



# Real-time Visibility

*RFID-enabled  
Applications for  
Asset Tracking*

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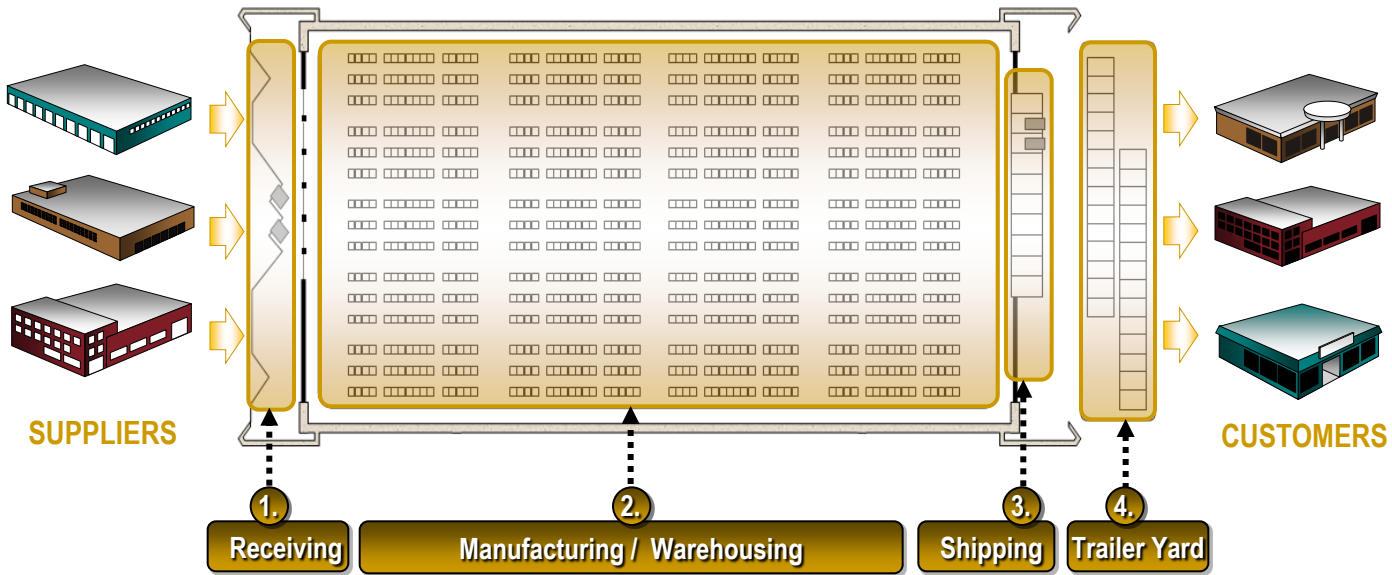
Deployment Guide



Delivering Real-Time Visibility  
to the Enterprise

# Tracking Assets Across the Value Chain

By adding real-time visibility to business systems, RFID and Auto-ID technology deliver process efficiency and cost savings. Optimizing asset utilization and indirect materials management across multiple nodes in the value chain decreases inventory and handling costs while increasing product availability.

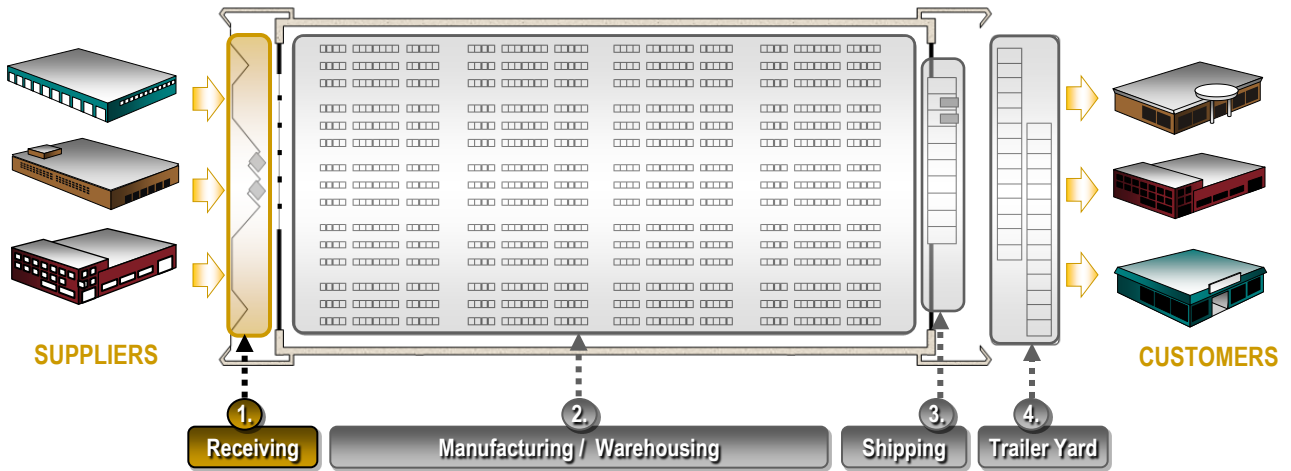


Automating and error-proofing even a single business process can deliver a significant return on investment. Process-specific projects often pay for themselves within 9-12 months, and are targeted in one or more of the following areas:

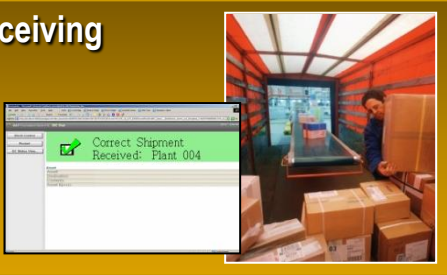
- Receiving
- Reusable Container Tracking
- Component / Subassembly Tracking
- Tool Tracking
- Jig/Mould Tracking
- Whole Goods Tracking
- Shipping
- Yard Management

The use cases on the following pages illustrate specific areas where asset tracking can be automated in multiple points in the value chain.

