Deployment Strategies: The IT Framework

RFID Solutions Framework for the aviation industry

Presented by
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Agenda

- Relevance of RFID in the Aviation Industry
- Deployment Strategies: The IT Framework
- CODEplus RFID Framework
- Summary
Many industries dependent on aircraft can benefit from RFID:

- Airports
- Logistics
- Air Freight
- Defense
- Catering
- MRO
- Aerospace/Suppliers
- Aerospace/OEM
Relevance of RFID in the aviation industry:
RFID Applications

• Supply Chain Management and Factory applications
  • e.g. Receiving, QA/Inspection, Tool Crib, Container Tracking, Cross Dock, Case Load Shipping, and Plant to Plant
• Product Lifecycle Management
• Spares Management
• Automation of plane assembly process
Relevance of RFID in the aviation industry: MRO

- The requirements of the MRO events (Standard Maintenance Activities, Problem Resolution, Directives) are generally the same:
  - Identify Problem
  - Access the logbook
  - Locate required parts
  - Retrieve proper docs
  - Locate certified personnel
  - Locate required tools
  - Complete checklists/history log
  - Obtain release certificate
Relevance of RFID in the aviation industry: Solutions and Benefits

• **Solutions**
  - Minimize unplanned Maintenance
  - Manage revisions
  - Optimize inventory (out of stock)
  - Rapid identification of the right parts in the optimal location
  - Mechanic can access doc, task and parts info via RFID HH devices; locate and track approved spare parts
  - Identify and track tool location, usage history, and repair requirements

• **Benefits**
  - Overall reduction maintenance costs
  - Minimize time out of service-more seats in the air
  - Improve customer and regulatory compliance
  - Improve quality and safety
  - Auto-completion of required maintenance forms
  - Full fleet health monitoring
  - Improve worker productivity and reduce human error factor
Relevance of RFID in the aviation industry: New Capabilities

- RFID technology introduces new capabilities
  - Expedite transaction processing
  - Improve product visibility
  - Improve data accuracy
Relevance of RFID in the Aviation Industry: Overview

- Document
- Transport
- Disassemble
- Repair/Rebuild
- Diagnose & Deinstall
- Part ID
- Aircraft ID
- History
- Update Documentation
- Enter into Inventory
- Reinstall
- Reassembled & Verify

Source: IBM
RFID implementation and integration strategies based on the following approach:

- Integrating RFID Across IT Infrastructure
- Meeting Mandatory Requirements
- Fixing Organizational Processes (Lean Supply Chain)
- Proactive Operations and Improved Profitability
Deployment Strategies: The IT Framework

Phases

• Phase in approach for RFID implementation
  • Compliance
    • Meeting minimum requirements
    • Scalable and manageable Solution

• Integration
  • Integrate RFID across existing IT infrastructure
  • Increase accuracy and decrease error rates of existing applications (inventory management, etc.)

• Optimization
  • Address pain points by focusing on what is your business need and solution refinement
  • Define process capabilities
  • Define trading partners info
  • Leverage data synchronization

• Transformation
  • Business Process Re-engineering
  • Trading Partner Integration
RFID is all about managing data and transforming it into timely and relevant business information and decision

- Data Synchronization
- Data Accuracy
- Data Capture & Retention (Data Management)
• CODEplus RFID framework is EPC compliant and reflects industry best practices and supports modular implementations:

**RFID Solution:**
- Scalable
- Interoperable
- Portable
CODEplus RFID Framework: Component Level

Legend:
- eManage/IT RFID Tag&Ship

- Distributed/ Layered Framework
- Service Oriented Architecture (SOA)
- Unified Modeling Language (UML)
  - Activity
  - Data
  - Object
- Compliant with Industry interoperability standards (XML, SOAP, HTML, etc.)
CODEplus RFID Framework
Example: EPCglobal

- **EPCIS Service Repository**
- **EPCIS Accessing Application**
- **Partner Accessing Application**
- **ONS**

- **EPCIS Capturing Application**
- **Filtering & Collection (ALE) Interface**
- **Filtering & Collection**
- **Reader Protocol / Mgmt Interface**
- **RFID Reader**
- **Tag Protocol / Tag Data Standards**
- **RFID Tag**

Source: EPCglobal

Green boxes represent specs
Blue Boxes represent roles, not necessarily discrete components
• RFID is an enabler
• Architecture is key
• Build your own experience
• Plan to change your business processes
• Expect and plan for changes
Thank You

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