



DoD RFID Policy Update

November 16, 2004



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(Supply Chain Integration)



Agenda

- **General RFID Overview**
- **Why RFID?**
- **RFID Policy (Who? What? When?)**
- **Passive RFID Implementation Plan**
- **Benefits**
- **Next Steps**



Automated Identification Technology Suite

Linear Bar Code



Smart Card/CAC



2D Symbol



CMB
Contact Memory Button



Contact Memory Button

OMC
Optical Memory Card



Optical Memory Card

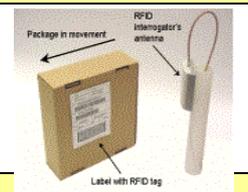
STS
Satellite-Tracking Systems



RFID - Active
Radio Frequency ID



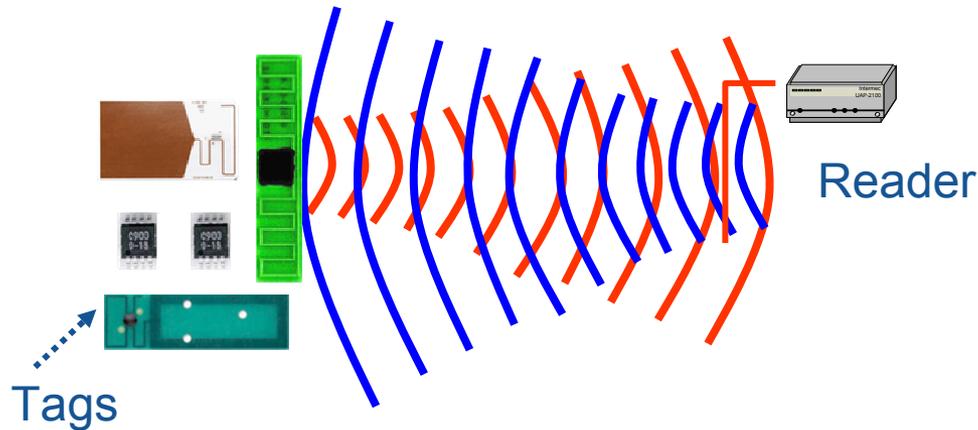
RFID- Passive
Radio Frequency ID





Radio Frequency Identification

RFID: The fundamentals



What is RFID?

