RMSOMEGA

RFID PROS

RFID Technology

Solutions Overview

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About RMS Omega

A strategic approach to technology implementation.

- A consultative approach focused on your business processes and pain points.
- Design, deployment, management, and support of data capture technology solutions crafted for each client's needs.
- RFID location tracking solutions for mobile asset tracking, inventory management, and work-in-process monitoring.
- Enterprise-level customers across a variety of industries and verticals nationwide.
- Projects backed by a team of knowledgeable solutions engineers, project managers, and technical support.

Company Background

Founded
1997

Locations
20+

Clients
20K+

Industry Partners
200+

Support Members
100+

Units Deployed
500K+

Premier RFID Systems Integration

RMS Omega's RFID Pros specialize in designing, deploying, and managing RFID systems for automated data capture throughout supply chain, manufacturing, and healthcare.

Our mission is to provide an unbiased technology solution that combines the right labels, hardware, software, and services to solve your key business challenges.

Tags & Hardware

LF, HF & UHF tags, scanners, printers, and antennas from industry-leading RFID manufacturers.

Software & Middleware

Cloud and server software options with the right features, reporting tools, and price-point for your application.

Technical Services

Discovery and design, rigorous testing, and managed IT services to ensure successful implementation and ROI.

End-to-End Solutions

Proven integrated solutions for inventory management, asset tracking, work in process monitoring, and more - backed by a team of project managers and systems engineers.

RFID Overview

Capture large amounts of data in seconds.

RFID (radio frequency identification) is an automatic data capture technology where data encoded in an RFID tag is captured by readers via radio waves.

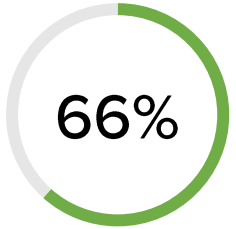
- Types of RFID
  - Passive: No power source, tag is activated when in range of a reader, can be smaller in size, different frequencies, lower cost.
    - UHF (ultra-high frequency): Used for longer read range (dozens of feet), used in most asset tracking and inventory applications, moderate sensitivity to environmental disruptors.
    - HF (high frequency): Used in intermediate read ranges (a couple of feet) for inventory scanning, moderate sensitivity to environmental disruptors.
    - LF (low frequency): Used in close read ranges like access control, less sensitive to interference.
  - Active: Tags require a battery, longer read range and real-time data capture, larger data storage, higher accuracy, higher cost.
    - UWB (ultra-wideband): Highly precise location tracking and high data transmission over short distances.
    - BLE (Bluetooth low energy): Less precise location tracking and low power consumption over farther distances.
- Factors to Consider Before Implementing RFID
  - Water, metals, and items with high carbon content can affect RFID tag performance.
  - RFID may not be feasible based on what you are tracking, the volume of items you want to tag, or your environment.
  - **Working with an RFID expert is key** to integrating a solution that will work as intended and be deployed correctly so that it will solve your business challenges.

Forces Driving RFID Adoption

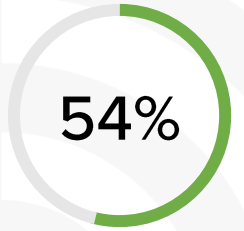
- Labor Changes
  - Labor Shortage
  - Increasing Costs
- Omni Channel
  - Increased Source Tagging, Retailer Mandates
- Supply Chain Visibility
  - Digitization
- Regulatory
  - Improved Food Safety & Modernization Act
  - Drug Supply Chain Security Act
  - Retail Mandates
- Technology Capabilities
  - Read accuracy doubled over the last 10 years*
  - Range increased 5X over the last 10 years*
- Reduced Cost
  - Reader cost reduced by half over last 10 years*
  - Tag cost reduced by 80% over last 10 years*

** BizTech Magazine SEP2021*

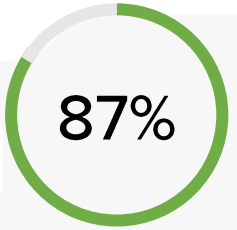
What Supply Chain Decision Makers Are Planning Over The Next 3 Years...



