

For Retail Distribution Warehouse & Outlet Branches

Executive Summary

Retail operations rely heavily on reusable tote boxes to move goods between the Central Warehouse (CW) and Retail Branches (RB). Currently, limited visibility of tote movements leads to losses, shortages at branches, excess purchases, and manual reconciliation.

This proposal outlines a Tote Box Tracking Solution that enables end-to-end visibility of tote box movements as they circulate:

From Central Warehouse → Retail Branch

From Retail Branch → Central Warehouse

The solution ensures accurate tracking, accountability, and optimized tote utilization using barcode and RFID technology, integrated with a central tracking system.



Current Challenges

Retail warehouses that lack a proper Totebox tracking system often face significant operational challenges, including misplaced containers, inefficient inventory visibility, and time-consuming manual searches. These issues lead to delays in order fulfillment, increased labor effort, and higher risk of stock discrepancies. Without real-time tracking, accountability is reduced, making it difficult to optimize workflows, maintain accuracy, and support smooth logistics operations within a fast-paced retail environment.

Common issue

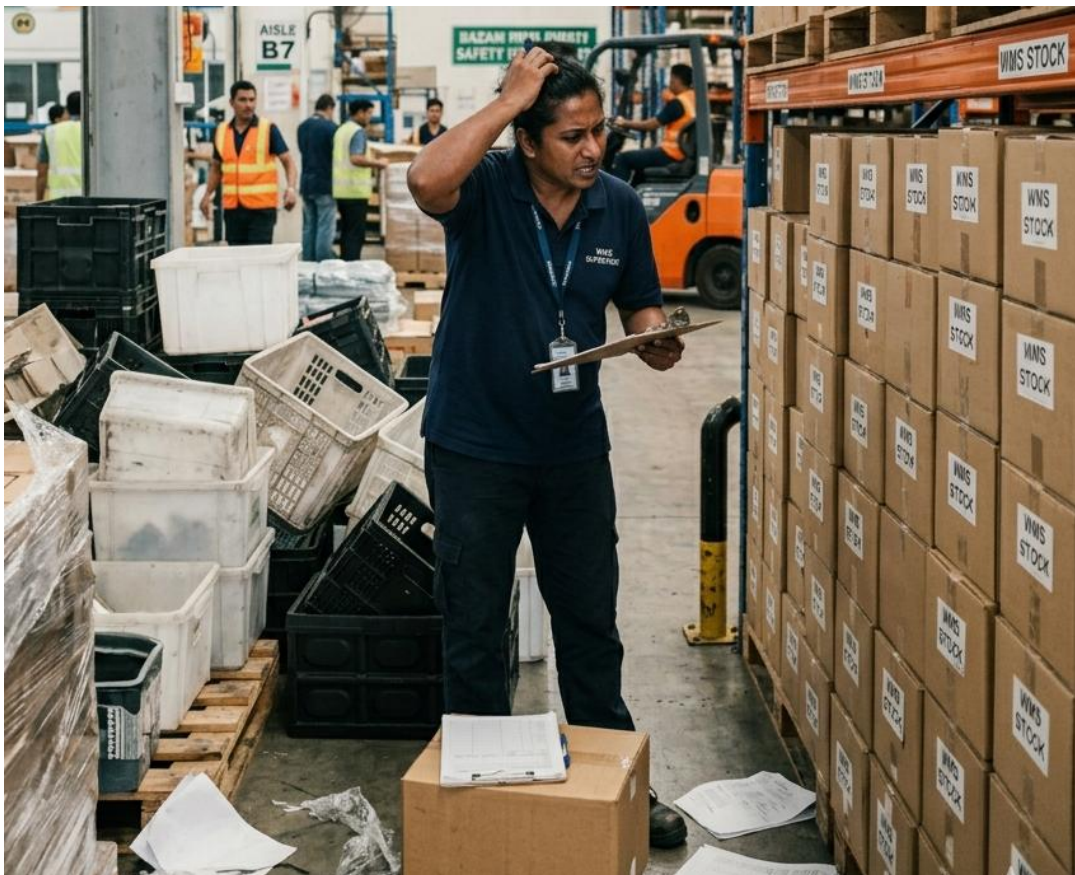
No real-time visibility of tote box location

Tote boxes misplaced or not returned by branches

Manual recording causes errors and delays

Overstocking or emergency purchases of tote boxes

Difficult to assign responsibility for missing totes



Objectives of the Solution

The AGen Totebox Tracking Solution aims to eliminate costly losses, delays, and inefficiencies by providing real-time visibility, accurate tracking, and automated workflows. It empowers your team to locate every totebox instantly, reduce manual errors, and speed up operations. With improved accountability and data-driven insights, your warehouse becomes more efficient, scalable, and reliable—helping you save costs, boost productivity, and delivers better service to your customers.

Feature

Track tote box IN / OUT movements between locations

Know where each tote box is and who last handled it

Reduce tote loss and replacement cost

Improve operational efficiency and accountability

Provide management reports for decision-making



Proposed Solution Overview

Each tote box will be uniquely identified and tracked throughout its lifecycle. AGen offer you 3 different types of tracking solutions for your Totebox.

