

ABSTRACT

The fabrication of ammunition, particularly bullets, carries the responsibility of ensuring good quality. Quality control is one of the efforts in establishing a sustainable process to ensure shooter safety standards, regulatory compliance, efficiency, cost control, and productivity. In traditional ammunition fabrication, bullet quality control is verified using a Scanning Electron Microscope (SEM) with automated methods and representative sample testing. However, representative sample testing may not always cover all bullets produced by the factory, potentially leading to an inability to detect issues in some bullets. Meanwhile, automated testing methods may not detect smaller defects or issues that may occur in bullets, increasing the risk of undetected defective bullets entering circulation. To address these issues, a web-based ammunition quality control application has been developed to improve efficiency in ammunition fabrication. The application is capable of classifying each bullet based on its casing condition, maintaining well-documented classification results, managing classification result reports, and supervising the evaluation process of classifications to generate real-time information. The application development methodology follows the Software Development Life Cycle (SDLC) waterfall model, with analysis of requirements and system design using Object Oriented Analysis and Design (OOAD) approach, and testing using Black Box Testing method.

Keywords : bullets, quality control, waterfall, Object Oriented Analysis and Design (OOAD), Black Box Testing.