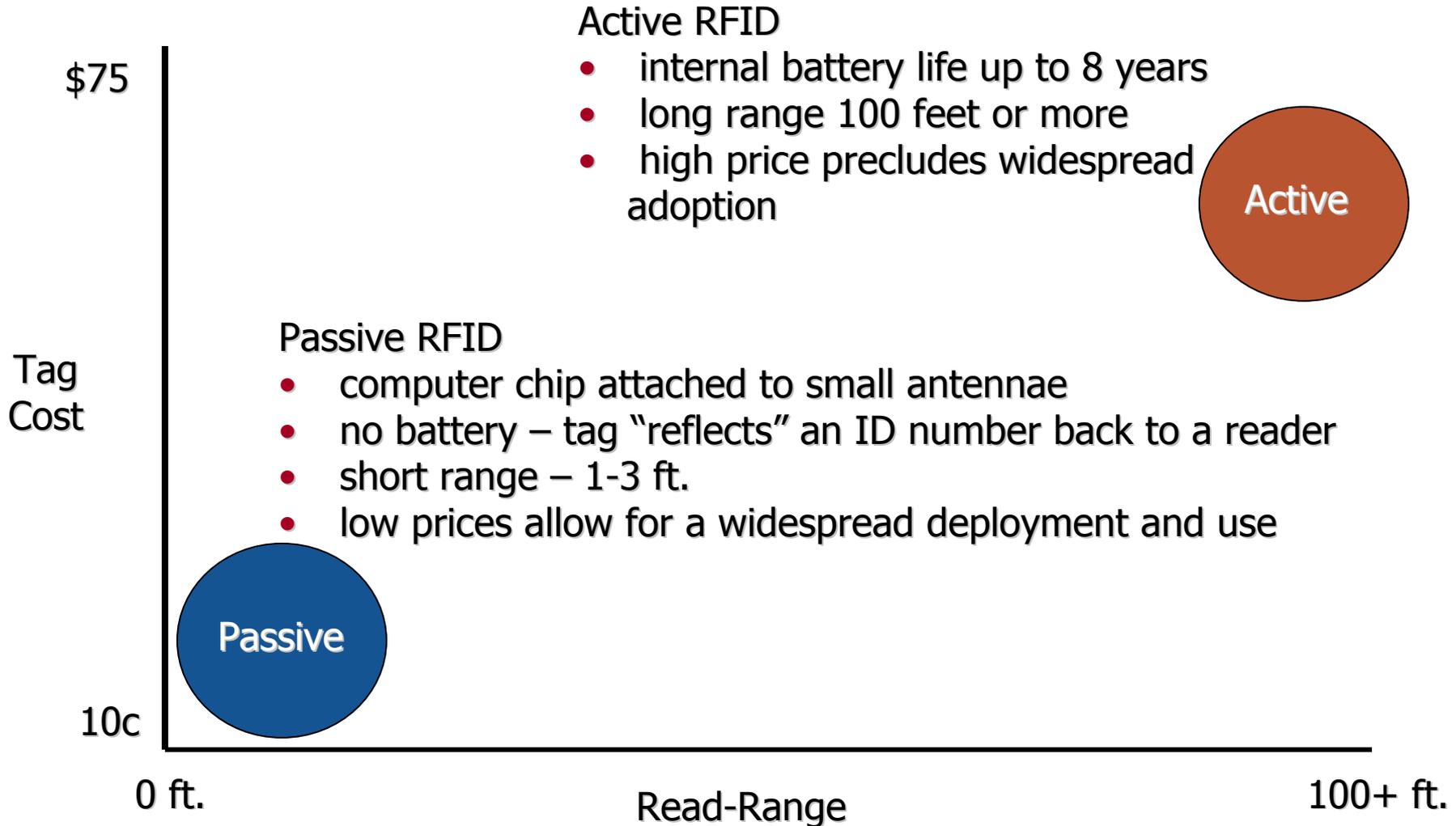
- > A means of identifying a unique object or person using a radio frequency transmission
- > Tags (or transponders) that store information, which can be transmitted wirelessly in an automated fashion
- > Readers (or interrogators) both stationary and hand-held read/write information from/to tags

How does it operate?

- RFID tags are affixed to objects and stored information may be written and rewritten to an embedded chip in the tag
- Tags can be read remotely when they detect a radio frequency signal from a reader over a range of distances
- Readers display tag information or send it over the enterprise network to back-end systems



Active RFID vs. Passive RFID



Why we need RFID . . .



Visibility is Critical to Effective Logistics Support



Facing new challenges...



- Rapidly moving force on a dynamic battlefield
- Demand for better information on assets
- Need for more effective management of inventory



- Improve business processes now
- Influence the direction and cost of technology development
- Drive the standards to work for us
- Facilitate the implementation of Unique Identification (UID)



The RFID Vision

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





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

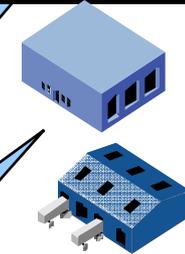
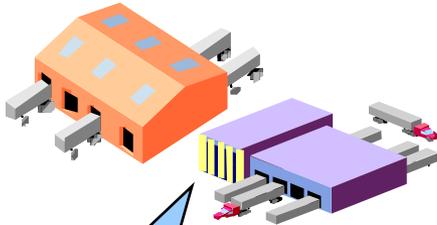
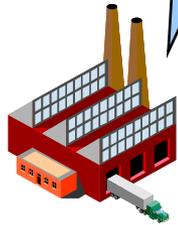
Manufacturers/Suppliers