Tote Identification (Choose One)

Option A: Barcode (Lower Cost)

Durable barcode label per tote box

Scanned using handheld scanner or mobile device

Option B: RFID (Automation & Scalability)

Passive UHF RFID tag attached to each tote box

Automatically detected at dock doors or gates

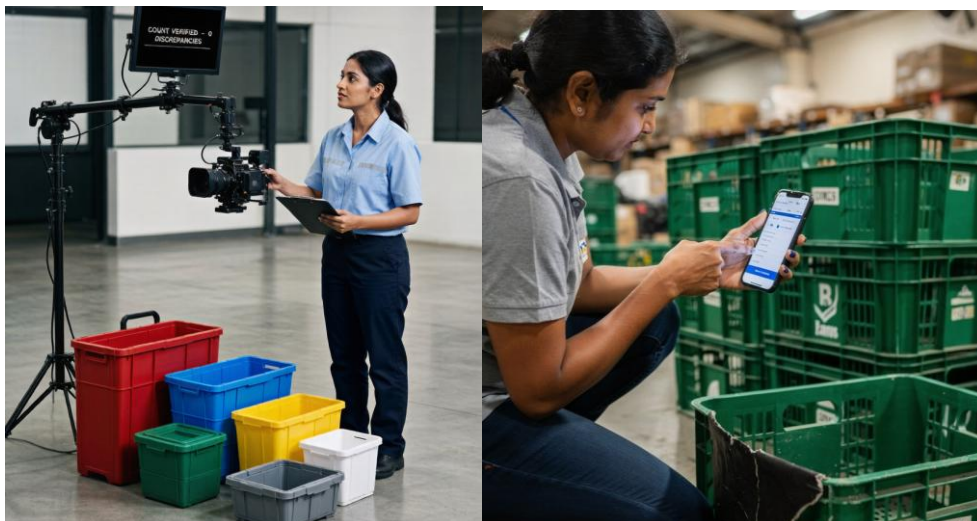
Mobile Computer at branch level

Option C: RFID + Barcode (Automation & Scalability)

Passive UHF RFID tag attached to each tote box

Automatically detected at dock doors or gates

Mobile phone at branch level



Process Flow

Central Warehouse (CW) → Retail Branch

Tote box ID is scanned at CW outbound area

System records:

Tote ID

Date & time

Destination branch

Tote status updated to “In Transit to Branch”

Retail Branch Received

Tote box scanned upon arrival

Status changes to “At Branch”

Branch is responsible for the tote until return

Retail Branch → Central Warehouse (CW)

Tote box scanned before dispatch from branch

System records return movement

Status changes to “In Transit to CW”

Return to Central Warehouse

Tote box scanned upon receipt

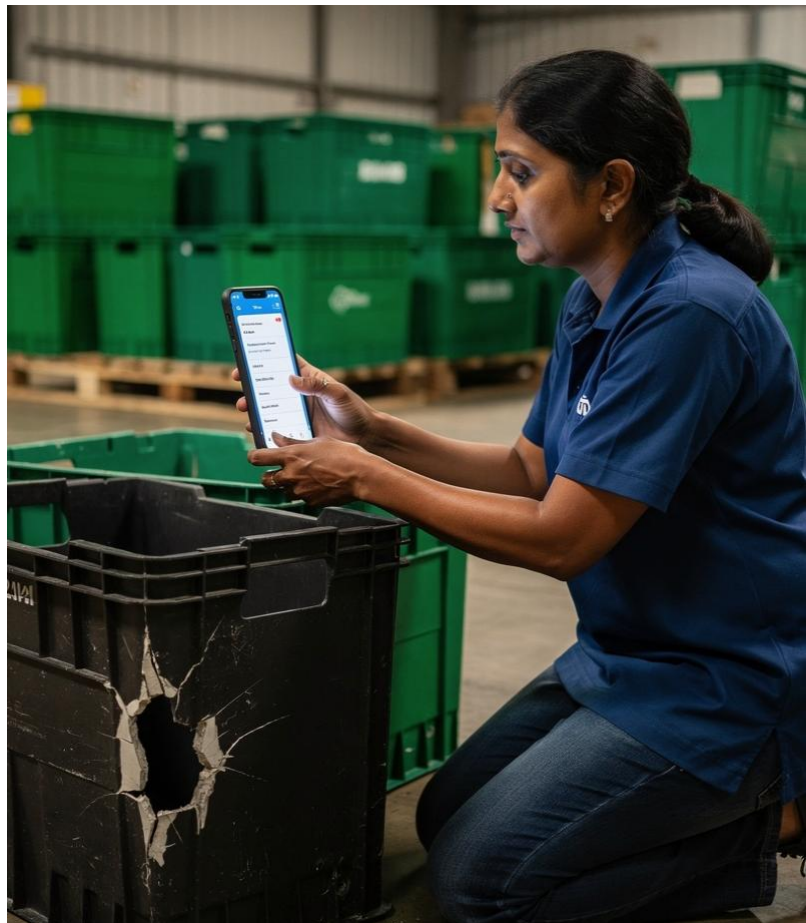
Status updated to “Available at CW”



