accessories, technical parameters, and warranty information of the assets were recorded individually by various laboratories, or even by supervisors and graduate students, on personal computers or paper notebooks. This led to severe "information silos." This model resulted in the following issues:

- **Fragmented and Missing Information:** Equipment status was opaque.

When students graduated or personnel changed, critical information (e.g., accessories, suppliers) of assets were easily lost, creating significant difficulties for subsequent use and management.

- **Low Management Efficiency:** Inventory checks of laboratory assets required extensive manual communication and verification.
- **Underutilization of Assets:** The inability to quickly locate functionally suitable and well-maintained equipment led to redundant purchases or idle assets.
- **Unclear Management Accountability:** The lack of unified maintenance tracking and access control meant that issues such as equipment damage and expired warranties often went unaddressed, resulting in financial losses for both the university and the laboratories.

2. Solutions

Based on the fixed asset master data from the university's Finance Office, we have developed a centralized laboratory asset management platform.

The core solutions are as follows:

Data Integration and Information Expansion: Using the financial asset number as the unique identifier, detailed operational and technical attributes have been added to the basic financial asset information, creating an integrated "financial-technical" asset archive. Newly added fields include: equipment images, technical specifications, accessories, asset status (e.g., Normal, Scrapped, To Be Scrapped, Malfunctioning,

Lost), physical location, warranty expiration date, supplier contact information, and high-risk equipment labels.

Hierarchical Permissions and Role Management: A three-tier permission system has been established to align with the management structure of university laboratories:

1. System Administrator: Has full platform data permissions and is responsible for bulk importing new asset data and system maintenance.

2. Lab/ School Technical Manager: Can view and manage asset data for all laboratories under their responsibility, enabling overall coordination and review.

3. Lab Technician Permissions: Can only view and are authorized to edit asset data they are responsible for or use.

Automation and Precise Authorization: The system automatically executes permission assignments daily for new assets in the early morning, ensuring newly entered assets are promptly incorporated into the system.

3. Outcomes and Benefits

- **Enhanced Precise Management of Equipment Maintenance and Usage:** By improving the tracking of equipment warranty dates,

usage status, and the comprehensive entry of relevant data, precise control over the equipment operation and maintenance process has been achieved, extending equipment lifespan and enhancing usage efficiency and safety.

- **Visualized Management of the Entire Asset Lifecycle:** The platform centralizes fragmented information and transforms implicit knowledge into explicit records, fully documenting the entire process of assets from acquisition and use to maintenance and disposal. This effectively prevents management disruptions caused by personnel turnover.
- **Promotion of Asset Sharing and Optimized Allocation:** Administrators can clearly monitor the inventory and utilization rates of assets across all laboratories. This provides a data-driven basis for facilitating equipment sharing and avoiding redundant purchases, thereby improving overall asset utilization efficiency.