Radio Frequency Identification (RFID)

Enabling the Supply Chain with RFID Technology

February 9, 2005

The RFID Vision

Implement knowledge-enabled logistics through fully automated visibility and management of assets in support of the warfighter

Transformation is a Requirement

"To win the global war on terror, the armed forces simply have to be more flexible, more agile, so that our forces can respond more quickly. "
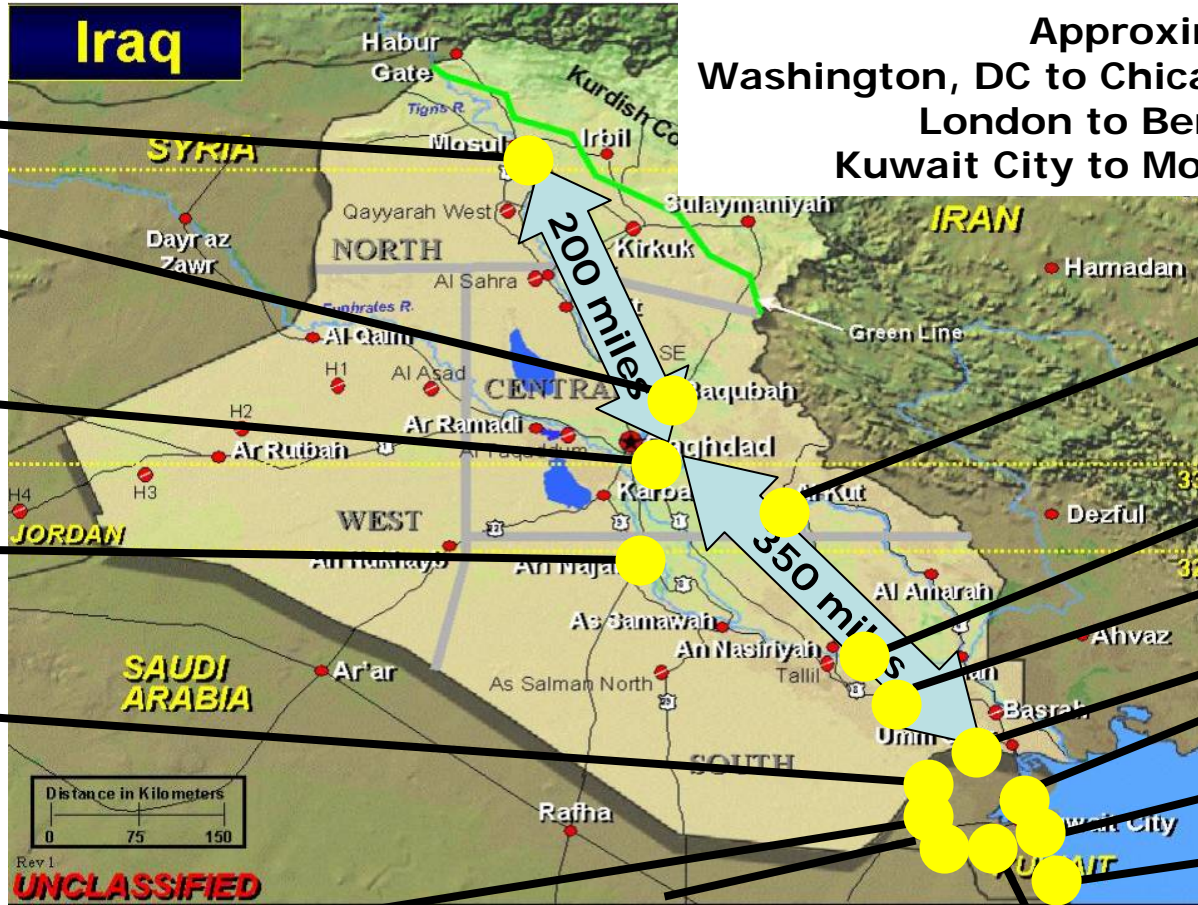
United States Secretary of Defense
Donald Rumsfeld, March 6, 2003

Why DoD Needs RFID…

Iraq

Approximate distances
Washington, DC to Chicago: 595 miles
London to Berlin: 600 miles
Kuwait City to Mosul: 700 miles

LSA Diamondback

LSA Anaconda (Balad)

