



# Real-time Visibility

*RFID-enabled  
Applications for Apparel*

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Deployment Guide



Helping Retailers Grow Profitably

# Why Source-to-Store Visibility is Critical

Studies show that retail perpetual inventory accuracy is an on-going challenge. Error rates ranging from 45 to 65% are pervasive, resulting in inaccuracies and operational issues throughout the supply chain and in stores. Leading fashion retailers experience shelf out-of-stocks, excess inventory, and error rates in packing and order fulfillment, resulting in lost sales and negatively impacting profitability.



Apparel firms need real-time visibility to drive operational efficiency for the complete retail supply chain, from manufacturing to distribution and throughout the store.

## Visibility for Source Management and Distribution

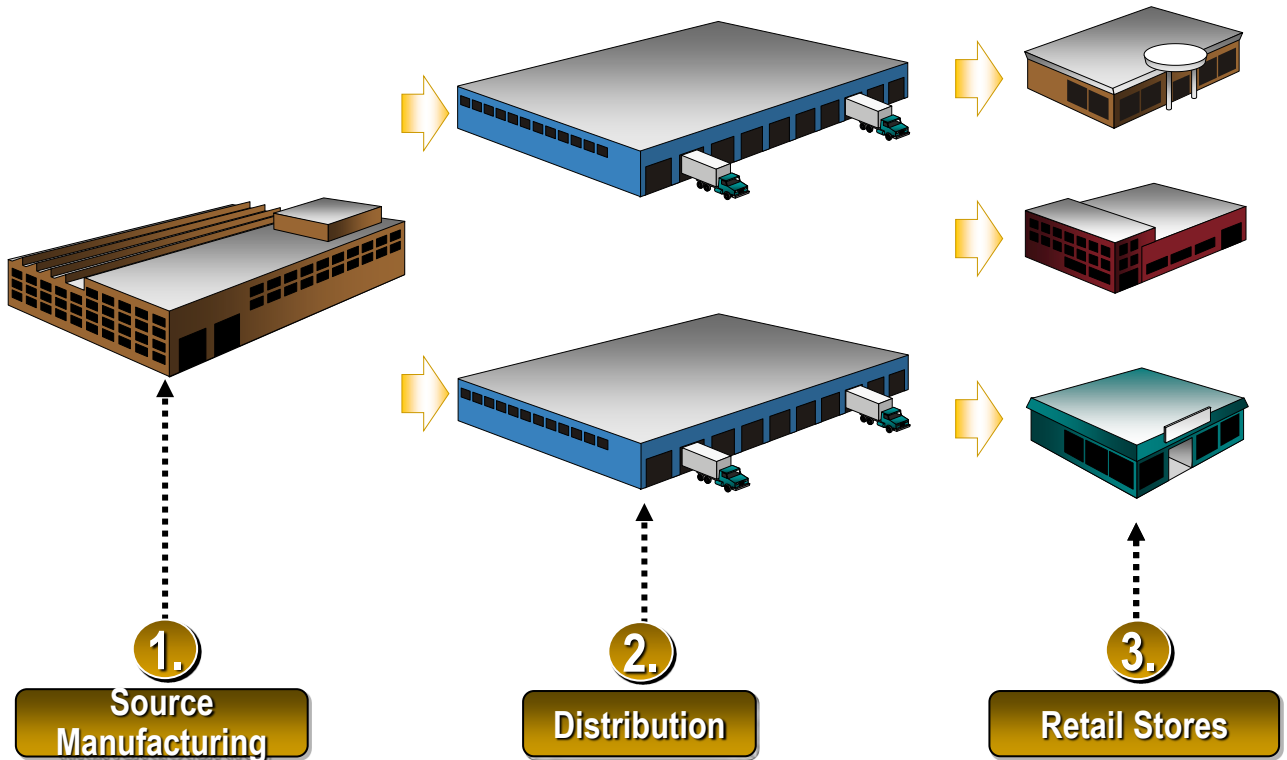
Real-time enabled applications can automate and error-proof lot packing, quality control, shipping, and receiving between supply chain partners. By leveraging RFID readers at dock doors, outgoing shipments and inbound receipts can be confirmed and verified in seconds, minimizing make-goods and reducing expedite, labor, and inventory costs.

## Visibility for Retail Stores

Real-time enabled applications provide accurate, up-to-the minute inventory visibility in receiving, in the back room, and on the sales floor. By monitoring shelf availability and back room inventory, proactive shelf replenishment can reduce out-of-stocks and increase sales.