# 1. RFID Applications in Receiving



## Receiving



### Auto-ID Application

- Automate receipt & verification of incoming goods from suppliers

### Web Services Integration Options for ERP, WMS and Asset Management Systems

- Compare received goods with content manifest or ASN
- Flag priority items by comparing order number and special instructions
- Expedite the receipt assets which need to be deployed immediately
- Quarantine and track non-scheduled shipments

### Auto-ID Value Add

- Automated tracking and reliable identification of shipments as they are received
- Significantly reduced error rates and costly correction processes
- Staff focused on exceptions rather than administrative paperwork
- Minimized need for safety stock and expedite costs to cover lost shipments

## Container Tracking



### Auto-ID Application

- Track reusable containers, dunnage and contents from location to location

### Web Services Integration Options for ERP, WMS, Asset Management Systems

- Automatic confirmation of Advanced Shipping Notices, Order Numbers, Cost Centers
- Track container pedigree/dunnage as contents are added and removed
- Alert staff when container needs to be placed back into service or is received at wrong location

### Auto-ID Value Add

- Optimize movement and usage to improve operating efficiency, asset utilization
- Reduce size of container fleet

OAT worked with a leading Aerospace Manufacturer to real-time enable their inbound logistics processes with RFID.

The result: a 75% reduction in handling time and more effective labor allocation, by focusing on exception handling vs. day to day operations.