Plan to use automation to offset labor challenges.



Plan to invest in increased supply chain visibility.

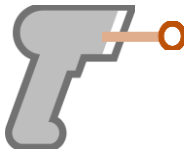
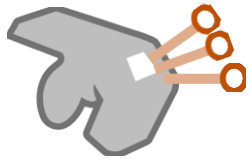


Plan to accelerate technology modernization projects.

** Zebra Warehouse Vision Study 2027*

AIDC Technologies

Barcode vs. RFID – Key Differences

BARCODE	RFID
One to One Scan one item at a time 	 **One to Many** Scan a large numbers of tags simultaneously
Line-of-Sight Scan items within view 	 **Non-Line-of-Sight** Scan items inside a box or hidden from view
Read Only Once printed, can't change, no opportunity to update 	 **Read & Write** Easily update printed tags with new information
Easy to Copy Simple to photograph, print and rescan 	 **Difficult to Copy** RFID chip contains unique identifying number

Industry Segments & Applications

Our team integrates best-in-class RFID & RTLS solutions for Fortune 500 companies to small and medium businesses across all industries.

Warehouse/ DC

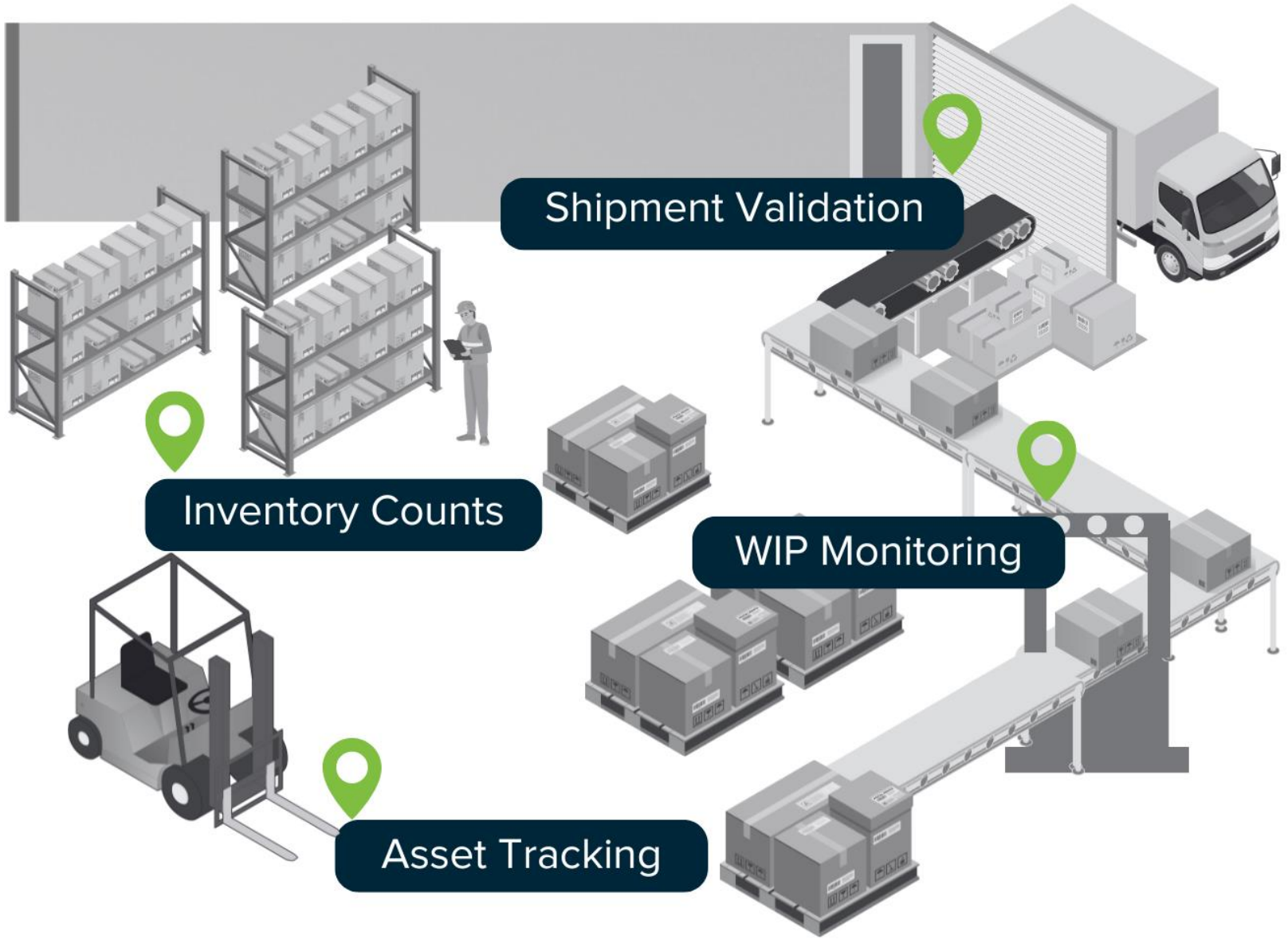
- Inventory Control/Asset Tracking
- Cycle Counts
- Receiving/ Shipping Validation
- Loss Prevention
- Tote/Returnable container tracking

