

ABSTRACT

Weapons security management is a crucial aspect in military and police environments. In order to improve the security system and efficiency of access to weapon storage racks, an Arduino Uno microcontroller-based automatic locking system combined with RFID technology and horse lock as the main locking actuator has been developed. The system allows only users who have a registered RFID card to unlock the rack, while unauthorized users will be automatically rejected by the system with an audible warning through a buzzer.

The development process includes design, hardware implementation, and microcontroller software integration. Tests were conducted to evaluate the response time of the horse lock compared to the gripper lock, as well as the system's robustness to continuous RFID authentication cycles. The test results show that the horse lock has a faster and more stable response time than the gripper, with better resistance to tampering during long-term usage cycles.

The system proved to be effective in improving the security and efficiency of access control to weapon racks. Future development can focus on IoT integration, adding system logging, and improving microcontroller performance. This system is expected to be implemented in a real weapon storage environment with a high level of security.

Keywords: *(automatic locking system, RFID, Arduino Uno, horse lock, weapon rack.)*