Actionable Tracking Step

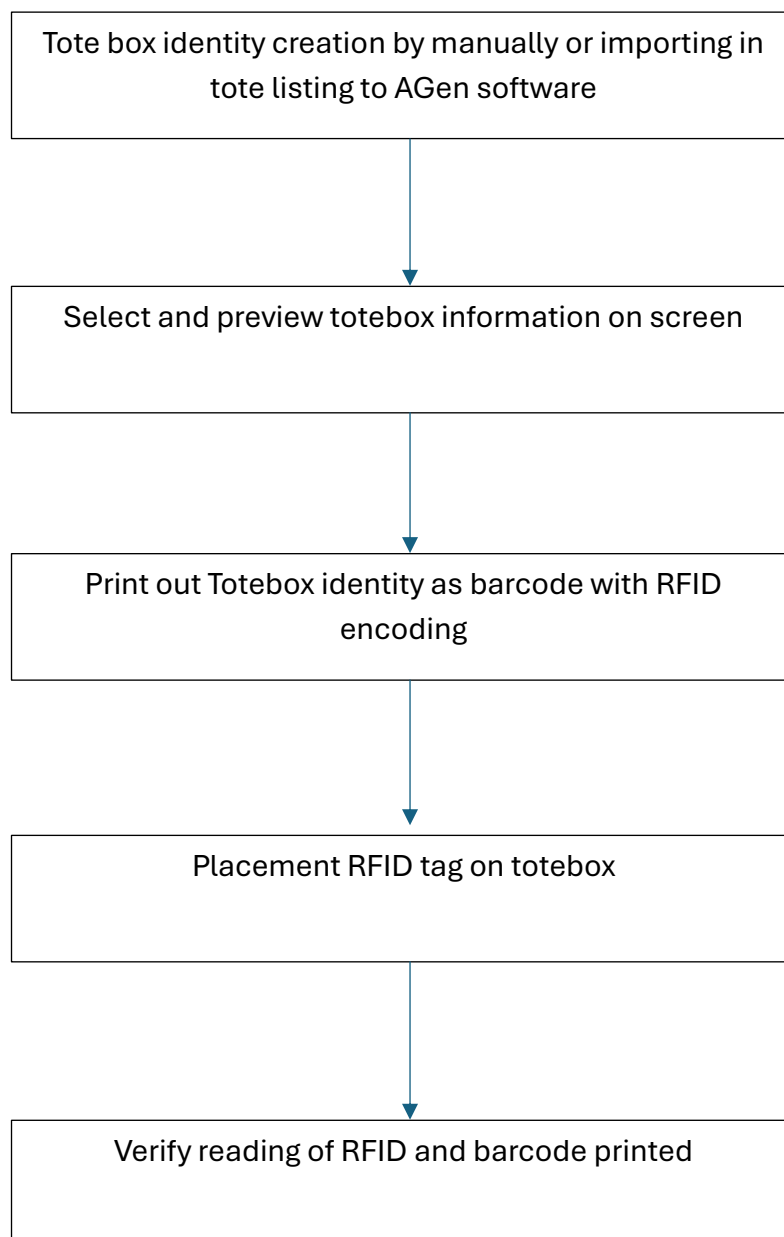
Re-usable tote boxes are essential in daily operations, but lack of visibility often leads to loss, delays, and inefficiencies. This proposal introduces an RFID-based Tote Tracking System to provide real-time tracking across key movement points, including warehouse and branch operations. Each tote is uniquely identified and tracked throughout its lifecycle, from issuance to return and disposal. The defined tracking steps ensure accurate recording of every movement, improving asset visibility, reducing losses, and enhancing operational efficiency. This solution enables better control, faster turnaround, and data-driven decision-making in tote management. The actionable tracking step includes

1. RFID Tag Assignment to Tote
2. Central Warehouse Receiving
3. Central Warehouse Outgoing
4. Branch Receiving
5. Branch Outgoing
6. Central Warehouse Receiving (Return)
7. Tote Box Disposal



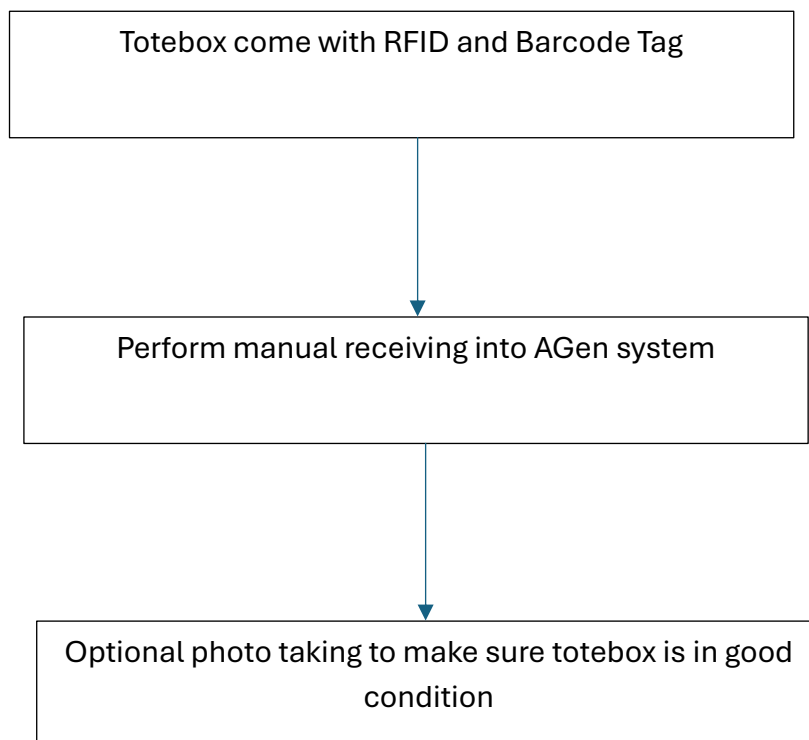
RFID Tag Assignment to Tote

RFID Tag Assignment to tote boxes is a critical step in enabling real-time visibility and efficient tracking within warehouse and manufacturing operations. By uniquely identifying each tote with an RFID tag, organizations can automate data capture, reduce manual errors, and enhance inventory accuracy. This approach supports faster processing, improved traceability, and better asset utilization. Implementing RFID tagging on tote boxes helps streamline workflows, optimize material handling, and provide actionable insights for operational efficiency and decision-making.