# 1.

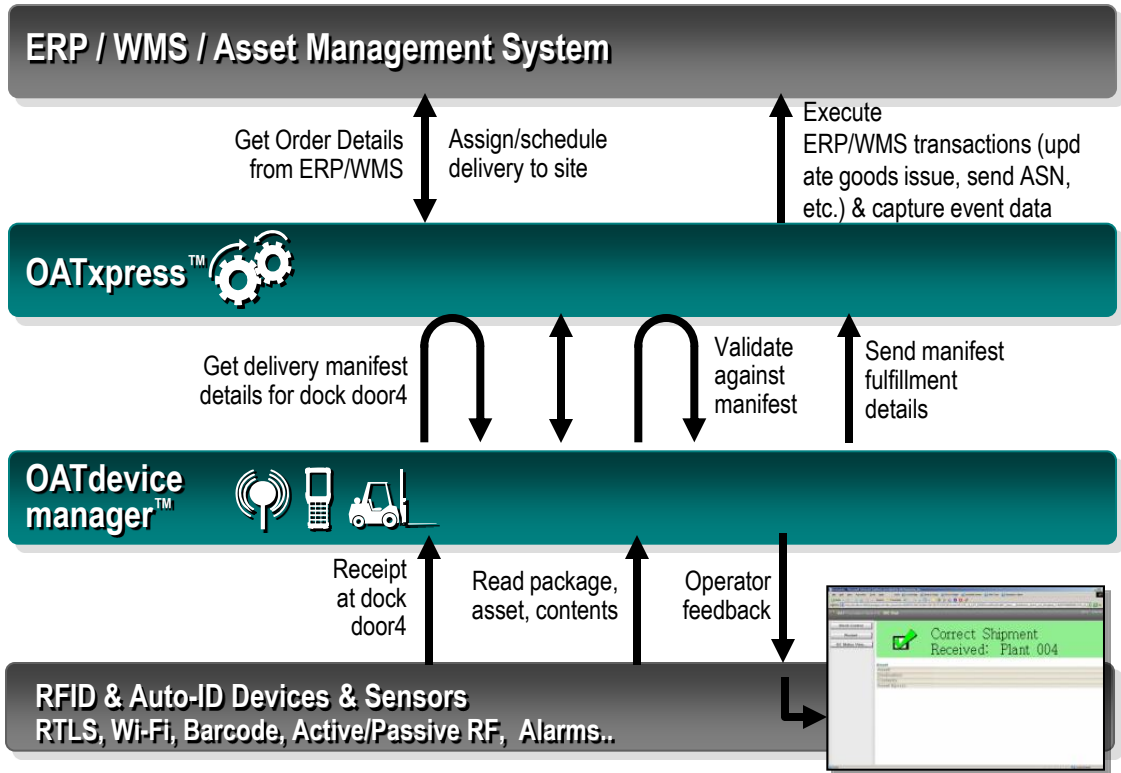
# Receiving : Functional Process Flows

## Receiving



### Sample Process Flow

- Validating manifest details, ASN against physical shipments

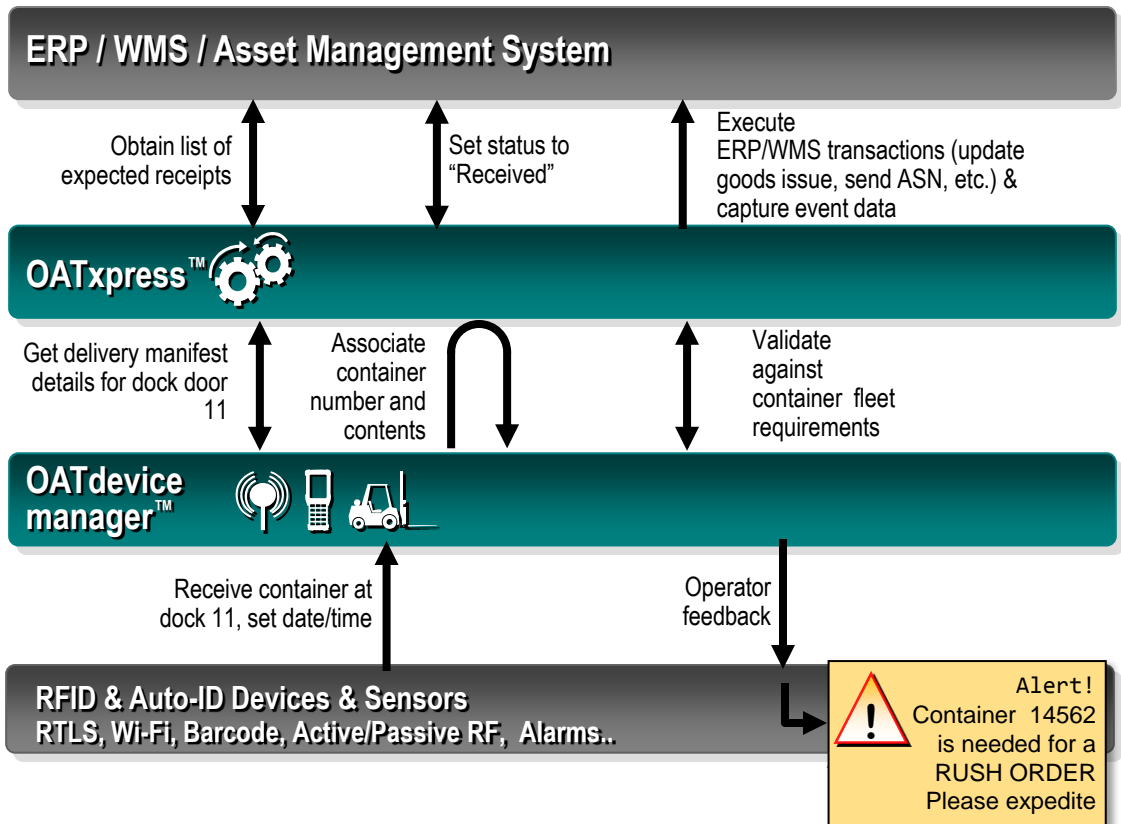


## Container Tracking



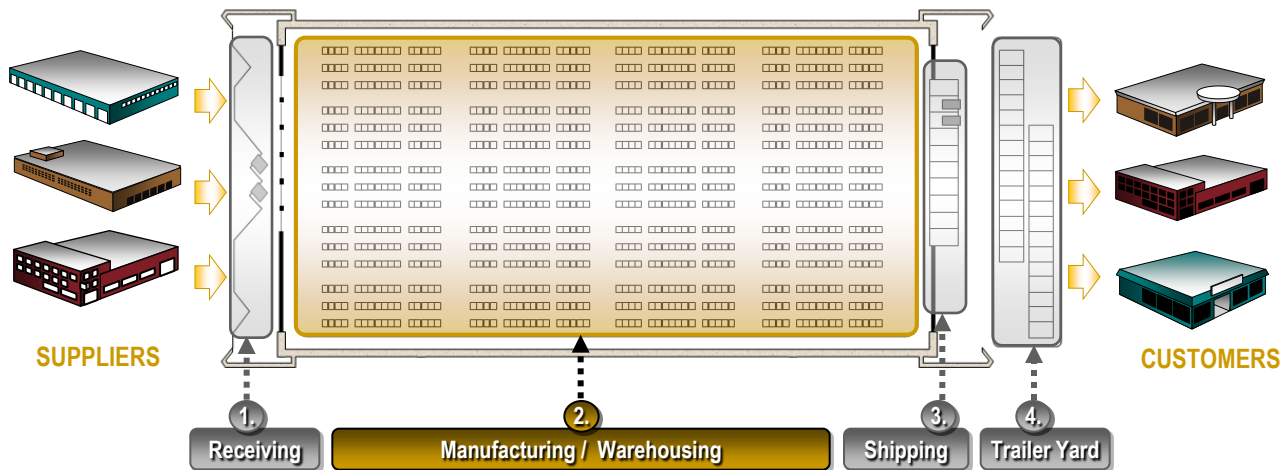
### Sample Process Flow

- Validating order & manifest details against physical containers and their contents