Manufacturing

- Inventory Control/Asset Tracking
- Receiving/ Shipping Validation
- Work In Process Monitoring

Healthcare

- Inventory Control/Asset Tracking
- Cycle Counts
- Receiving/ Shipping Validation
- Loss Prevention
- Tote/Returnable container tracking



Common RFID/RTLS Deployments

With decades of expertise, RMS Omega helps businesses overcome integration challenges and optimize systems that drive ROI and operational success.

- Asset Tracking
  - Track and locate critical assets either in real-time or with last known item locations.
- Inventory Management
  - Quickly conduct scheduled counts and audits or maintain automated perpetual inventory records.
- Shipment Validation
  - Validate and record shipment movements at dock doors and other checkpoints.
- Work In Process (WIP) Monitoring
  - Enforce compliant production processes and mitigate errors/delays.

RFID System Components

Tags & Labels

RFID labels wirelessly transmit unique, identifiable information about tagged items.

Readers

Mobile and fixed readers emit radio signals to activate, decode, and receive tag data.

Antennas

Antennas provide a communication channel between tags and fixed readers.

Printers

Printers digitally encode your desired data into RFID labels for accurate serialized printing.

Portals/Checkpoints

RFID Portals incorporate fixed reading into high volume tag reading workflows.

Software/Middleware

RFID software and middleware provides a place to view, analyze, and map data.

Types of RFID Systems

We design RFID solutions around your workflows and the challenges you are trying to address.

Mobile

- Mobile readers collect data.
- Manual intervention required.
- Relatively plug-and-play.
- Best for inventory audits & mobile seek-and-find applications.

Hybrid

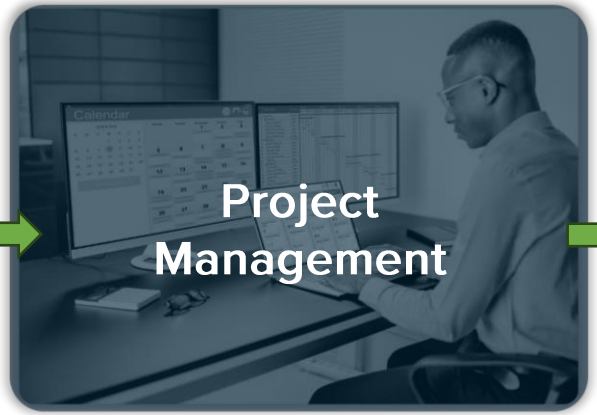
- Fixed & Mobile data capture.
- Some manual intervention required.
- Some testing required.
- Best for multiple challenges that require manual and automated data capture.