Baghdad International Airport

LSA Bushmaster

Camps Arifjan, Fox, Doha, PA, Udari, NY, NJ, VA

Al Kut AB

LSA Adder, FLB Cedar (Tallil)

LSA Viper

Navastar

Ash Shuwayk

Al Shuaybah

Kuwaiti Naval Base

Theater Distribution Center

Al Jaber Airbase

Kuwait International Airport

200 miles

350 miles

DoD RFID Goals

- *Increase Warfighter/Customer Confidence in the Reliability of the DoD Supply Chain*

- *Improve Visibility of Information and Assets throughout the DoD Supply Chain*

- *Improve Process Efficiency of Shipping, Receiving and Inventory Management*

- *Reduce Cycle Time*

An Enabler to the Integrated DoD Supply Chain

Cases/Pallets are labeled with passive RFID tags. Cases are associated to pallet

Cases/Pallets are read as they are received and **new shipments are labeled**. Orders are verified for accuracy

Cases/Pallets are associated with **Active RFID** to provide TAV.

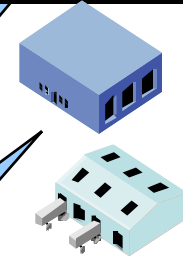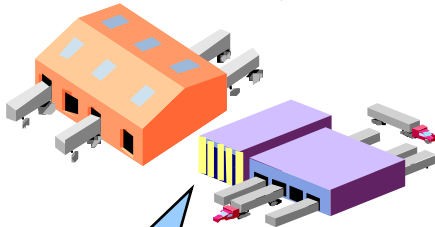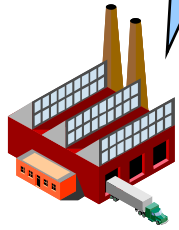**Data is timely and accurate via network of linked readers** allowing asset visibility along the entire supply chain

Manufacturers/ Suppliers

Distribution Centers/Depots/TDCs

Commercial/ Military Carriers

TMO/Supply/ Theater Depots

Customer

Timely and Accurate Data

When shipments are reconfigured a new RFID Tag is created for the pallet and associated with cases on that pallet

The **cases/pallets are automatically received** with few disputes and info is shared with the AISs. Reconfigured shipments receive a new RFID Tag.

Customers have visibility of requisitions and **are confident** in the status provided by the system

RFID Scope/Standards

Active RFID – freight containers, air pallets

- *SAVI 433 Mhz readers*
- *SAVI tags*
- *DoD tag data formats*
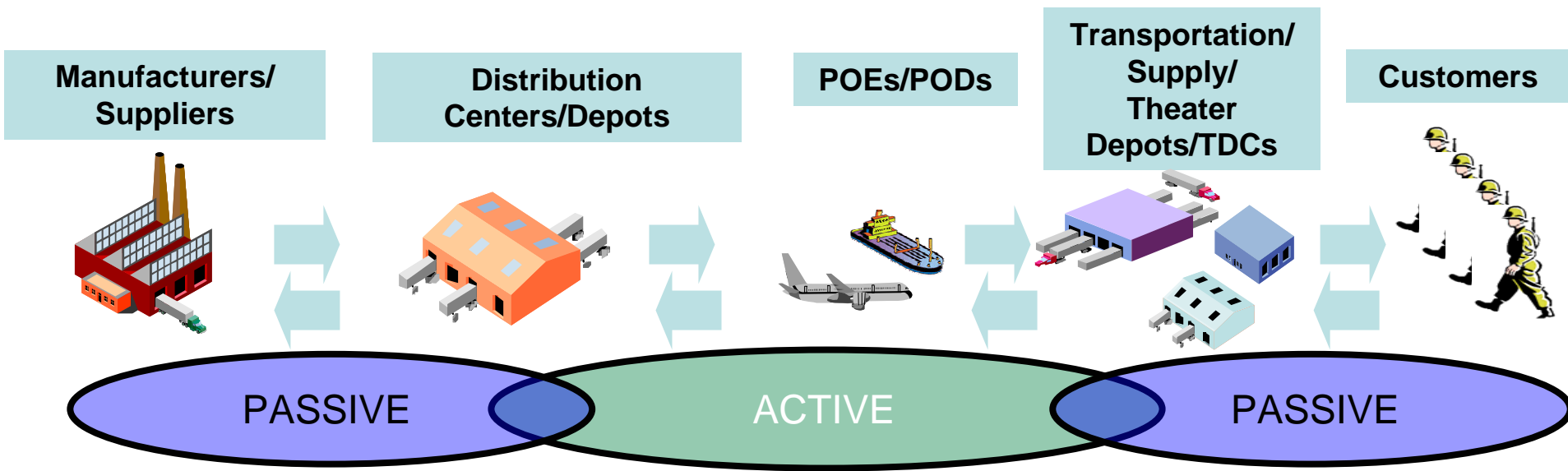- *Suppliers rarely obligated to apply tags*

