

A Guide to RFID RTLS for Warehousing and Manufacturing

An Overview of the Technology, Applications, and Benefits



Real-Time Location Systems: A Timely Solution for Today's Supply Chain Demands

One of the biggest challenges for many industries is getting real-time visibility into supply chain inventory and operations. After all, you can't find, track, and manage what you can't see.

Being able to see into your supply chain across operations and processes requires a level of visibility and real-time data capture efficiency that can't be achieved with barcoding alone.

Barcodes allow you to scan items when they're at rest or when they move through your processes, but only when there's line-of-sight access to the barcodes and assets you need to track.

To achieve real-time inventory visibility with maximum efficiency, you need a way to identify, locate, and track assets remotely and automatically, without line-of-sight or manual scanning.

Understanding RTLS and How It Works

A real-time locationing system (RTLS) is a technology that uses radio frequency identification (RFID) to tag, track, and locate items wirelessly and automatically, even when they're moving.

You can identify, track, and locate virtually anything in real time, and you can do it all automatically and wirelessly, without scanning barcodes or having physical line-of-sight access to barcode labels.

Unlike most RFID systems, the big difference with an RTLS is how RFID tags are read. Most RFID systems rely on workers using handheld RFID readers to read tags within the reader's range. But an RTLS uses a fixed RFID reader that identifies and locates tags automatically across a large coverage area.



For example, Zebra's ATR7000 RTLS reader and Barcom's Transaction™ software automatically collect tag data, calculate real-time asset locations, and stream this data to your business systems. Simply place the reader in a fixed location, and it uses hundreds of wireless "beams" to automatically read tags in a large coverage area, providing highly accurate asset locations to within two feet (0.6 meters) or less. It has up to double the range and coverage area of a typical fixed RFID reader as well.

An RTLS can locate, track, and update the status of hundreds or even thousands of assets in real time, using wide-range antennas and hundreds or thousands of wireless beams simultaneously, delivering the resulting insights with pinpoint accuracy and cost-saving automation.

8 Ways RTLS Improves Warehouse and Plant Operations

Given its impressive capabilities, RTLS is a revolutionary way to track any asset in your warehouse or plant, and you can use the resulting real-time location data to improve operational visibility and an array of processes.

Here are some examples of how our customers use RTLS technology in their businesses.

1 Inventory Management

The most common application for an RTLS is inventory management. This is where the ability to accurately locate, identify, and quantify assets helps eliminate the endless hours of time and labor that have traditionally been required to manage inventory. It also eliminates the need to search for inventory, and it's an ideal way to eliminate human error by completely automating the data capture and tracking process.

With RTLS, instead of relying on manual, paper-based processes or relying strictly on barcode scanning, companies can improve productivity and reduce labor costs while achieving ROI and subsequent profitability in as little as six months.

2 Locating and Traceability

An RTLS can automatically locate and trace inventory and materials from receiving and putaway to picking, packing, and shipping. Gain greater operating efficiency and achieve true end-to-end visibility for compliance, supply chain traceability, and improved inventory management.

Process cycle times can be reduced by eliminating manual searches for lost or misplaced inventory and assets, and by having a real-time view into the physical location and status of all required parts, components, equipment, and supplies.

3 Tracking Items on the Move

With RTLS you can also locate and track inventory as it moves through business-critical processes. For example, you can use an RTLS to know when items have moved into a staging area for the next step in a warehouse process.

4 Work-in-Process Tracking

For warehouses in a manufacturing operation, an RTLS can be used to track work-in-process and related inventory to automate and error-proof production processes.

5 Workflow Optimization

Deliver item and location data with accompanying worker instructions to direct processes and optimize workflows for maximum efficiency. RTLS tracking can also help increase order accuracy, which results in less rework, and with the automated capture and streaming of data, it can help streamline warehouse and production processes, allowing orders to be completed and fulfilled in less time.

6 Automated Alerts

You can use an RTLS to trigger automated alerts and ensure goods make it to the right place at the right time, error-free. An alert can notify users when a process is completed correctly or if an exception or error occurs.

RTLS allows just-in-time MRO decisions to be made with better visibility and can be configured to alert management and workers immediately and automatically when replenishments, quality inspections, transportation, or inventory movement is needed.

