

ABSTRACT

The Faculty of Industrial Engineering (FRI) at Telkom University manages a wide variety of assets distributed across multiple buildings, including classrooms, laboratories, and administrative offices. These assets are essential to the operational efficiency of academic activities. However, the current asset management system at FRI is fragmented and heavily reliant on manual processes. Asset data is stored in scattered formats, leading to difficulties in maintaining an accurate overview of asset locations, conditions, and maintenance schedules. This fragmentation creates significant challenges for FRI, particularly in difficulties in monitoring maintenance for office assets in Faculty of Industrial Engineering. The lack of a unified, integrated system has contributed to inefficiencies, increased costs, and operational delays. Thus, there is a critical need to develop an improved Management Information System (MIS) that can streamline and centralize asset management at FRI. This study aims to address these challenges by designing and implementing a comprehensive MIS specifically tailored to meet the needs of FRI's asset management.

To solve these issues, the study proposes the development of a centralized MIS, using the Scrum methodology as the system development framework. Scrum is a flexible, iterative approach to software development that emphasizes continuous collaboration and incremental improvements. It is particularly suited for complex, dynamic environments like asset management in universities, where requirements may change frequently, and stakeholders need to be regularly involved in the development process. The Scrum framework begins with identifying user needs through interviews and observations. These needs are then translated into user stories, which form the basis of the system's functionality. Each user story focuses on a specific feature or requirement of the system, such as real-time asset tracking, automated maintenance alerts, or detailed reporting on asset conditions. The development process is broken down into short, manageable sprints, with each sprint focusing on delivering a functional aspect of the MIS. The system's core features include a centralized dashboard for real-time monitoring of asset status, automated workflows for maintenance scheduling, and standardized processes for asset acquisition, tracking, and disposal. By automating these processes, the

system eliminates the need for manual data entry, reducing the potential for human error and ensuring that all asset information is up-to-date and accessible. The MIS also incorporates a lifecycle tracking feature that enables administrators to monitor each asset's condition from acquisition to disposal. This feature helps in planning preventative maintenance, reducing downtime, and optimizing asset usage throughout its lifecycle.

The results of this research indicate that the proposed MIS addresses the key challenges identified during the initial analysis. The system successfully centralizes asset data, making it easier for staff to access critical information such as asset location, status, and maintenance history. This centralized approach significantly improves the efficiency of asset management processes at FRI. By automating maintenance schedules and providing real-time updates on asset conditions, the system reduces the workload on staff and ensures that equipment is properly maintained, leading to lower operational costs and fewer instances of equipment failure. Additionally, the system's ability to generate detailed reports on asset usage and maintenance needs helps administrators make more informed decisions about future asset purchases and replacements. The improved MIS offers significant benefits to all stakeholders within the Faculty of Industrial Engineering. Faculty staff, administrators, and technicians can now access accurate information quickly, facilitating better decision-making and more structured use of resources. The system's automation capabilities reduce manual errors, streamline workflows, and ensure that maintenance is performed on schedule, leading to longer asset lifecycles and cost savings. Moreover, the MIS enhances collaboration among different departments within the faculty, as all stakeholders have access to the same real-time data, which improves communication and coordination.

In conclusion, the development of a centralized MIS for asset management at Telkom University's Faculty of Industrial Engineering significantly enhances the efficiency and accuracy of managing assets across the faculty. By integrating asset tracking, maintenance scheduling, and lifecycle management into a single system, the MIS streamlines processes, reduces operational costs, and improves decision-

making. This research contributes to the broader field of university asset management, providing a model for other institutions facing similar challenges in managing diverse and distributed asset portfolios.

Keywords — *Asset Management, Management Information System, Maintenance, Scrum*