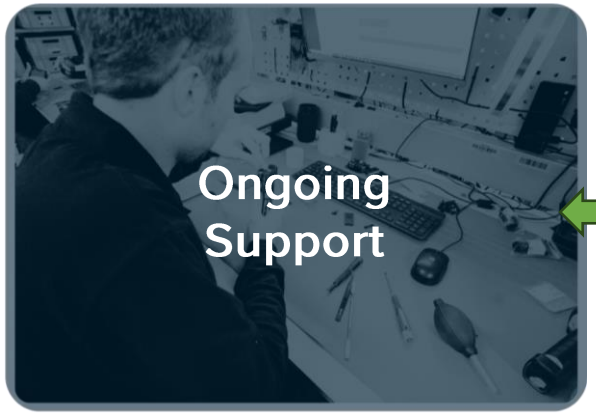
Fixed

- Fixed readers/portals collect data.
- Fully automated.
- Onsite services usually needed.
- Best for high-volume automated data capture and tracking of inventory control & work in process.

Our Process

Your RFID implementation is backed by a team of Systems Engineers, Project Managers, and your Account Manager from start to finish.





What We Deliver To Clients

RMS Omega's dedicated RFID Pros team brings 25+ years of technology integration expertise and premier-level partnerships with leading RFID & RTLS partners to provide unbiased, complete solutions that solve our client's biggest business challenges.

"The RMS team's technical expertise was invaluable in helping us meet our client's needs."
- Jeff Hiatt, Sr. Manager, Solutions Engineering, GXO

Case Study #1: GXO/Intel

Background

GXO, a global third-party logistics provider (3PL) needed to fulfill fast, reliable 2-hour delivery windows according to their service level agreement (SLA) with their partner Intel, who required timely orders to maintain production schedules.

Challenges

Labor-intensive product tracking processes and tight deadlines were leading to shipping errors. The added challenge of the 2-hour SLA made it almost impossible to properly document all the items going out for delivery.

Solution

- Product-Level RFID Tagging: RFID labels on each product provided reliable location data for accurate and timely picking.
- Dock Door Readers: Dock door checkpoints automatically recorded outbound items and confirmed shipments.
- Van Route Updates: RFID enabled real-time tracking of delivery van routes to make sure products would arrive on time.
- Destination Dock Portals: Once again, dock door readers would confirm the shipment's arrival and validate inbound parts.

