

## **ABSTRACT**

RFID technology enables supply chains to be synchronized by providing visibility. The application of RFID technology can provide inventory information in real time because RFID technology enables inventory tracking in real time. The use of RFID technology can increase the efficiency and effectiveness of warehousing management.

This research presents a case study of RFID technology-based real time stock monitoring system in PT TMMIN Plant Sunter 1. The design of RFID technology-based real time monitoring system is the second step taken by PT TMMIN Plant Sunter 1 for their design of RFID-based intelligent warehousing management systems (RFID-based intelligent warehouse management system) after implementing RFID technology in the receiving process. This research aims to design a real time stock monitoring system based on RFID technology in order to automate the manual inventory taking process and provide a tight system integration with the current warehousing management system. Real time stock monitoring system application was also developed to provide visibility of stock monitoring results in real time.

The real time stock monitoring system in this company has not been implemented because it is still in the process of being worked on so that the author analyzes the current system with the proposed system supported by simulations to get the time after the RFID system and compares it with the existing system which shows that with the real time stock monitoring system. based on RFID technology, it can increase the efficiency of inventory control work processes by as much as 69% at PT TMMIN Plant Sunter 1.

Keywords: RFID, Real Time Stock Monitoring, RFID-based Warehouse Management System, Inventory Control System Application, Discrete Event Simulation