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



Policy Scope

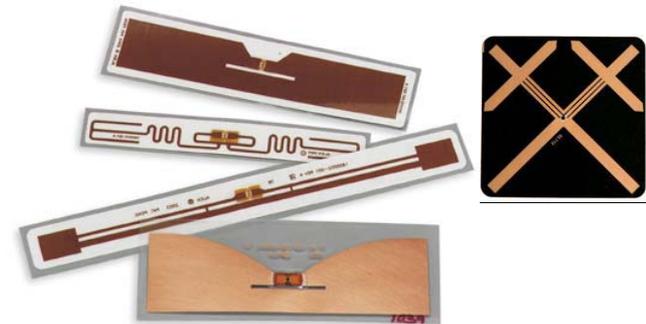
Active RFID – freight containers, air pallets

- *SAVI 433 Mhz readers*
- *SAVI 410 tags*
- *DoD tag data formats*



Passive RFID – case, pallet, UID item packaging

- *EPC std UHF readers*
- *EPC Class 0 & 1 std tags*
 - *Migration to EPC UHF Generation 2 std*
- *EPC and DoD tag data formats*





Active RFID Requirements

- **Freight containers, consolidated air pallets, large engine containers shipped to overseas DoD receiving points**



- **Tags are unique to the DoD and will rarely be a contractual obligation on suppliers**



Passive RFID Requirements

- **Cases and pallets shipped to key DoD receiving points (DDSP & DDJC) beginning Jan 2005**



- **Tags will be EPC-compliant and will be a contractual obligation on suppliers**



Passive RFID Initial Implementations

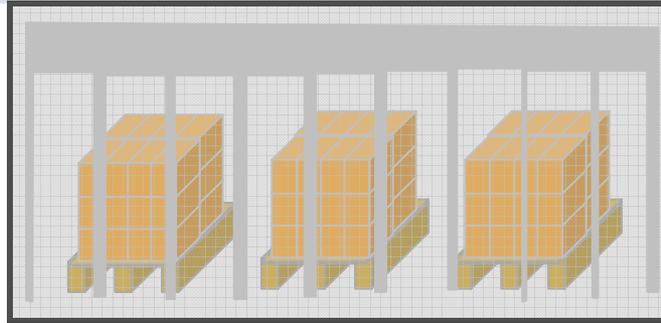
- Technology Demonstration
 - **Combat Feeding Global Asset Visibility**
- Operational Implementations
 - **FISC Norfolk Ocean Terminal**
 - **Individual Protective Equipment (IPE)**
 - **Strategic Depot to Operational Unit**
- Planned Implementations
 - **Electronic Military Shipping Label (MSL)**
 - **Strategic Depots**



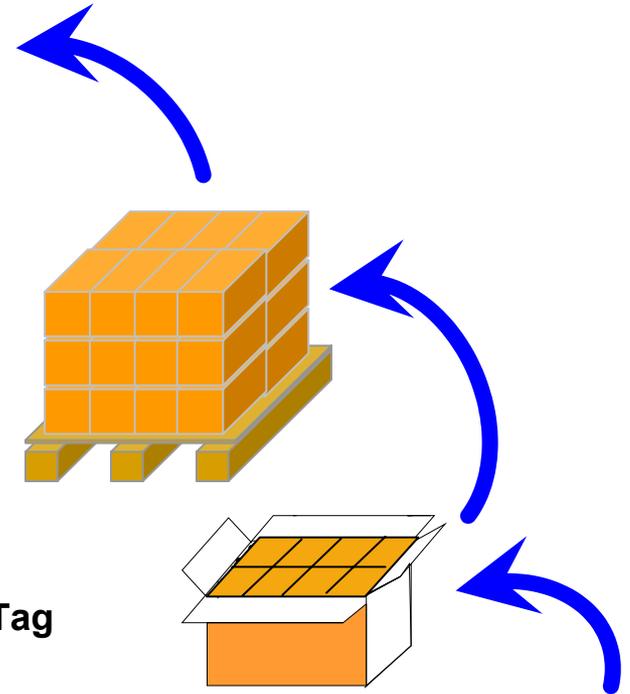


Complementary active and passive RFID

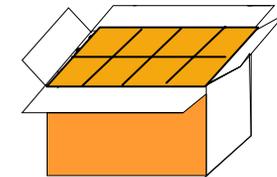
Active Container Tag
associated to a...