# Optimizing the Apparel Supply Chain

By adding real-time visibility to business systems, RFID technology delivers process efficiency and cost savings. Optimizing order accuracy, inventory management and reverse logistics across multiple nodes in the value chain decreases inventory and handling costs, increases customer satisfaction, and creates a more predictable revenue stream.

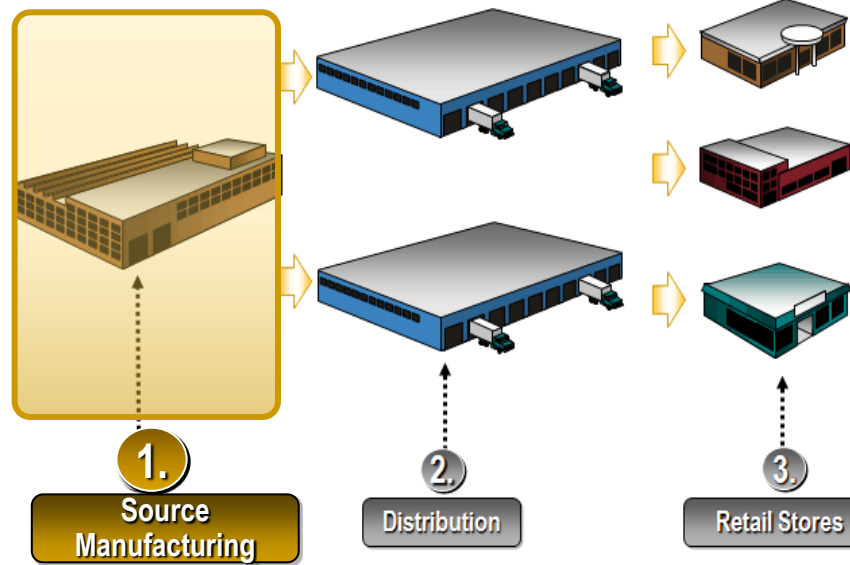


*Automating and error-proofing even a single business process can deliver a significant return on investment. Process-specific projects are often targeted in one or more of the following areas:*

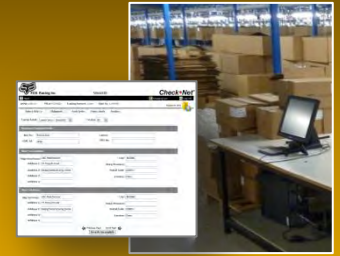
- Source Tagging
- Order Packing
- Receiving
- Stock Taking
- Order Tracking
- Yard Management
- Shipping
- Cycle Counting
- Shelf Replenishment

The use cases on the following pages illustrate specific areas where apparel firms can quickly and cost-effectively real-time enable their operations, throughout the source-to-store supply chain.

# 1. RFID Applications in Source Manufacturing



## Shipping



### RFID Applications

- Automate Advanced Shipping Notices (ASNs)
- Verify outgoing orders
- Automate tracking of delivery vehicles and associated orders

### Web Services Integration Options for ERP & WMS Systems

- Expedite rush orders
- Verify individual items with customer orders
- Verify final destination, carrier and dock door
- Flag rush orders by comparing order number & special instructions

### RFID Value Add

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

## Source Tagging



### RFID Application

- Automate tagging, verification and EPC number management of individual apparel items

### Web Services Integration Options for ERP & WMS Systems

- Interface with global Enterprise Number Management system
- Encode tags with batch numbers, shipment, customer data for source-to-store tracking
- Send advance orders to service bureau

### RFID Value Add

- Improved speed and accuracy
- Reduction in labor hours

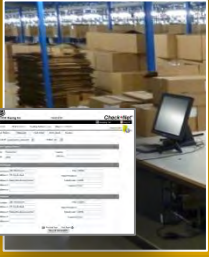
*“Currently being implemented in distribution centers, back rooms and storefronts around the globe, RFID revolutionizes the way retailers track inventory by moving it from a multi-day ordeal to a real-time operation.”*

*In short, RFID dramatically improves inventory management giving consumers better access to their favorite products when they need them.”*

-Aim Global Industry Brief:  
RFID Technology in Action: The Retail Sector

# 1. Source Manufacturing: Functional Process Flows

## Shipping



### ERP / WMS System

Get Order Details from ERP/WMS

Assign/schedule delivery to site

Generate ASN, validate against customer order, package contents

### OATxpress™

Get delivery manifest details for dock door 4

Validate against manifest

Send ASN details

### OATdevice manager™

Final inspection at dock door 4

Read package, order #, contents

Operator feedback

ASN Generated

Advanced Shipping Notice (ASN)	
30340779241D57400000000C	
30340779241D6B000000000C	
30340779242719000000000D	
3034077924274240000000012	
303407792427190000000001B	

### RFID Devices & Sensors

RTLS, Wi-Fi, Barcode, Active/Passive RF, Alarms..