Passive RFID – case & pallet (all items), item packaging (UID items)

- *EPC std UHF readers*
- *EPC Class 0 & 1 std tags*
  - *Migration to EPC UHF Generation 2 std*
- *EPC and DoD tag data formats*
- *Suppliers will be contractually obligated to apply tags*

Complementary use across the logistics supply chain

Manufacturers/ Suppliers

Distribution Centers/Depots

POEs/PODs

Transportation/ Supply/ Theater Depots/TDCs

Customers

PASSIVE — ACTIVE — PASSIVE

Passive RFID Implementation Plan for DoD Suppliers

January 1, 2005

Classes of Supply:

- II, VI, IX, I (PORs/MREs)

Level of Tagging:

- Shipping Containers, Palletized Unit Loads, Exterior Containers

Ship to locations:

- San Joaquin, Susquehanna

60,000 DoD Manufacturers/Suppliers

New contracts and revisions

Classes of Supply

Level of Tagging

Ship to Locations

January 1, 2006

Classes of Supply:

- Begin All Classes

Level of Tagging:

- Shipping Containers, Palletized Unit Loads, Exterior Containers

Ship to locations:

- Strategic CONUS DLA Depots, TRANSCOM Facilities & Service Maintenance Facilities

January 1, 2007

Classes of Supply:

- All Classes

Level of Tagging:

- Shipping Containers, Palletized Unit Loads, Exterior Containers, UID Item Unit Pack
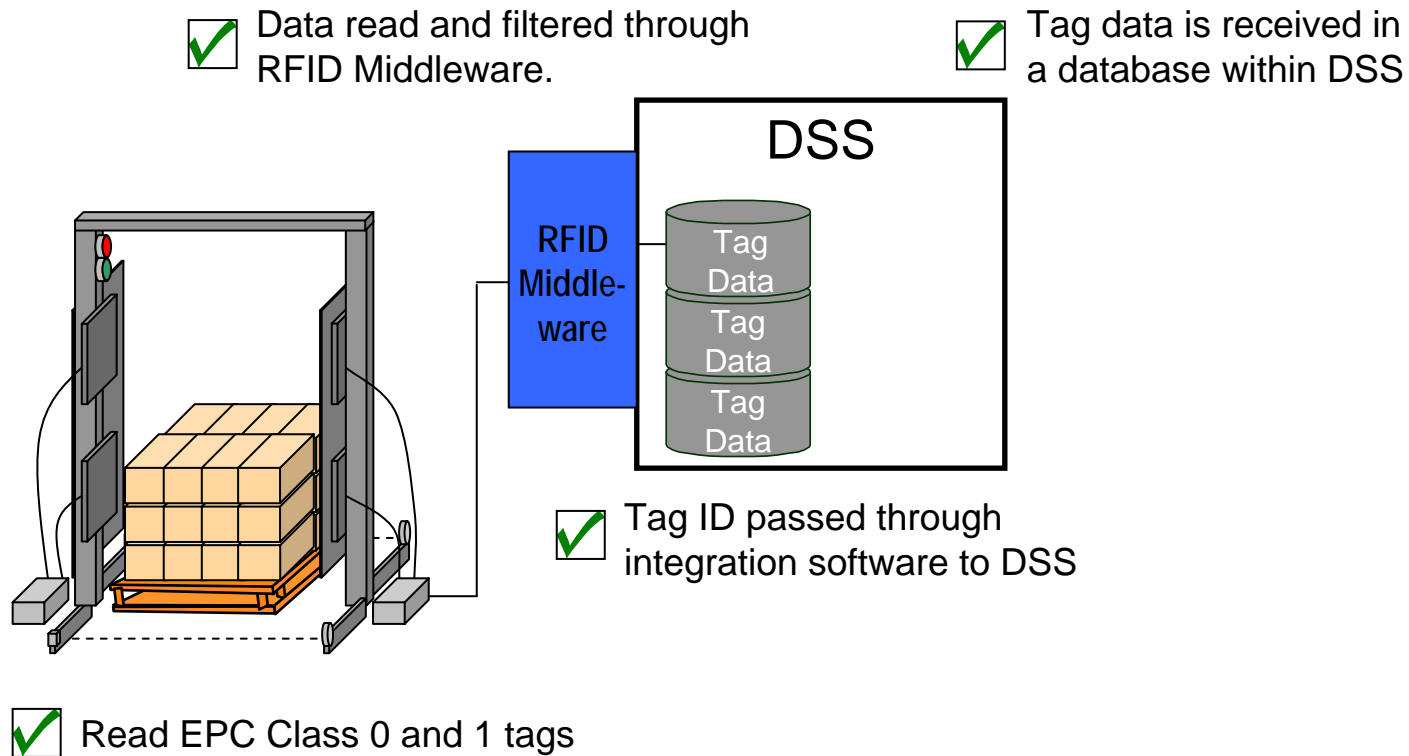
Ship to locations: All Locations