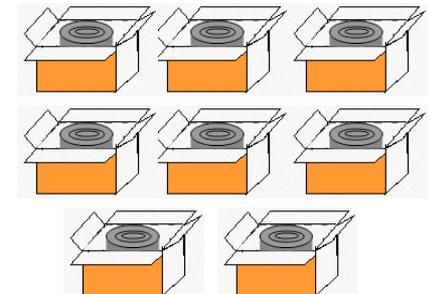
Passive Pallet Tag
associated to a...



Passive Carton Tag
associated to ...

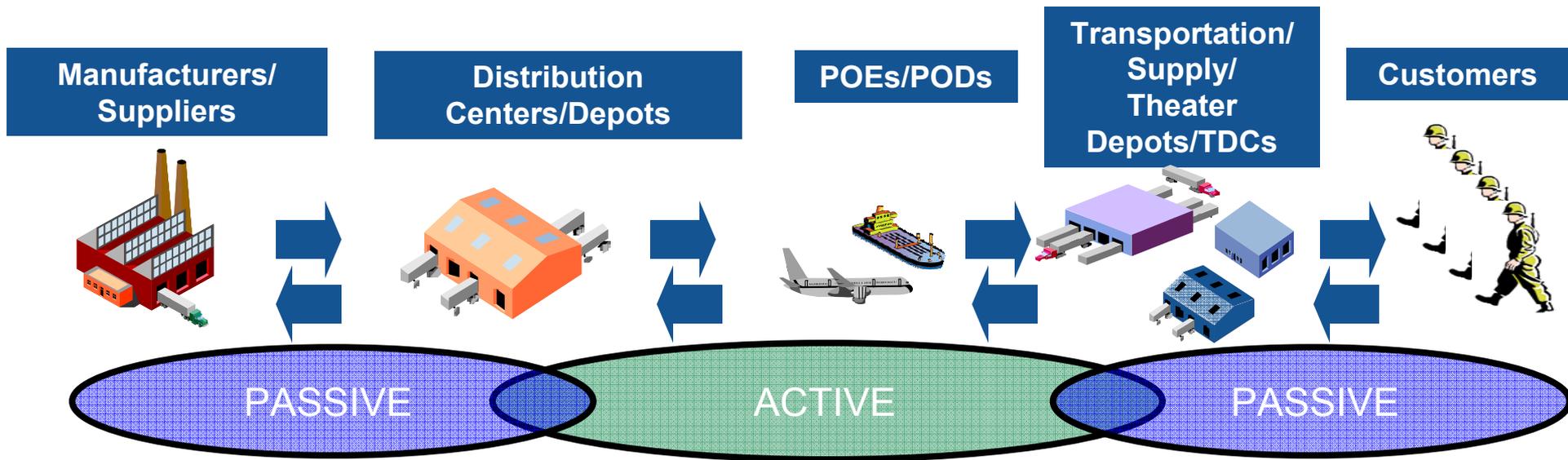


8 UID Packaging Tags
each with 1 associated
UID item





Complementary use across the logistics supply chain

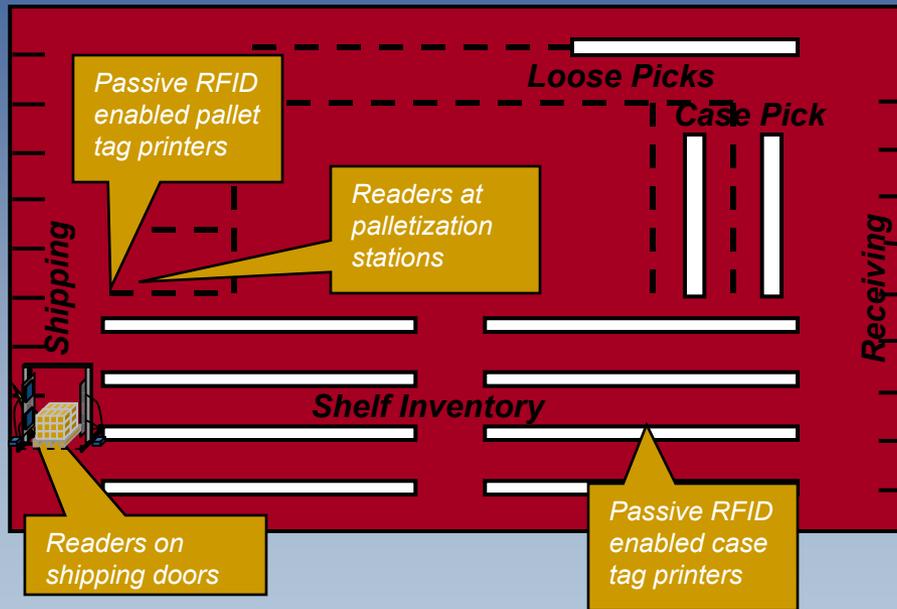




Distribution Center/Depot (Sustainment)



- 8 Overhead scanner read the passive RFID tag.
- 7 Loose/Broken picks are processed using a similar method.
- 6 Full cases are directed via passive RFID and placed on the conveyer.
- 5 Full case picking tags are printed out with human readable information and barcode on the passive RFID tag.
- 4 Shelf readers read individual units on the shelf and update inventory in real time. Replenishment is automatically initiated when shelf inventory reaches a target level.
- 3 Item/Case/Pallet information is used for putaway. Similar logic is used for replenishment and moves.
- 2 Items/Cases/Pallets are received by scanning the passive RFID tag and the AIS is updated.
- 1 An active RFID tag captures arrival at the gate.
- 11 Containers, 463Ls, or pallets are shipped by reading the RFID tag and the AIS is updated.
- 10 A passive RFID tag is printed and attached to the pallet. If the pallets are placed on a 463L or in a container, an active RFID tag is produced and attached.
- 9 Cases are sorted according to the pallet indicated. Readers at palletization stations read the passive RFID as the cases are being palletized. Items/Cases are aggregated to the pallet.