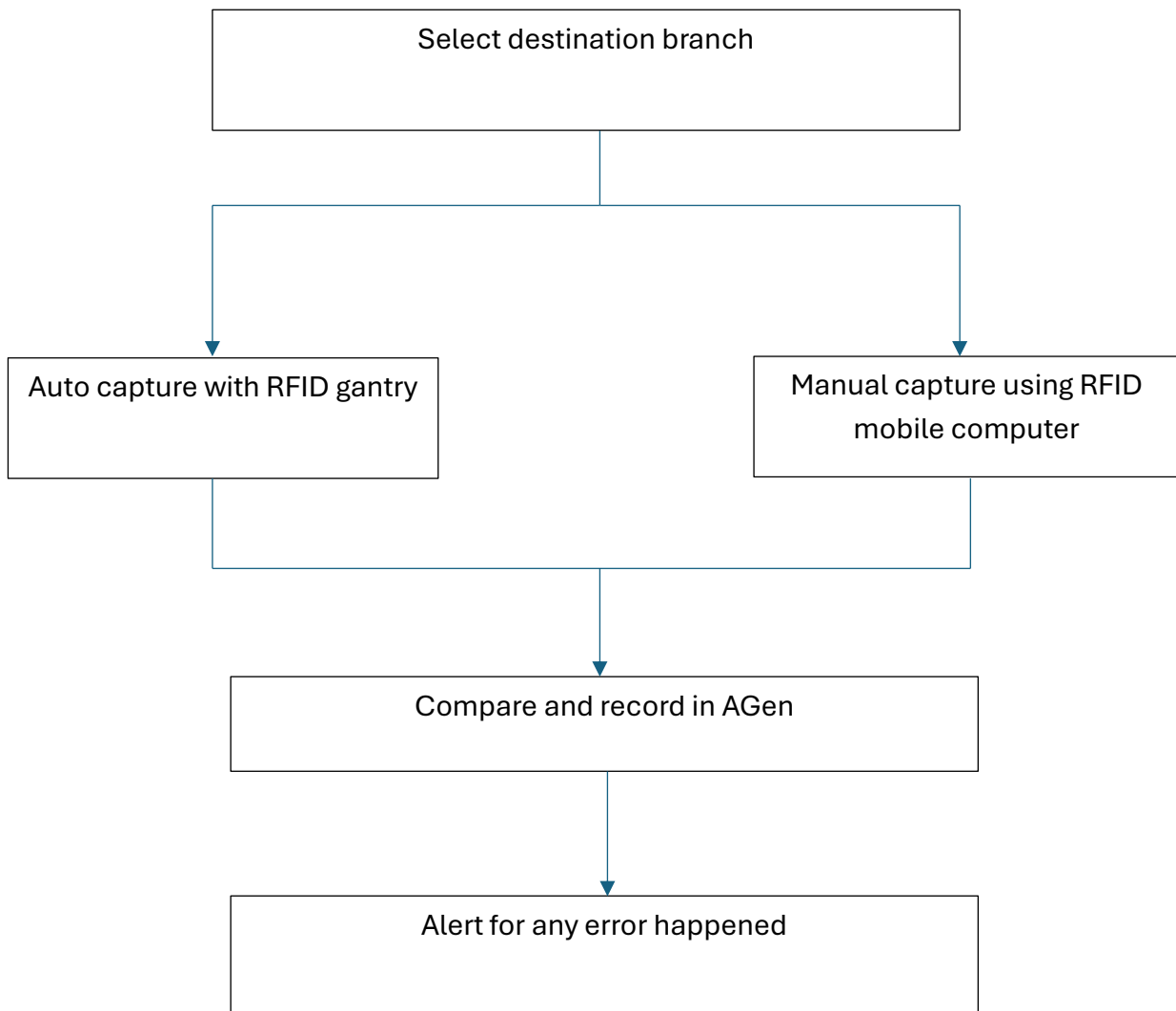
Central Warehouse Receiving

The Central Warehouse Receiving process for tote boxes ensures that all incoming containers are accurately checked, recorded, and stored for efficient operations. Upon arrival, each tote box is inspected for quantity and condition, verified against delivery documents, and logged into the inventory system. Proper labeling and designated storage placement help maintain traceability and accessibility. This standardized process minimizes errors, prevents loss or damage, and supports smooth material flow within the warehouse, ultimately contributing to operational efficiency and inventory accuracy.