### Sample Process Flow

- Verifying outgoing orders, validating packages against ASN

## Source Tagging



### ERP / WMS System

Get SKU details, batch #s from ERP/WMS system.

Update ERP/WMS record with unique EPC #s, batch information

### OATxpress™ Enterprise Number Management System

Get unique EPC for item #MNS-JN-DK-34

Append record with unique EPC #

### OATdevice manager™

Start encoding process. Attach tags to items which were not labeled during manufacture.

Encode tags

Operator feedback

Job submitted. No errors.

### RFID & RFID Devices & Sensors

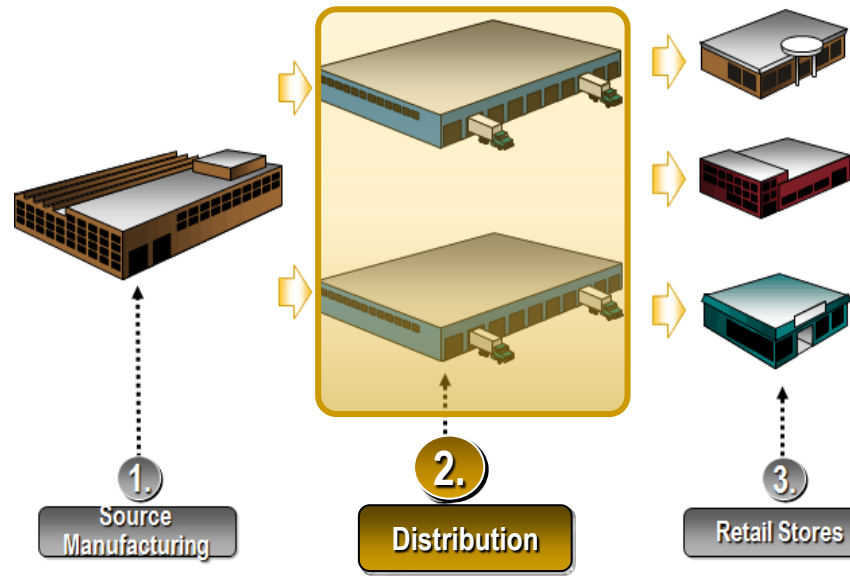
RTLS, Wi-Fi, Barcode, Active/Passive RF, Alarms..

### Sample Process Flow

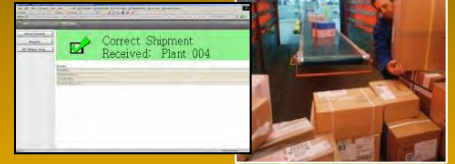
- Encoding and applying item level tags on garments at point of manufacture

Scenario with Mass Encode Option

Location	Read Point	Submit
Start Time	2009-07-17 19:50:20	
Mass Encode Input		
Number of Items	10	
GTIN Barcode	0027911	Submit



## Receiving



### RFID Application

- Automate receipt & verification of incoming goods

### Web Services Integration Options for ERP & WMS Systems

- Compare received goods with content manifest or ASN
- Flag rush orders by comparing order number and special instructions
- Expedite rush orders to final destination
- Quarantine and track non-scheduled shipments

### RFID Value Add

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

*“Now is the time to invest in RFID-enabled processes because of significant progress in the following areas:*

- Defined and achievable use cases*
- Reliable and effective hardware*
- Well-established and tested standards*
- Well-architected, highly usable, and configurable application software*
- Emergence of full RFID-enabled system providers.”*

*-- Leslie Hand,*

*IDC Retail Insights*

## Inventory Management

**Alert!** Minimum Stock Level for Item AST7090  
Auto-Replenishment Order in Process

### RFID Applications:

- Automated stock taking and inventory updates
- Automated goods receipt, confirmation, directed putaway and cross-docking
- Proactive inventory management and automatic replenishment