## 2. RFID Applications in Manufacturing / Warehouse



### Component & Subassembly Tracking



#### Auto-ID Application

- Automate barcode-based Work-in-Process tracking to document product lineage from components to subassemblies to finished product

#### Web Services Integration Options for ERP, WMS, Asset Management Systems

- Automatically update work-in-process status and component serialization as products are assembled
- Compare subassemblies with bill of materials
- Provide configurable settings to trigger alerts when assets are missing or manifest is incomplete

#### Auto-ID Value Add

- Fewer errors, shorter lead time, more thorough documentation
- Reduced search time and expedite costs
- Reduced inventory and storage costs
- Lower likelihood of rework, leading to increased productivity

### Tool Tracking



#### Auto-ID Application

- Automate check-in, check-out, real-time track and trace of specialized tools, molds and indirect materials, for manufacturing, maintenance & overhaul operations

#### Web Services Integration Options for ERP, WMS, Asset Management Systems

- Compare and update physical tool inventory against stock across multiple tool stores
- Update calibration status and alert operator when recalibration is due

#### Auto-ID Value Add

- Reduced expedite costs and excess inventory to compensate for lost tools
- Reduced labor costs for tracking down missing tools and managing administrative paperwork
- Improved assembly and service efficiency

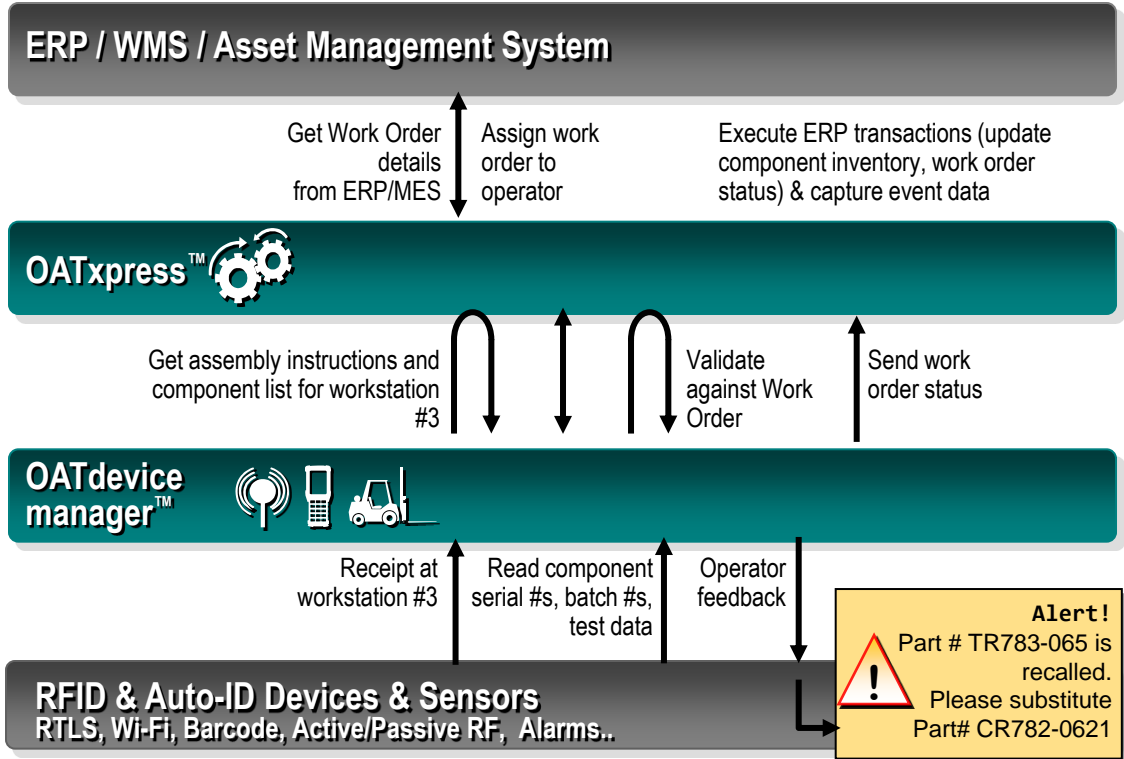
# 2. Manufacturing / Warehouse : Functional Process Flows