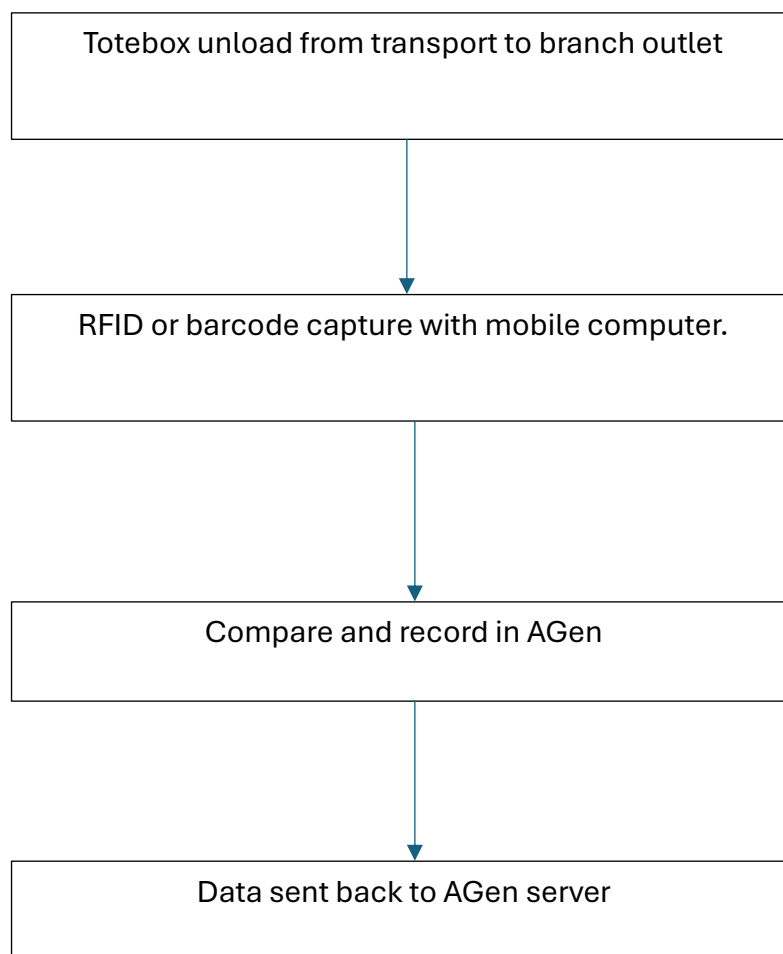
Central Warehouse Outgoing

The Central Warehouse Outgoing process for tote boxes ensures that all items are accurately picked, verified, and dispatched in a controlled and efficient manner. Each tote box is checked against order requirements, properly labeled, and recorded in the system before shipment. Careful handling and documentation help maintain inventory accuracy and traceability. This standardized process minimizes errors, prevents loss or damage, and supports timely delivery, ensuring smooth operations across the supply chain and meeting customer or production needs effectively.



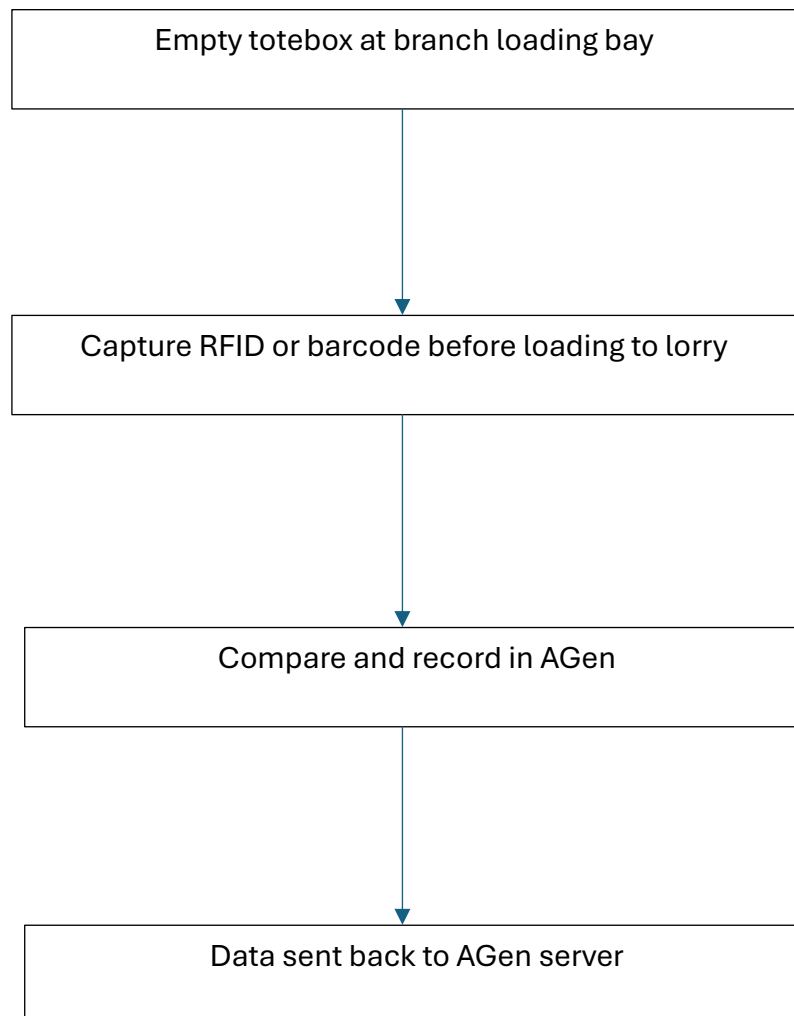
Branch Receiving

AGen Totebox Control Branch Receiving is a streamlined inventory process designed to ensure accurate tracking and accountability of tote boxes moving into branch locations. This system records each tote box upon arrival, verifies contents against shipment manifests, and updates central inventory in real time. By integrating barcode scanning and automated reconciliation, it reduces manual errors, prevents stock discrepancies, and improves traceability across the supply chain. The module supports faster receiving workflows, enhances visibility for both dispatch and receiving teams, and ensures every tote box is accounted for from warehouse to branch. Ultimately, it drives efficiency, transparency, and operational control.