### Web Services Integration Options for ERP & WMS Systems:

- Compare expected inventory with actual inventory
- Alert operator when inventory is placed in the wrong area
- Alert operator or automatically replenish when stock levels run low
- Update inventory levels in enterprise systems and dashboards

### RFID Value Add:

- Faster, more frequent inventory counts
- More accurate item-level inventory and replenishment
- Reduced cycle time, movement and handling costs
- Reduced search time and expedite costs
- Increased downstream productivity

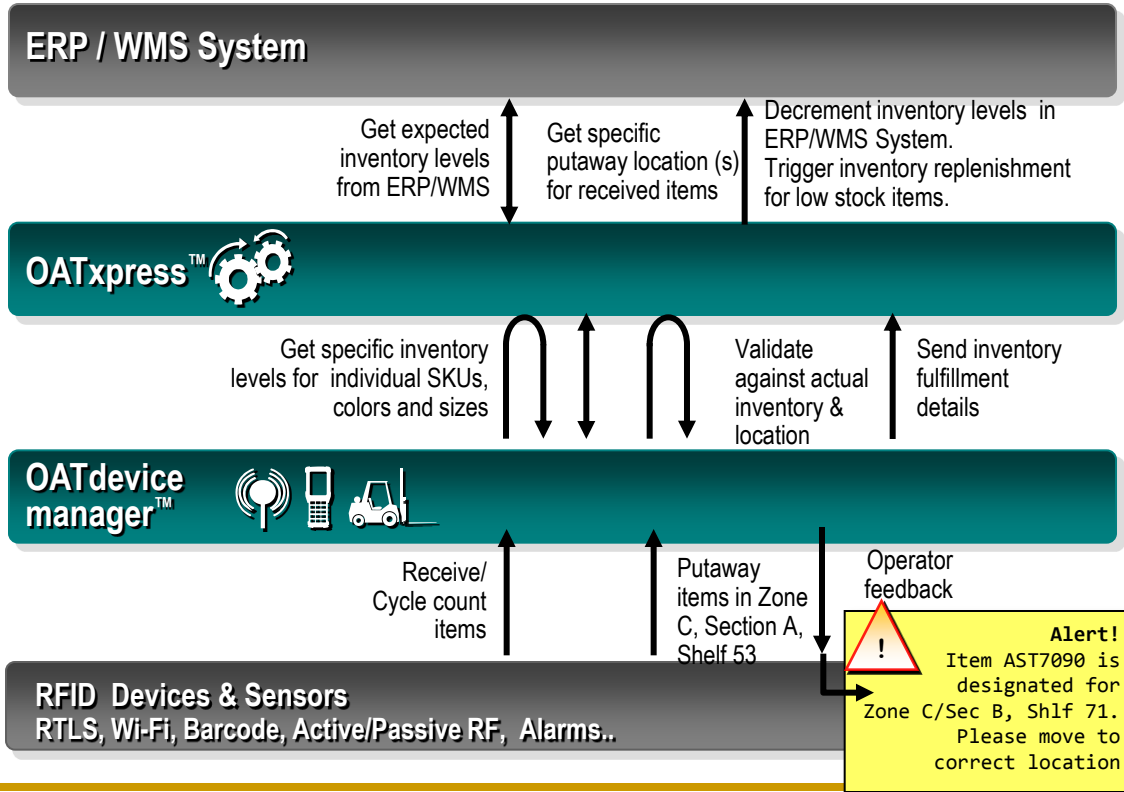
# 2. Distribution: Functional Process Flows