## Component & Subassembly Tracking



### Sample Process Flow

- Documenting and verifying component parts during the assembly process

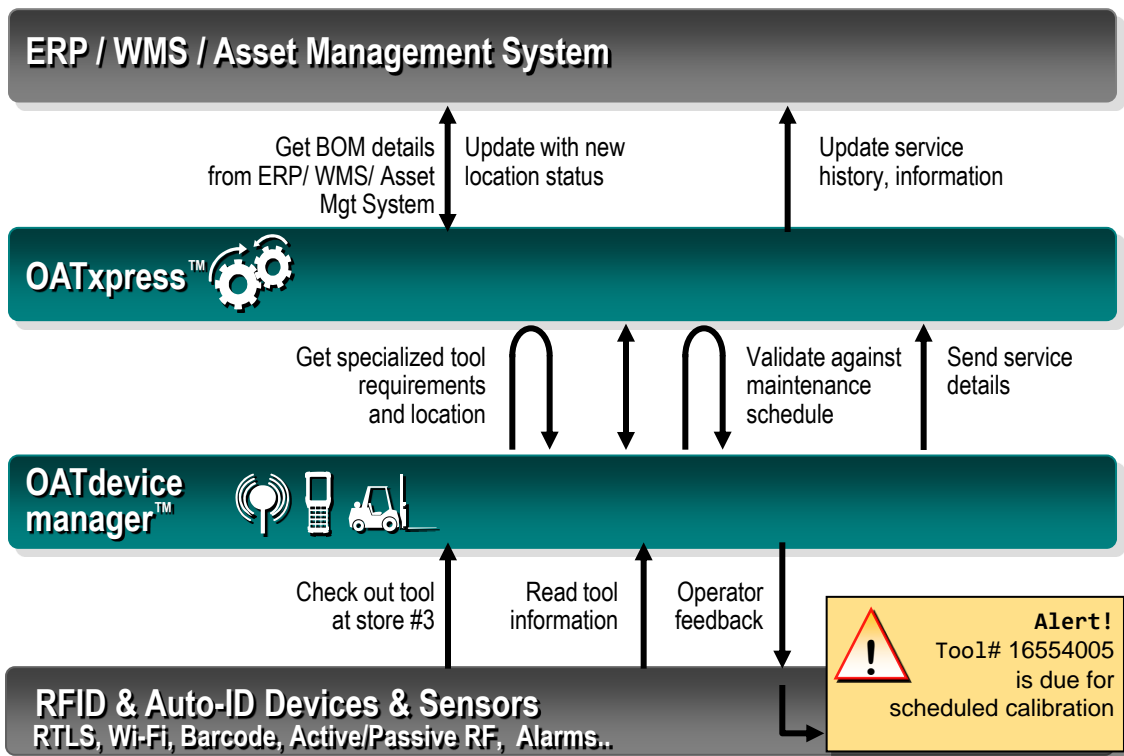


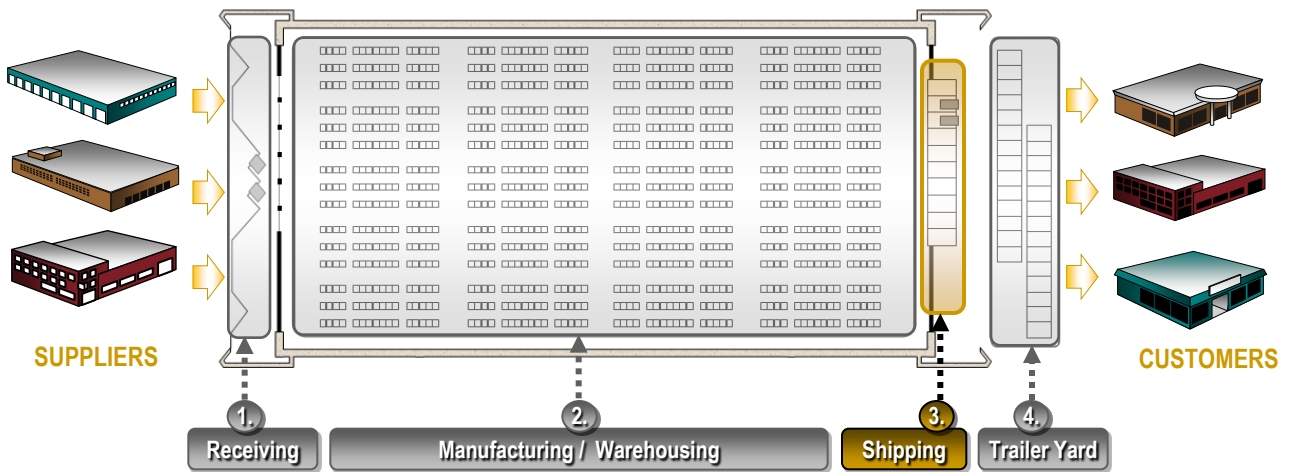
## Tool Tracking



### Sample Process Flow

- Managing tool stores and calibration schedule





## Shipping



### Auto-ID Application

- Automated Advanced Shipping Notices (ASNs) and verification of outgoing orders

### Web Services Integration Options for ERP, WMS, Asset Management Systems

- Expedite rush shipments
- Verify individual items within each shipment
- Verify final destination, carrier, dock door and customs clearance
- Flag rush shipments by comparing order number & special instructions

### Auto-ID Value Add

- 100% automated tracking & reliable confirmation of assets as they are shipped
- Significant reduction in error rates and costly correction processes
- Focus staff on exception handling vs. administrative paperwork

## Jig Tracking



### Auto-ID Application

- Automated check-in, check-out, real-time track and trace of specialized jigs and other indirect materials used for shipping high-value assets

### Web Services Integration Options for ERP, WMS, Asset Management Systems

- Track and update location and status of specialized jigs and the assets they transport
- Alert operator when jig inventory runs below a specified level

### Auto-ID Value Add

- Improved utilization of specialized equipment and transport vehicles
- Reduced expedite costs and excess inventory to compensate for lost materials
- Reduced labor costs for tracking down missing items and managing administrative paperwork
- Improved delivery and service efficiency