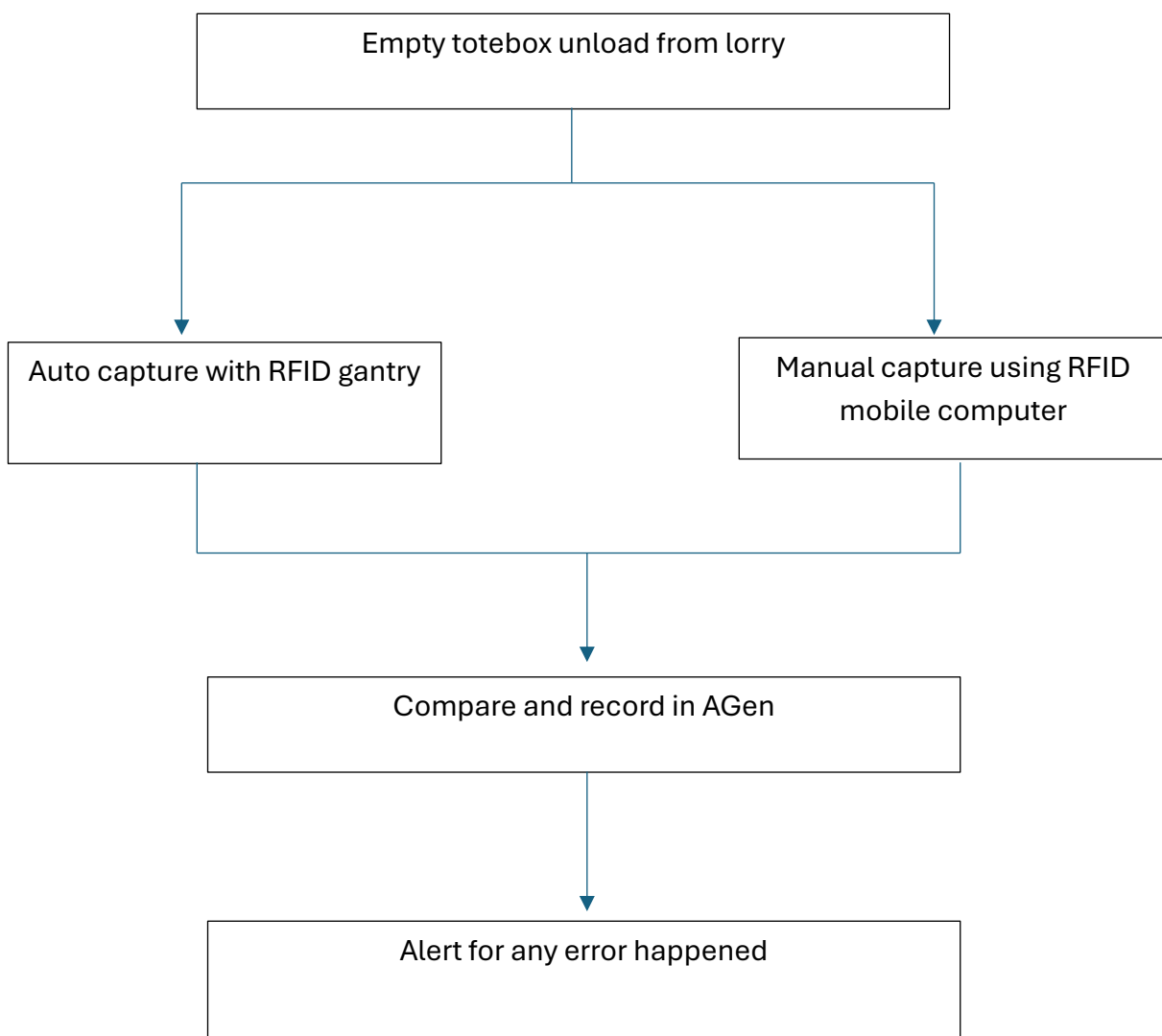
Branch Outgoing

AGen Totebox Control Branch Outgoing is a structured process for managing the dispatch of tote boxes from branch locations back to the central warehouse. The system captures each tote box before departure, validates contents against transfer orders, and logs real-time updates to central inventory. With barcode scanning and automated reconciliation, it minimizes dispatch errors, ensures complete load verification, and maintains full chain-of-custody visibility. This module accelerates outgoing workflows, reduces loss or misrouting, and provides dispatch teams with clear accountability. It delivers accuracy, traceability, and control, supporting seamless reverse logistics across the network.



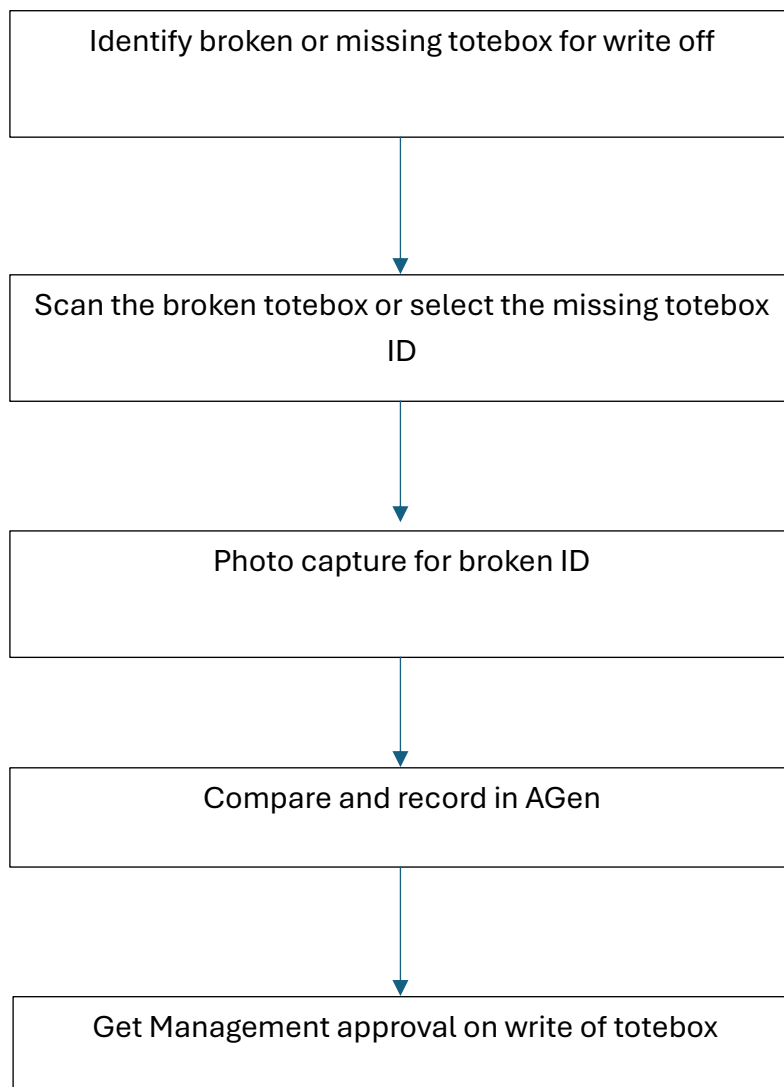
Central Warehouse Receiving (Return)