## Inventory Management



### Sample Process Flow

- Inventory verification and auto-replenishment

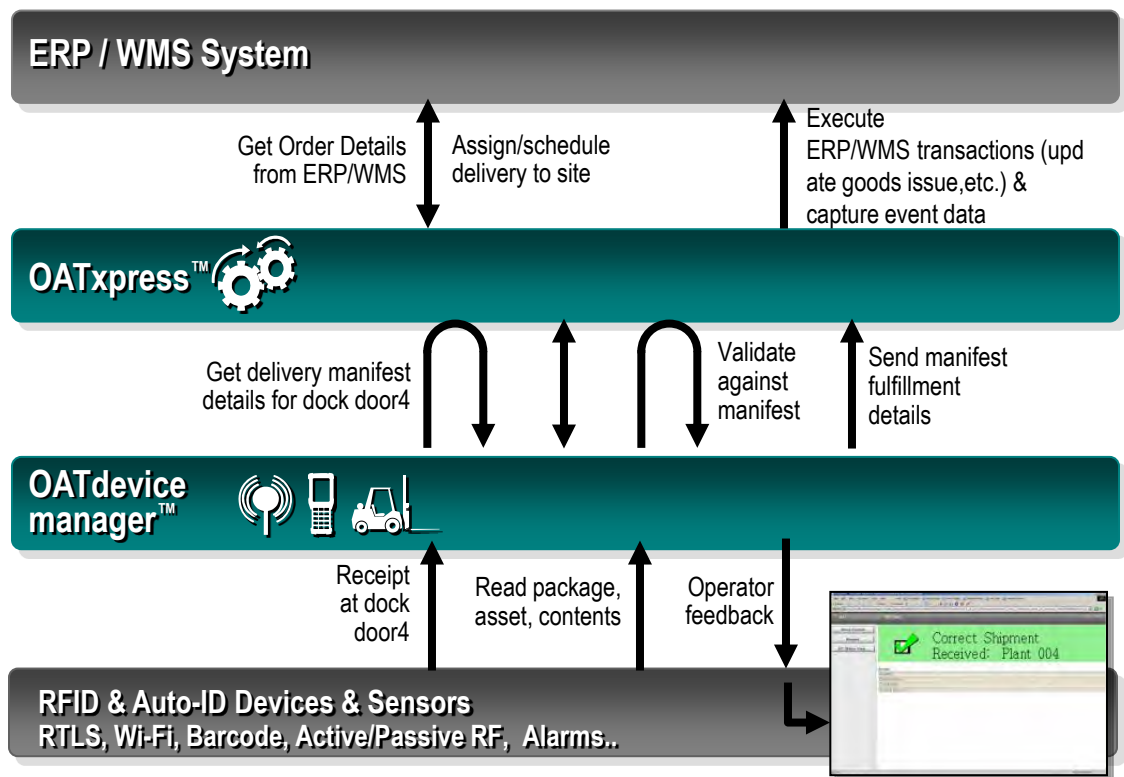


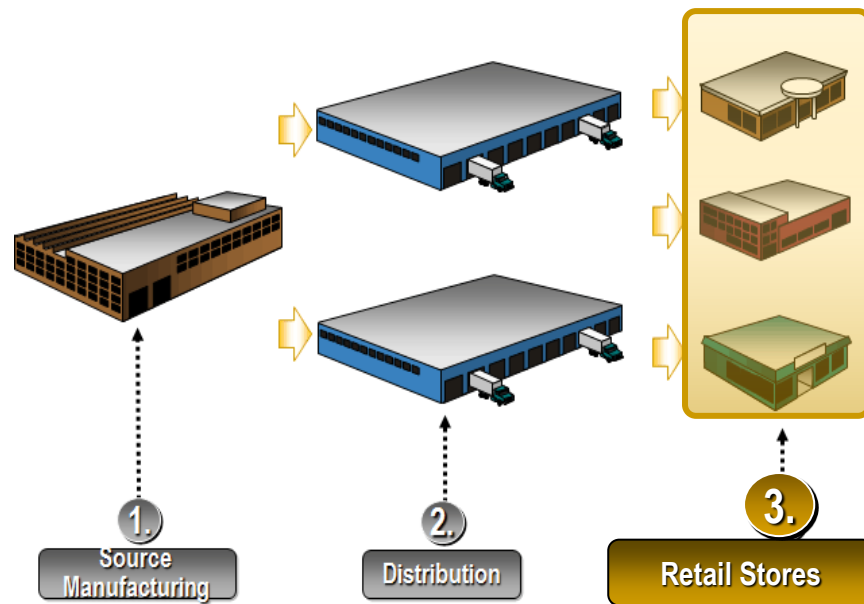
## Receiving



### Sample Process Flow

- Validate physical items against ASN & customer order to track supplier, end customer, final destination and item numbers





## Shelf Replenishment



### RFID Applications

- Automated tracking and replenishment of fast-moving merchandise

### Web Services Integration Options for Store Operations and POS Systems

- Compare current stock levels against recent sales
- Alert store associate to items that need to be moved to the sales floor or restocked
- Place replenishment orders when stock runs low