Steps to Implementation

♦ Prepare the Distribution Centers

♦ Develop Contractual Requirements

♦ Develop the Data Transaction & Transmission Capability

Distribution Centers Operational

DDSP and DDJC

✓ Data read and filtered through RFID Middleware.

✓ Tag data is received in a database within DSS

DSS

RFID Middle-ware

Tag Data

Tag Data

Tag Data

✓ Tag ID passed through integration software to DSS

✓ Read EPC Class 0 and 1 tags
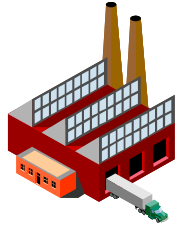
Contractual Requirement

- Two Major Requirements for Suppliers

  - Passive Tagging at the case and pallet level in accordance with the Implementation Plan

  - Advance Ship Notice (ASN)

- DFAR clause references the MIL-STD 129P (3) for implementation details

  - Definitions

  - Tag Data Standards

  - Tag Placement

  - Performance Requirements
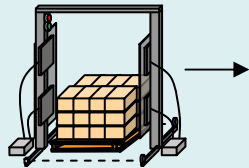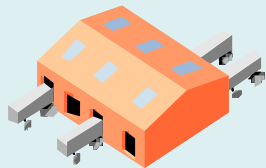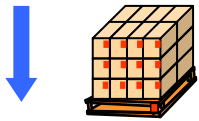
RFID Data Flow

Manufacturers/ Suppliers

856

UDF FTP

Web Entry

WAWF

ASN

RFID Middle-ware

DSS

Distribution Centers/Depots

DDSP and DDJC

Benefits Across the Supply Chain

Active RFID
- ♦ Deployed since 1994
- ♦ Largest operational system in world

Passive RFID
- ♦ Partnering with Wal-Mart to drive global adoption
- ♦ Driving a common standard via EPCGlobal
- ♦ Deployed since 2003

- Better inventory control in deployed environments and support for agile combat in an austere environment

- End-to-end visibility reduces bullwhip and stockouts

- Productivity gains

Next Steps

- **Publish DFARS Rule for passive RFID**

- **Provide Education and Outreach to the Acquisition Community**

- **Perform Safety Certification Testing (HERO, HERF, HERP) for passive RFID**

- **Receive and Ship Tagged Materiel**

For Your Information

- For further information that can assist you with compliance, visit:
http://www.dodrfid.org

  - DoD RFID Policy

  - DoD RFID Supplier Implementation Plan

  - DoD Suppliers' Passive RFID Information Guide

  - MIL-STD 129P(3) (Updated with RFID changes)

  - Draft Wide Area Workflow (WAWF) Implementation Guides (IG)

  - Frequently Asked Questions (FAQ)

  - Schedule of RFID Events where DoD RFID personnel will be speaking

- You can ask the team any RFID-related question through the following email address: info@dodrfid.org