Delta operates:

**19 Aircraft Types**

A fleet of over 830 mainline aircraft and 350+ regional jets

At an average age of 17 years

**Delta TechOps maintains a large breadth and depth of technical knowledge and know how in order to maintain industry leading operational performance.**

The integrated airline is extremely complex, requiring continual efficiency improvements within Delta.
Delta Air Lines Logistics Network

36 Domestic and 28 International Line Operations
Phase 1 – Provide inventory accuracy at Line stations using RFID technology to track all parts movements

**Goals of Logistics RFID**

- Track Inbound & Outbound Inventory
- Significantly reduce labor required for physical inventory
- Access to accurate inventory each day
- Visibility of missing or incorrect shipments

Ensures that parts required for maintenance are available for scheduled events
Logistics RFID Implementation

Corporate initiative to continue to leverage the use of RFID Technology

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>December 2013</td>
<td>RFID Proof of Concept (POC) on Wheels in ATL</td>
</tr>
<tr>
<td>April 2014</td>
<td>Successful RFID Implementation allowing Logistics to track wheels at 24X7 stations using AeroTrack software by AeroSpace Software Developments (ASD)</td>
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<tr>
<td>October 2015</td>
<td>Completed Release 1 = Tagging and Inventory Scanning for all assets in the Domestic 24X7 Stations. Nearly 20,000 assets received RFID tags in two months</td>
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<tr>
<td>May 2016</td>
<td>Implemented Release 2 - Outbound (Pack, Load, Track No-Association)</td>
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<tr>
<td>September 2016</td>
<td>Stabilization effort - rollback to Modified Release 1</td>
</tr>
</tbody>
</table>
Logistics RFID Process

Warehouse → Line Logistics → Handheld device manager

Read Tagged Assets

Print Tag for Non-Tagged Assets

Middleware

Inventory Management System (SAP)

Benefits:

Easily Locate Assets

Inventory Scans & Auditing
Key Benefits of RFID Implementation

- Successfully tracking wheel & brake movements to line stations
- Implemented RFID tracking of incoming inventory at all 24X7 stations
- Realized Cost Savings on labor required to complete physical inventory
  - Depending on station size, reduction of 2-3 people for 2-3 days versus one person 2-3 hours
- Ability to update station inventory on a daily basis
- Exception reports provide visibility to missing or incorrect parts
- Improve operational performance with accurate parts availability for scheduled maintenance
TechOps

- Station Outbound Inventory Tracking
- Wheel & Brake Asset Tracking
- Warehouse Fixed Scanner Implementation
- Fixed Scanner Implementation at 24X7 Stations
- Track parts movements to/from repair shops within Engine Maintenance
- Expansion of successful Airframe RFID of critical A/C items
- Tooling RFID
- Hangar Equipment RFID
- MRO & Safety RFID
Any Questions?