### RFID Value Add

- Increased shelf availability
- Sales associates spend less time tracking inventory and more time serving the customer

## Cycle Counting



### RFID Applications:

- Automated item-level cycle counting

### Web Services Integration Options for ERP & WMS Systems:

- Update inventory levels in enterprise systems and dashboards
- Compare expected inventory with actual inventory
- Alert operator when stock levels run low

### RFID Value Add:

- Faster, more frequent cycle counting
- More accurate item-level inventory
- Reduction in expedite costs, labor costs

*"It looks like the economy is coming back, but the recovery is fragile.*

*Retailers are especially interested in how they can nimbly respond to the way consumers and the economy will behave (in 2010)"*

-- Scott Krugman,  
Vice President  
National Retail Federation

# 3.

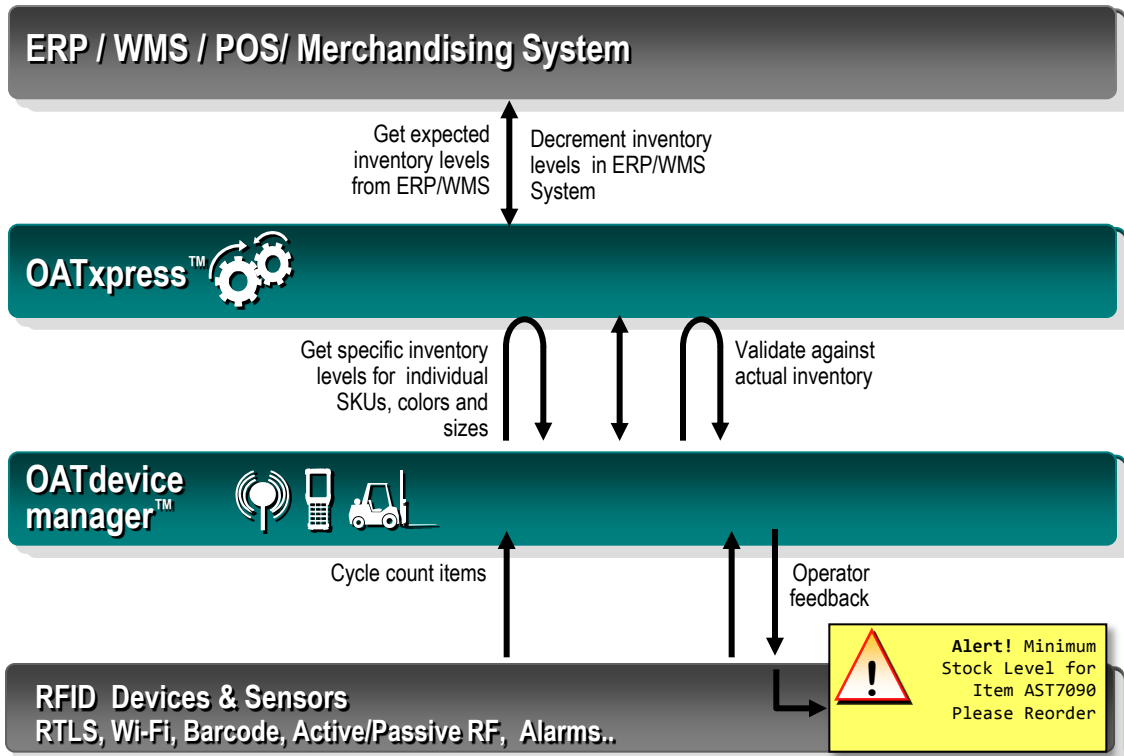
# Retail Stores: Functional Process Flows