AGen Totebox Control Central Warehouse Receiving (Return) manages the inbound flow of tote boxes returned from branches to the central warehouse. The system scans each returning tote box upon arrival, verifying its condition and contents against dispatch records, and instantly updates inventory levels. Automated reconciliation flags missing, damaged, or unexpected items for quick resolution. By integrating barcode tracking and real-time data sync, it eliminates manual counting errors and ensures accurate asset recovery. This module streamlines return processing, improves tote box utilization, and maintains end-to-end traceability. It strengthens reverse logistics control, reduces losses, and supports efficient warehouse replenishment cycles.



Tote Box Disposal

AGen Totebox Control Tote Box Disposal governs the end-of-life management of damaged, obsolete, or non-compliant tote boxes within the supply chain. The system logs each tote flagged for disposal, records disposal reason, condition, and authorization, then removes it from active inventory in real time. Barcode scanning ensures full traceability, while audit trails support compliance and asset accountability. Automated reconciliation prevents disposed units from re-entering circulation, reducing risk and inventory discrepancies. This module streamlines disposal workflows, optimizes tote box lifecycle management, and maintains accurate asset counts. It ensures controlled, documented, and efficient removal of tote boxes from operations.



System Components

Hardware

Barcode scanner or RFID handheld reader

(Optional RFID) Fixed readers at dock doors

Labels or RFID tags for tote boxes

Software

Web-based Tote Tracking System

Dashboard view of tote status & locations

User roles (Warehouse, Branch, Admin)

Data Captured

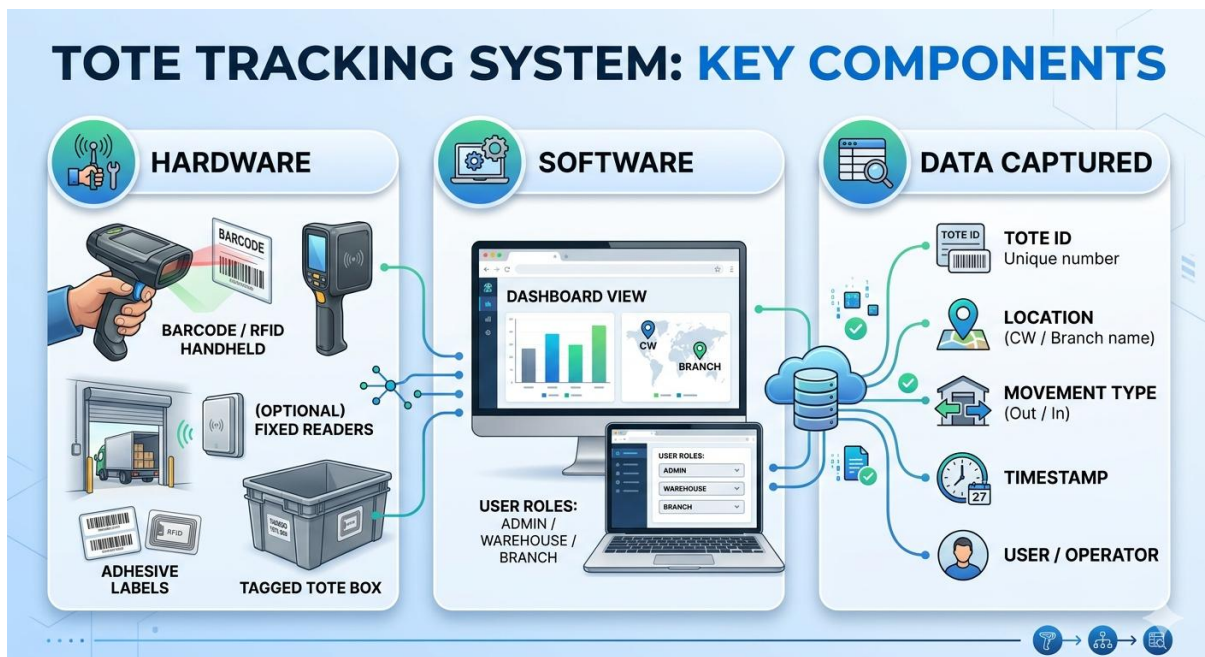
Tote ID

Location (CW / Branch name)

Movement type (Out / In)

Timestamp

User / operator



Reporting & Dashboard

The Reporting and Dashboard module of the Tote Box Tracking system is designed to provide users with a centralized, intuitive view of all tote box activities across the facility. Through interactive dashboards, users can quickly monitor key metrics such as tote box inventory levels, movement status, utilization rates, and location distribution in real time.

Advanced reporting features enable historical analysis and performance tracking, allowing stakeholders to identify trends, detect anomalies, and uncover inefficiencies in tote box circulation. Reports can be customized based on time, location, or operational criteria, helping teams perform root cause analysis for issues such as misplaced totes, delays in return cycles, or bottlenecks in production workflows.