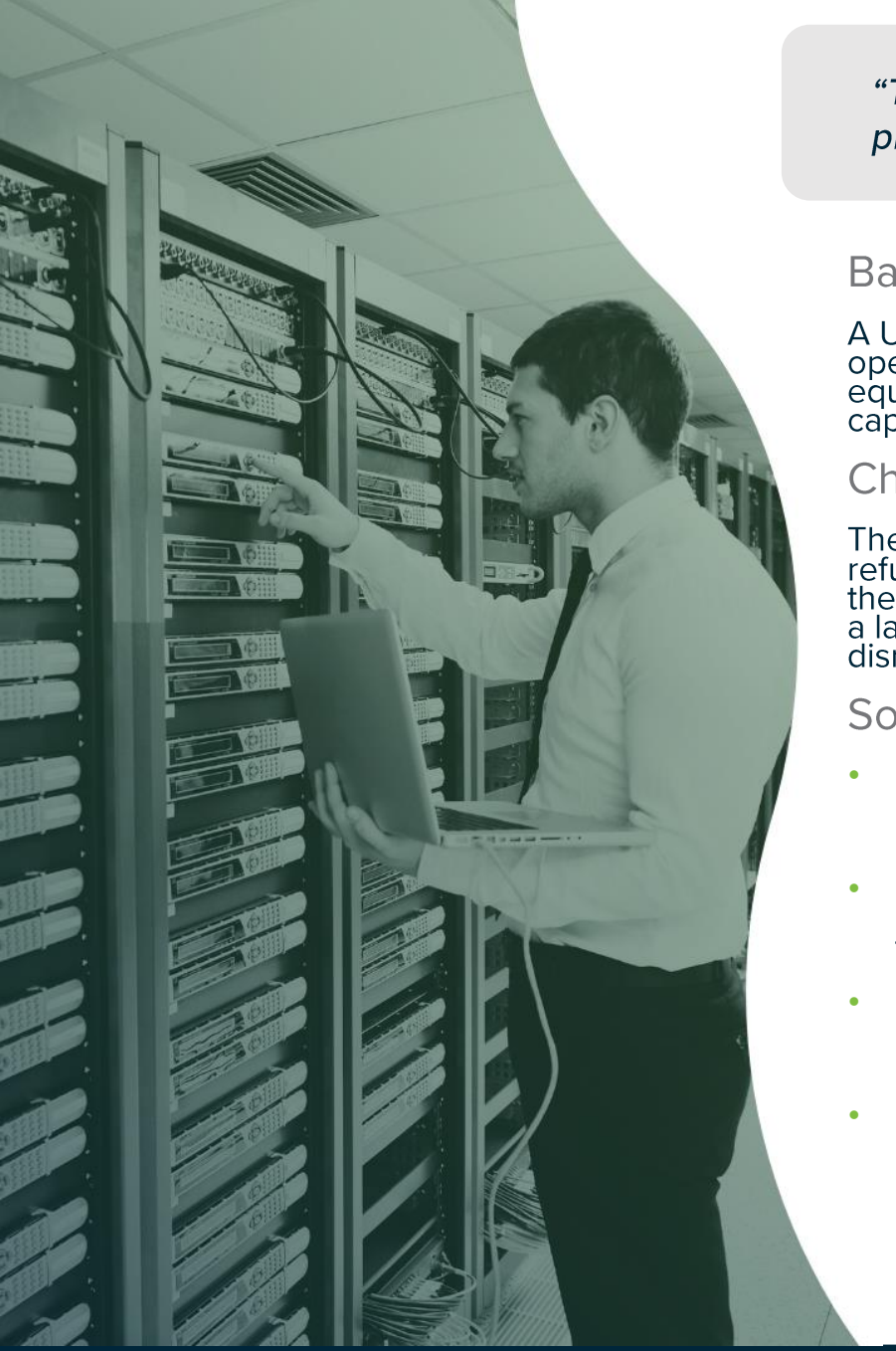
Solution Results

Improved visibility and confirmation over product delivery.

Up-to-date product locations for fast and reliable order picking.

Met 2-hour SLA requirements and bolstered partnership with Intel.

GXO intel



“They designed a solution that improved our refurb process without changing our current system.”

Case Study #2: Equipment Service Provider

Background

A U.S.-based equipment service provider sought to improve its operational efficiency and work-in-progress visibility. Already servicing equipment with embedded tags, they wanted to fully leverage the capabilities of RFID.

Challenges

The service provider was encountering inefficiencies in their refurbishment process. Equipment would occasionally skip a step in the refurb line, which went unnoticed until the equipment was read at a later stage. This oversight led to costly rework, delays, and disrupted workflows, all of which impacted productivity and output.

Solution

- Fixed Readers: Fixed RFID readers tracked tagged parts through each refurbishment stage, providing real-time visibility into their process.
- RFID Checkpoints: If equipment was read at a later stage and skipped an earlier step, the system would flag the part and send the unit back.
- Quality Assurance Measures: The RFID system ensured that no equipment could bypass essential refurb stages, preventing errors and upholding product quality.
- Seamless Integration: The RFID technology integrated and fed data into the service providers existing home-grown software.

Solution Results

Automated flagging of parts that did not comply with the refurb process.

Operational efficiency from reduced rework and need for manual inspections.

Successful integration into client’s home-grown production system.

