RFID in Transportation and Logistics

RFID Journal Live! 2005

Bob Nonneman
IE Manager – Corporate Engineering Group
RFID in Transport and Logistics

- 1990’s applications
  - Asset Management
  - Security and Access Control

- Current focus
  - Compliance based Fulfillment – “Tagging”
  - Warehouse efficiencies – “hands-free” data capture

- Next Generation Solutions
  - Attack ‘pain points’ in verticals
    - Example: Healthcare: Counterfeit -> Strong Authentication; Pedigree solutions
  - Requires more than tags and readers –
    - Advanced information exchange and collaboration
Value Proposition: Using *The Right* Logistics Provider

- Standards
  - Proxy: Involvement and leadership in standards processes
  - Understand “where the puck is headed”
- Shorten the cycle
  - Avoid the common mistakes. Leverage past experience
  - Be “compliant” early. Get ahead of the curve
- Costs
  - Leveraged purchasing – Lower costs
  - Share infrastructure costs across clients
  - Reduce “dedicated resources”
  - Processes re-engineered to capture savings opportunities
- Strategic
  - Competitive advantage
Pilot: Distribution & Fulfillment

**Order Pick Pack**
- New carton level ePC sequenced as RF tag is applied

**Auto-Sortation**
- Auto-sort to pallet build stations and proper shipping door, based upon customer account, zip or other sort criterion in RF tag
- Primary sort

**Order Consolidation**
- Case and pallet ePCs are linked in hierarchy, providing higher read integrity

**Shipping**
- TL/LTL pallet tags read as they pass through dock door reader.
- Small package tags are read as they pass through dock door reader.
- Inventory relief and ASN triggered by “load” event at dock door
- Invoice triggered by “load” event

**Receiving**
- RF seal confirms trailer has not been opened, right load, right location

**Staging**
- Auto receive when coupled with an ASN
- Passive tags on pallets and cases store ePC and content data

**In-Transit**
- Forklift ID linked with pallet & carton IDs
- Floor mounted readers capture asset information and timestamp. Forklift asset tag also contains maintenance records

**Bulk Storage**
- Continuous inventory visibility enabled by RF, reducing physical counts, search time and movement data entry

**Pick Replenishment**
- De-link pallet and case ePCs, replenishment signal triggered by case consumption read

**Cross-Dock**
- Dock Door Readers
  - Auto receive when coupled with an ASN
  - Pass through dock door reader.
Pilot: Reusable Container Sortation

- **Phase 1**
  - Lab Evaluation and Feasibility in UPS Plant Engineering Test Lab – Doraville GA -2Q 2004
  - Equip optical scan tunnels with EPC/RFID readers
  - **Performance:**
    - Accuracy and speed is critical

- **Phase 2**
  - Pilot Implementation at UPS World Port Air Hub Louisville Ky. – 4Q 2004
  - Measured improvement in read rates and exception handles
Pilot: UPS Shipping Clients

- **WorldShip Domestic®**  **ConnectShip™**
  - Initial software tools for RFID compliant shipping
  - Print RFID labels dynamically as needed
  - Eliminates need for dedicated shipping lines for RFID-tagged goods
- Vehicles move through controlled access points to enter or exit UPS facilities.
- **Objectives**: Monitor vehicle activity using EPC RFID.
  - Includes Package Cars and Tractor Trailers at Roswell GA facility
- **Next Steps**:  
  - Integrate with other technologies to improve automotive, dispatch and security processes
• **Savi Inc.** is a manufacturer of active RFID systems and also provides system integration services centered around their Smart Chain Middleware™ platform
  - UPS Strategic Enterprise Fund closed on the investment in 1999

• **Impinj Inc.** is a fabless semiconductor company developing CMOS integrated circuit products and solutions using its exclusive Self-Adaptive Silicon™ technology.
  - UPS Strategic Enterprise Fund closed on the investment in June 2004
  - Business Segments:
    - AEON™ - Embedded nonvolatile memory technology in logic CMOS
    - RFID – First Gen2 Products
Thank You

Bob Nonneman
BNonneman@ups.com
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