

“Track And Trace Supply Chain”

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Data Management of RFID-based Track-and-Trace Anti-counterfeiting in Apparel Supply Chain

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The paper presents an RFID-based track-and-trace anti-counterfeiting system to ensure high product visibility throughout the supply chain by creating an electronic pedigree (e-pedigree) for each product. This system is essential in combating counterfeit goods and improving supply chain efficiency by providing real-time product tracking.

Key components of the research include:

- *Data Management* : Proposing a well-structured data format for capturing, filtering, and synchronizing RFID data to maintain the integrity of e-pedigrees, ensuring reliable product authentication.
- *E-Pedigree Structure*: Developing a data format that supports full traceability at item, pallet, and batch levels, allowing authentication and product status predictions.

- *Data Synchronization*: Establishing a three-step data synchronization mechanism to ensure the accuracy of product history along the supply chain.
- *Access Control*: Implementing a role-based access control (RBAC) mechanism to protect sensitive data from unauthorized access, thereby preventing data leakage or falsification.

Conclusion:

The paper concludes by emphasizing the need for practical implementation of the proposed model and further evaluation in real-world scenarios to combat counterfeiting effectively.

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