“RMS brought a whole system together...helping us close the loop between manufacturing and U.S. distribution.”
- Chris Lee, Project Manager, KISS Products

Case Study #3: KISS Products

Background

KISS Products, a leading cosmetic distributor, specializing in a wide range of beauty and skincare products, faced RFID tag mandates from retail partners as well as visibility challenges when it came to managing their extensive warehouse inventory. The company sought a solution to enhance its warehouse operations while meeting new mandates from retail partners.

Challenges

The distributor's warehouse management was becoming increasingly complex due to the high volume of products, frequent shipments, and compliance demands. Manual tracking and barcode scanning processes were prone to errors, leading to inaccuracies in inventory, delayed shipments, and inefficient warehouse operations.

Solution

- RFID Labels: GS1-compliant product tags met retailer demands and formed the base of the solution.
- Dock Door Portals: Upon arrival, integrated dock door portals validated the cartons of tagged products and updated inventory.
- Fixed Antennas and Readers: Fixed RFID hardware on warehouse racking updated product locations automatically – enabling faster order picking.
- RFID Software: Software with mapping functionality provided a visual of where product was on the warehouse floor and updated inventory numbers as products were shipped in and out.

Solution Results

Accurate inventory data with automated inbound and outbound updates.

Timely, compliant, error-free shipments improved customer satisfaction with retail partners.

Cost savings gained through labor efficiency and lower return rates.

KISS®

“We have a level of visibility over production that was not there before. We appreciate that they built something around our process.” – Jayce Popowski, Senior Developer, Elkay

Case Study #4: Elkay Manufacturing

Background

Elkay, a manufacturer of commercial sinks, faucets, and drinking fountains, wanted to improve visibility over production processes. Their manufacturing facility struggled to consistently locate molds used in production and did not have a good way to monitor their lifecycle.

Challenges

The inability to locate molds would delay production and effect their total output. Furthermore, they needed insight into when certain molds should be retired from production. Their particular molds were rated for a limited number of production cycles. Elkay needed to have historical data to dictate when to replace molds and produce new ones. Using molds past their expiration would compromise their product’s quality.

Solution

- Passive RFID Labels: Special adhesive RFID tags rated for their production environment were applied to each mold – allowing data collection and tracking.
- Handheld Readers: Handheld RFID readers were used for mobile seek-and-find of misplaced molds – cutting down delays and bottlenecks.
- Fixed RFID Readers: Fixed RFID readers were installed at each production cell to monitor the lifecycle of each mold and notify when they should be retired.

Solution Results

Reduced operations bottleneck and downtime from missing molds.

Better insight into the lifecycle of production molds.

Enforced quality control during product manufacturing.

ELKAY

"It was faster to look up items in QuickBooks by date and food type than to use our old system. We now have better record history of our product." – Mr. Houser, Houser Produce

Case Study #5: Houser Produce

Background

Houser's Produce Farm, a well-regarded supplier of fruits and vegetables to regional supermarkets, needed to comply with new industry mandates passed by the FDA. Houser was required to maintain traceable record of food lots and shipments.

Challenges

An outdated barcode system provided some basic information but was inefficient at keeping proper records for each individual box of produce as well as their ship and sale date. It was ultimately quicker to look up food type and dates in QuickBooks than it was to use the barcode system. Houser needed a solution that would be up to par with new industry regulations and make record keeping easier.

Solution

- GS1 RFID Labels: Industry-compliant RFID food labels would meet compliance and provide proper tracking of lots numbers, product IDs, and serial numbers sent in shipments.
- Handheld Readers: Mobile RFID readers made it easy to collect tag data and feed it into the software for accurate record keeping.
- RFID Software: Mobile, cloud-based software would generate GS1 tags for product traceability with parent/ child tags to properly track shipments from the same lot.

Solution Results

Improved traceability for food safety mandates.

Faster lookup of product and shipping history in the event of a recall.

Parent/child tag relations for managing individuals or groups of product.

Houser's Produce

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