# 3.

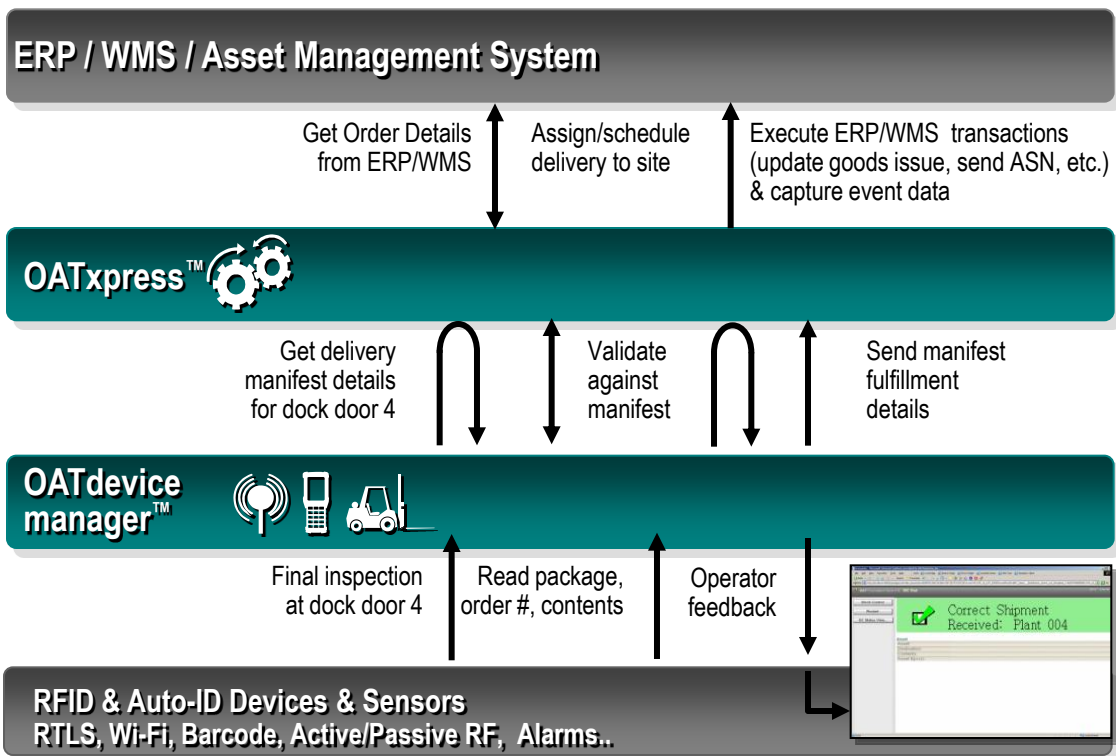
# Shipping: Functional Process Flows

## Shipping



### Sample Process Flow

- Verifying outgoing shipments, validating assets against delivery manifest

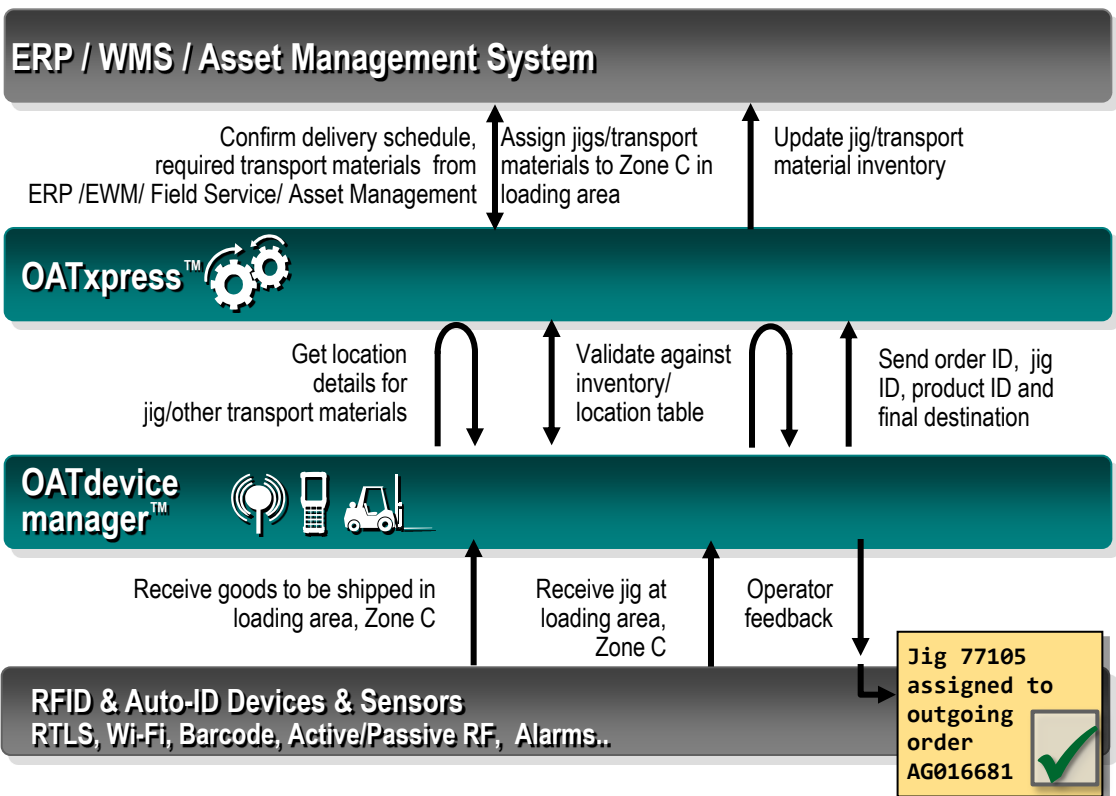


## Jig Tracking

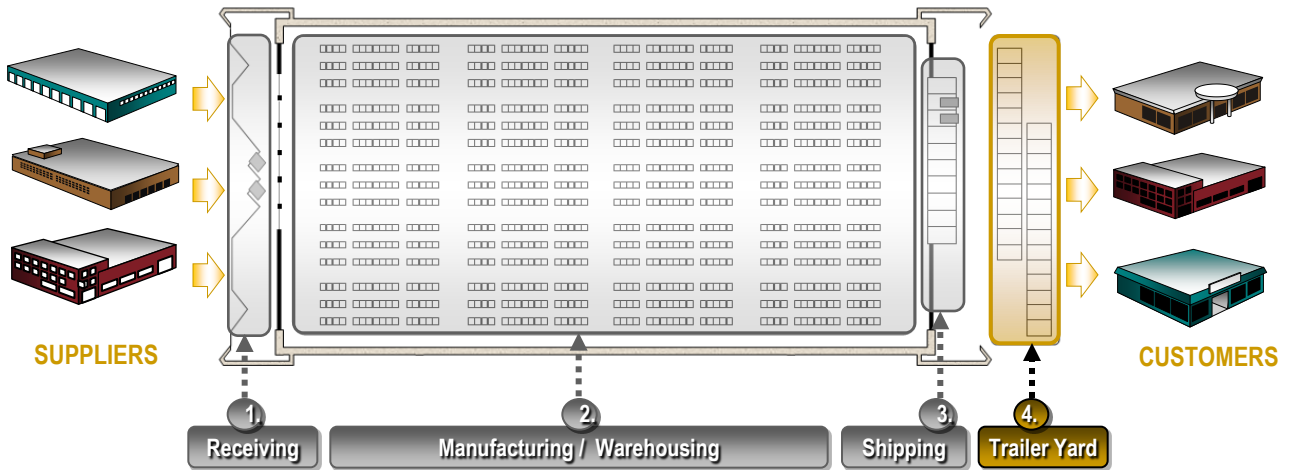


### Sample Process Flow

- Documenting and confirming indirect material availability with an automated check-in/check-out process







## Yard Management



### Auto-ID Application

- Automate check-in and dispatch, real-time track and trace of finished goods, yard trailers and contents

### Web Services Integration Options for ERP, WMS, Asset Management Systems

- Compare trailer contents with manifests, ASNs and work orders
- Update inventory and location of finished goods, place replenishment orders as needed
- Flag rush shipments by comparing order number and special instructions

### Auto-ID Value Add

- Reduced error rates and costly correction processes
- Reduced expedite costs and safety stock to cover lost shipments
- Reduced labor costs for tracking down missing assets and managing administrative paperwork
- Reduction in asset shrinkage
- Improved shipping estimates, leading to better customer service

## Whole Goods Tracking



### Auto-ID Application

- Automate check-in and check-out, real-time track and trace of finished goods

