

ABSTRACT

The weapon storage system that still relies on wooden racks with chains and regular padlocks in several military institutions in Indonesia is considered ineffective and vulnerable to potential security threats in weapon storage. Therefore, this research proposes the design and development of an automated weapon storage system to enhance weapon security, specifically for the SS1-V1 rifle. The system utilizes integrated technologies such as RFID, linear actuators, load cells, and the Arduino Mega 2560. This system is designed so that only authorized users can access the weapons, using the RFID sensor for authentication, while the linear actuator functions as a lock to automatically open and close the weapon rack, and the load cell module is used to detect the weight of the weapon, ensuring that the weapon is stored according to procedure. With this system, weapons can be stored more securely, reducing the risk of theft, and minimizing human error. The results of this study show that the automated weapon storage system requires an average of 5 seconds to open the weapon rack and 7 seconds to lock the weapon rack. The total time for storing a weapon using this automated system is only 12 seconds. These results indicate that the automated weapon storage system can be a more effective and efficient solution to enhance weapon security compared to conventional storage rack systems.

Keywords: Automated Weapon Rack, SS1-V1, RFID, Linear Actuator, Load Cell