Example Report

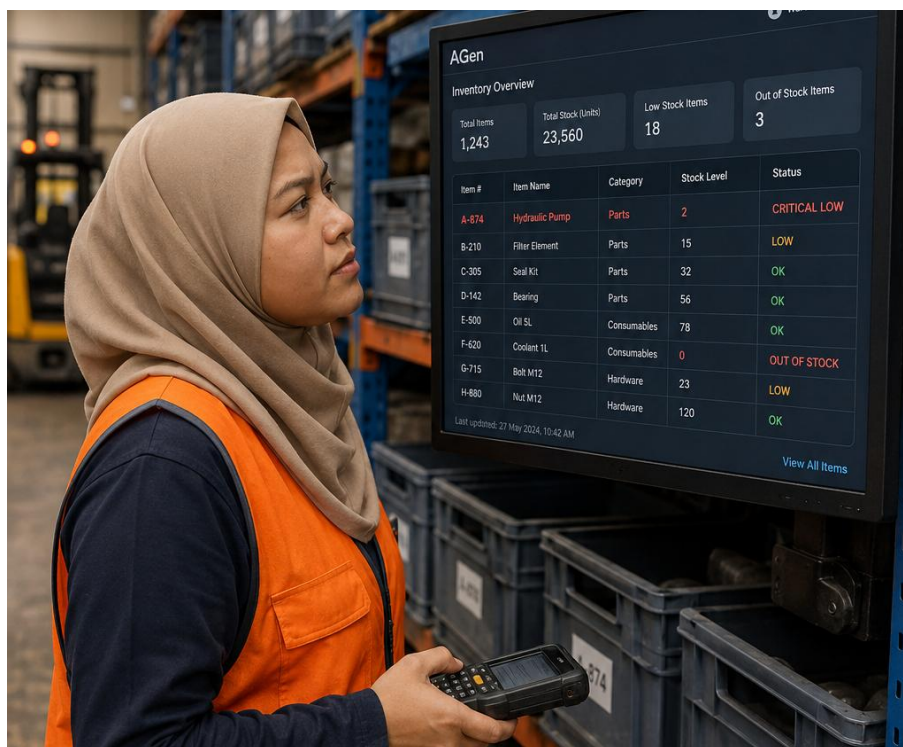
Total totes in circulation

Totes at each branch

Totes overdue for return

Tote loss / shrinkage trends

Turnaround time per tote



Key Benefits

Operational

- Eliminate manual tracking
- Faster receiving and dispatch
- Reduced tote shortages

Financial

- Lower tote replacement costs
- Optimized tote inventory
- Reduced emergency purchases

Management

- Accountability by branch
- Data-driven decisions
- Audit-ready movement history

KEY BENEFITS
AUTOMATED TOTE TRACKING SYSTEM

OPERATIONAL

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FINANCIAL

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MANAGEMENT

- Accountability by branch
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Implementation Approach

Phase 1 – Study & Design

Process review

Tote quantity and flow analysis

Technology selection (Barcode vs RFID)

Phase 2 – Pilot

Tag selected tote boxes

Test at CW + 1–2 branches

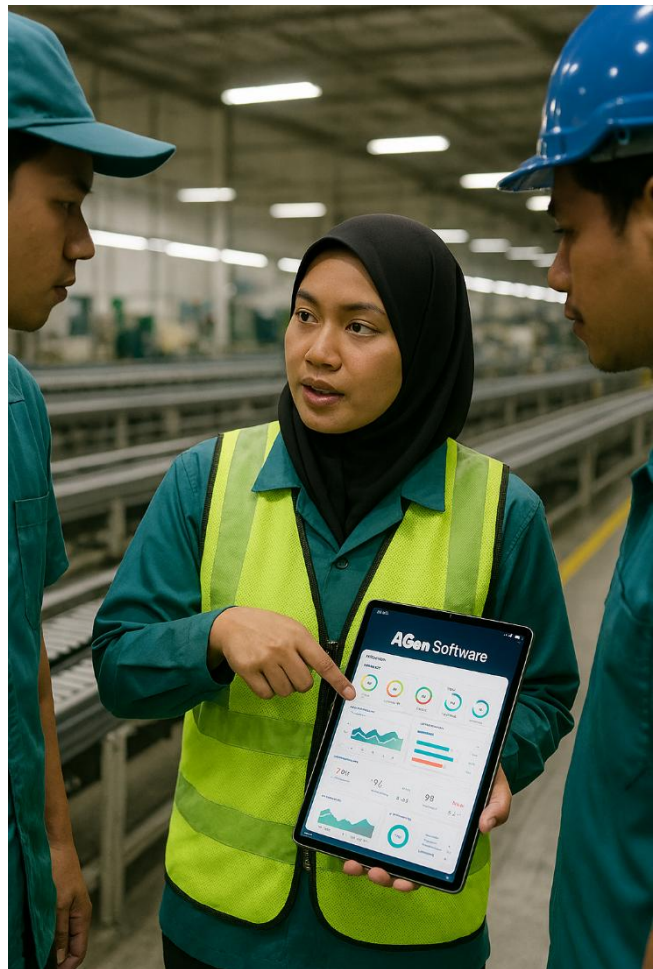
Fine-tune workflow

Phase 3 – Full Rollout

Tag all tote boxes

Deployment to all branches

User training & SOP rollout



Tote Box Tracking Solution

Report

This proposal introduces a Tote Box Tracking solution designed to improve visibility, traceability, and control of tote box movements throughout the operational workflow. By implementing a systematic tracking mechanism, the organization can reduce tote losses, improve asset utilization, enhance inventory accuracy, and support more efficient operational decision-making. The proposed solution aims to establish a more transparent and data-driven process while minimizing waste and improving overall productivity.

Tote loss rate (%)

Tote turnaround time

Number of missing totes per branch

Tote utilization rate

Reduction in replacement cost