### Web Services Integration Options for ERP, WMS, Asset Management Systems

- Compare expected assets with physical assets
- Update inventory and location of finished goods, place replenishment orders as goods are transferred or sold
- Automatically locate assets across multiple yards

### Auto-ID Value Add

- Reduced labor costs and expedite costs for tracking down and/or replacing missing assets
- Reduction in asset shrinkage
- Improved product availability, leading to better customer service

# 4.

# Trailer Yards: Functional Process Flows

## Whole Goods Tracking



### Sample Process Flow

- Verify asset location, configuration & status across multiple facilities

### ERP / WMS / Asset Management System

Inbound customer request for Product 786456, Model AP4568

Schedule delivery from Dallas TX to customer site

Update shipment data and decrement inventory in ERP/ WMS / Asset Management System

### OATxpress™

Confirm location of specific product, model #, Dallas TX facility

Validate against manifest

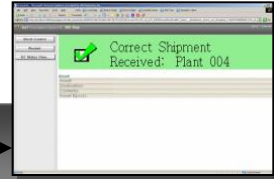
Send manifest fulfillment details

### OATdevice manager™

Confirm product location in Zone 15 of Dallas TX facility

Read product#, model #, at Dallas TX loading area

Operator feedback



RFID & Auto-ID Devices & Sensors  
RTLS, Wi-Fi, Barcode, Active/Passive RF, Alarms..

