**SECURING SMART INVENTORY MANAGEMENT SYSTEMS: A REVIEW OF CYBERSECURITY APPROACHES AND CHALLENGES**

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**Abstract**

Smart inventory system has advanced significantly over the years which greatly improved operational efficiency. However, these rapid developments have also introduced new and improved cybersecurity attacks involving data breaches, ransomware and insider threats. This study aims to develop an application-level framework for secure smart inventory systems, to implement key cybersecurity features, and to examine the performance of these features in practical settings. A literature review is conducted using Scopus, the university library’s database and Google Scholar with publication dated to 5 years back. Findings show that encryption, zero-trust networks and AI-based monitoring are widely used, though many studies did not explicitly test these methods' performance or its compliance with established cybersecurity standards and frameworks. Therefore, further real-world testing and validation are necessary to ensure both effectiveness and regulatory abidance in future implementations.

Keywords: Cybersecurity, Inventory Management, Inventory System, Smart Inventory System, Application Security