## Cycle Counting



### Sample Process Flow

- Automated item-level cycle counting

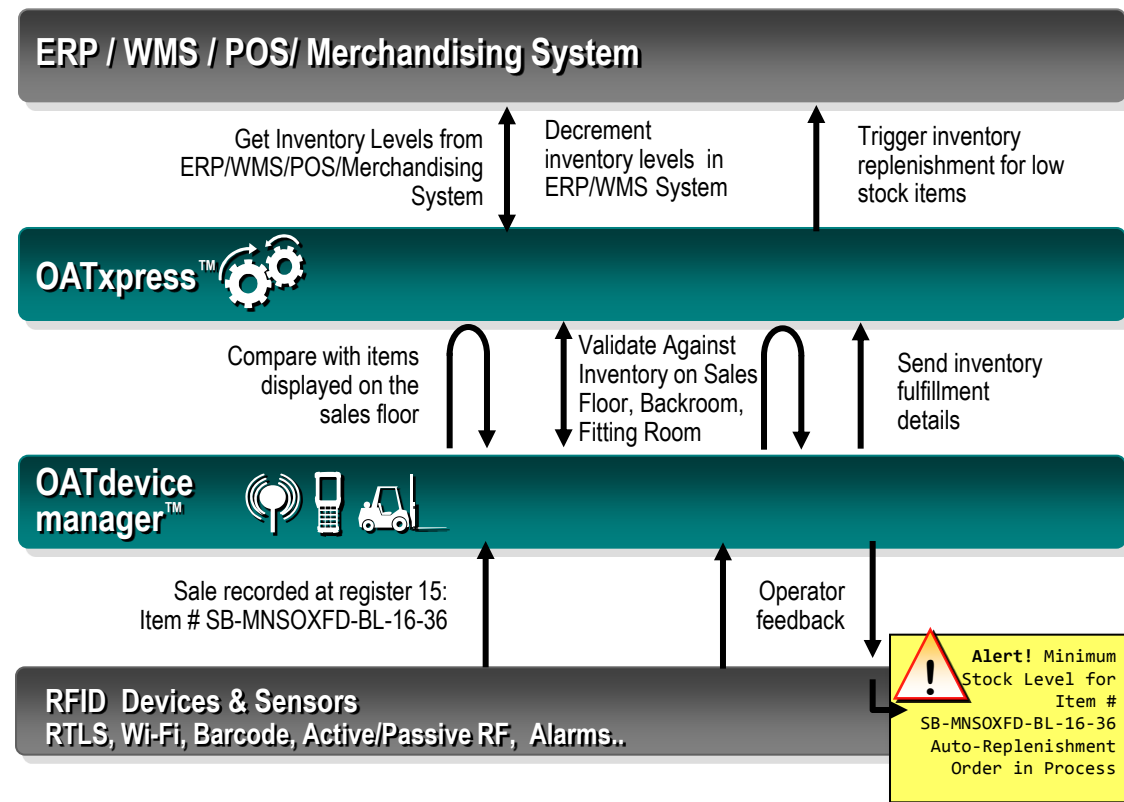


## Shelf Replenishment



### Sample Process Flow

- Verifying service orders and spare part availability during maintenance process



# Real-Time Enabling Retail Applications

	Real-Time Enabled Processes
Source Manufacturing	<ul style="list-style-type: none"><li>▪ Tag and Track merchandise</li><li>▪ Identify high-velocity items which need expediting</li></ul>
Warehouse Mgt & Fulfillment	<ul style="list-style-type: none"><li>▪ Confirm that custom orders match ASN manifest</li><li>▪ Verify manifest &amp; destination for outgoing shipments</li><li>▪ Prevent mis-shipments with visual/audible alarms</li><li>▪ Track finished goods inventory</li></ul>
Inventory Management	<ul style="list-style-type: none"><li>▪ Instantly locate merchandise on the sales floor, the back room, fitting room</li><li>▪ Trigger automatic replenishment of high-velocity products, reduce overall inventory</li></ul>
Point-of-Sale	<ul style="list-style-type: none"><li>▪ Increase merchandise variety by tracking item-level merchandise in real time</li><li>▪ Dynamically manage markdowns</li><li>▪ Improve customer experience through automated checkout, smart fitting rooms</li></ul>
Dashboards & Analytics	<ul style="list-style-type: none"><li>▪ Automatically update dashboards to reflect: physical inventory levels, sales volume, merchandise assortments by location</li></ul>

RFID enabling retail systems incorporates real-time order and location status into day-to-day business metrics. This enables staff to uncover and address process errors before they impact inventory availability and customer satisfaction

## About Checkpoint Systems

Checkpoint Systems is a global leader in shrink management, merchandise visibility and apparel labeling solutions. Checkpoint partners with retailers and their suppliers to reduce shrink, improve shelf availability and leverage real-time data to achieve operational excellence. Checkpoint solutions are built upon 40 years of RF technology expertise, diverse shrink management offerings, a broad portfolio of apparel labeling solutions, market-leading RFID applications, innovative high-theft solutions and its Web-based Check-Net data management platform.

Checkpoint's solutions enable retailers to enhance the shopping experience for consumers, and grow their business profitably.

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