## Yard Management



### Sample Process Flow

- Verifying asset location and inventory counts during check-in/ check-out process

### ERP / WMS / Asset Management System

Get delivery schedule from ERP/ WMS / Asset Management System

Assign finished goods to zone within laydown yard

Update yard management map

### OATxpress™

Get location details for trailer

Validate against inventory/ location table

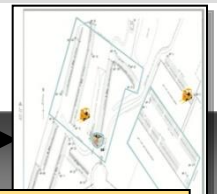
Send configuration details

### OATdevice manager™

Receipt at laydown yard

Read product ID, trailer ID, location

Operator feedback

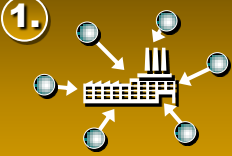





Pinpoint goods location in yard

RFID & Auto-ID Devices & Sensors  
RTLS, Wi-Fi, Barcode, Active/Passive RF, Alarms..



# Real-Time enabling the Value Chain

	 <b>1.</b> <b>Supply Chain</b>	 <b>2.</b> <b>Logistics &amp; Distribution</b>	 <b>3.</b> <b>Manufacturing / Assembly Lines</b>	 <b>4.</b> <b>Maintenance &amp; Reverse Logistics</b>
<b>Asset Attributes to Track:</b>	<ul style="list-style-type: none"> <li>• Component Parts</li> <li>• Supplier</li> <li>• Batch Number</li> <li>• Due Date</li> </ul>	<ul style="list-style-type: none"> <li>• Carrier</li> <li>• Order Number</li> <li>• Order Contents</li> <li>• Final Destination</li> <li>• Due Date</li> </ul>	<ul style="list-style-type: none"> <li>• Work-in-Process Status</li> <li>• Indirect Materials Req'd</li> <li>• Test Results</li> <li>• Custom Order Details</li> </ul>	<ul style="list-style-type: none"> <li>• Service History</li> <li>• Replacement Parts</li> <li>• Part Expiration Date</li> <li>• Service Due Date</li> </ul>
<b>Processes to Enable:</b>	Sourcing Shipping/ Receiving Container Tracking	Shipping/Receiving Yard Management Transportation Jig Tracking Whole Goods Tracking	Shipping/Receiving Line-side Replenishment Assembly Jig Tracking Tool Tracking	Line-side Maintenance Reverse Logistics
<b>Enterprise Systems to Enable</b>	ERP MMS WMS Enterprise Asset Mgt	ERP WMS Enterprise Asset Mgt	ERP MMS Enterprise Asset Mgt WMS	Field Service MRO Enterprise Asset Mgt
<b>Infrastructure to Enable</b>	Barcode, RFID, Contact Memory Buttons, Wi-Fi	Barcode, RFID, Wi-Fi, RTLS, GPS	Barcode, RFID, CMBs, Wi-Fi, PLCs, Stack Lights & other sensors	Barcode, RFID, CMBs, Wi-Fi, RTLS, GPS
<b>Quantifying Value:</b>	Increased Forecast Accuracy Reduced Safety Stock Reduced Expedite Costs	Streamlined Shipping Costs Increased Order Accuracy & Customer Satisfaction	Improved Product Quality, Fewer Returns Reduced Downtime Reduced Scrap & Rework Reduced Expedite Costs	Increased Time in Service Fewer Audits & Regulatory Fines Reduced Maintenance and Repair Costs

RFID & Auto-ID enabling production systems incorporates real-time asset, location and order status into day-to-day business metrics. This enables staff to uncover and address process errors before they impact product availability and customer satisfaction

# Real-Time Visibility for Asset Tracking: Best Practices

# 1

## Leverage your enterprise systems

Manufacturers and Service Providers make significant investments in ERP, WMS, Asset Management and MRO systems. Enriching these systems with RFID, Auto-ID or sensor data can dramatically reduce the time and cost of deployment.

# 2

## Take advantage of real-time data

Don't just capture RFID and Auto-ID information in a data warehouse. Take full advantage of real-time alerts and insights to reduce error rates and improve productivity.

# 3

## Focus on cost reduction

Many companies can realize significant savings in expedite, transportation, labor and inventory costs by real-time enabling error-prone process areas such as Shipping & Receiving, Container Tracking and Yard Management.

# 4

## Start with configurable packaged solutions

RFID & Auto-ID packaged solutions are much faster to test and deploy, and can often be easily configured for an organization's specific needs, without requiring custom development.

# 5

## Make sure your initial project has room for growth

Select a proven RFID & Auto-ID application platform with broad device support and deployment flexibility, so that you can evolve and scale easily.

# 6

## Begin with the end in mind

Don't lose sight of your business goals. Track and adjust your metrics along the way and plan for continuous improvement.

## About OATSystems

OATSystems, Inc., division of Checkpoint Systems, Inc., is a recognized radio-frequency identification (RFID) solution leader with software that empowers businesses to achieve competitive advantage and ROI from RFID enabled applications. As a pioneer in developing RFID & Auto-ID technology, OATSystems has been setting the standards in RFID for over half a decade and is responsible for industry firsts that include the largest scale and largest scope of deployments, as well as the most innovative approaches to providing enterprise-wide RFID solutions.

OATSystems' multinational client base consists of over 100 customers in retail, consumer packaged goods, consumer electronics, manufacturing, life sciences, aerospace and defense.

Contact OATSystems today at [www.oatsystems.com](http://www.oatsystems.com) or 781-907-6100 and get ready to take control of your operations.

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