7 Shipment Validation

You can also use RTLS to validate shipments against electronic manifests for greater accuracy. For example, an RTLS can verify that the correct items have made it onto a truck for eventual shipment and delivery.

8 Chain-of-Custody Tracking

Since an RTLS can track and locate items as they move through processes, you can use it to create an auditable chain of custody. You can even combine it with RFID chips embedded in worker ID cards to track who handled an item and where it moved through each stage of a process before it was shipped.

Barcom's Transaction™ Software

Transaction is an all-in-one tool to automate barcode and RFID data collection, whether you are using handheld RFID readers or fixed RFID readers as part of a complete RTLS solution.

Transaction is a fully customizable software suite that contains everything you need to manage inventory, assets, and processes with real-time location data. It also integrates with your ERP, WMS, or other business systems to share this data and help you manage inventory, transactions, and processes with access to trends, reports, real-time metrics, and much more.



Optimize Inventory Processes and Warehouse Management

- Receipts
- Moves
- Issues
- Adjustments
- Physical Inventory
- Cycle Counts



Track Assets at the Detail Level

- Location
- Quantity
- Age
- Assigned User
- Service History
- Maintenance Due



Streamline Shop-Floor Control

Transaction delivers real-time location, inventory, and transactional data to help you control and manage operations as well as worker and process productivity at the shop-floor level.



Easily Manage Production Reporting

Transaction reports include comprehensive dashboards and reports to help you maintain awareness and drive overall operational efficiency with real-time data, allowing you to easily manage costs, productivity, and quality alerts.



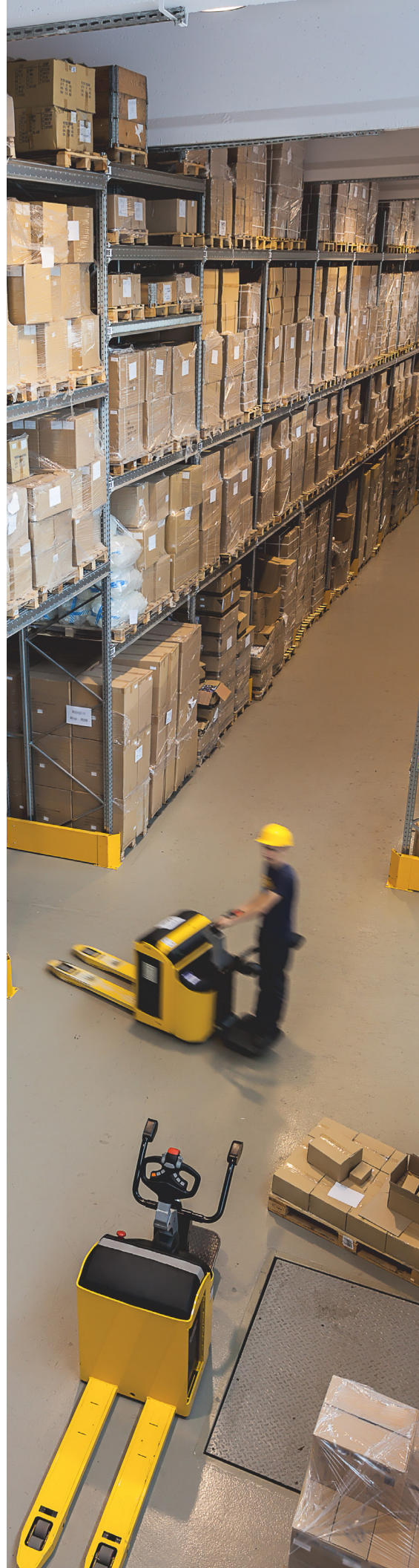
Reduce Instances of Non-Compliance

You can use Transaction to create identification labels to meet compliance requirements and improve overall process efficiency and accuracy.



Effectively Manage Labor, Time, and Attendance

You can monitor time and attendance for your workers, automate pay and work rules to eliminate manual tracking of time cards, and create data entry and approval processes to better control costs, improve productivity, and minimize risk.





Explore RFID RTLS Solutions for Your Business

Schedule a discovery call today to learn more and see if RFID RTLS is the right technology for your business.

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