

Smart RFID and IoT-based Inventory Management System for Warehouses

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ABSTRACT:The RFID warehouse inventory monitoring system enhances inventory management by automating the monitoring of stock levels and minimizing errors. With RFID readers at shelf levels, the system offers real-time monitoring of product movement, basically doing away with the hand reading of barcodes. All the products have an RFID tag that enables traceability of location as well as automatic stock updating. The system offers the guarantee of precision and speed, and low-stock alerts to notify managers when stock levels are at sub-optimal levels. Additionally, real-time order processing and reporting provide on-the-spot updates on stock quantity, trends, and order history to facilitate making decisions. There is also built-in weather forecasting to enhance efficiency by predicting possible delays or shutdowns in delivery due to poor weather. To predict the impact of poor weather, the system uses proactive logistics planning to enhance supply chain reliability and reduce risk areas for stockouts. These capabilities all act together in harmony to provide maximum operational efficiency, system reliability, and overall warehouse toughness.

KEYWORDS: RFID technology, Warehouse stock tracking, RFID readers, Product movement tracking, Real-time monitoring, Automated stock updates, Low-stock alerts, Order processing, Data-driven decision making, Weather forecasting monitoring.