Implementation Dates

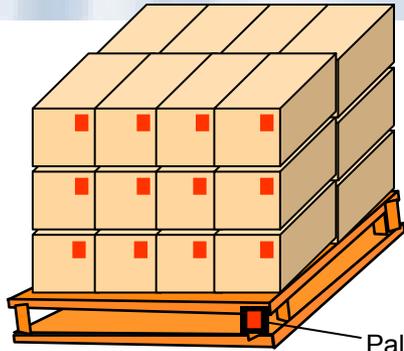
- Active RFID – Operational; Implementation Continuing



- Passive RFID
 - DoD – Implementation underway now
 - Suppliers – Effective Jan 2005 according to the *Passive Supplier Implementation Plan* published in July 30, 2004 policy

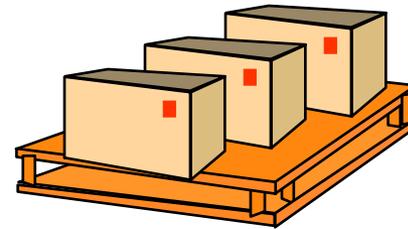


Implementation Plan considers level of packaging

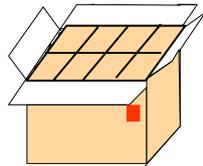


Palletized Unit Load Tag
YES – January 1, 2005 - 2006

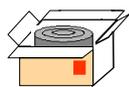
Pallet tag



Shipping Container
YES – January 1, 2005 - 2006



Exterior Container
YES – January 1, 2005 - 2006



UID Item Unit Pack*
No – January 1, 2005 - 2006
YES – January 1, 2007

*If the UID Packaging is also an External Container or a Shipping Container, it will have an RFID tag.



Implementation Plan considers commodities

Commencing January 1, 2005

- > Class I Subclass – Packaged Operational Rations & Packaged Food
- > Class II – Clothing, Individual Equipment, Tools, & Administrative Supplies
- > Class VI – Personal Demand Items
- > Class IX – Repair Parts & Components

Commencing January 1, 2006

- > Class I – Subsistence & Gratuitous Health & Comfort Items
- > Class III – Packaged Petroleum, Lubricants, Oils, Preservatives, Chemicals & Additives
- > Class IV – Construction & Barrier Equipment
- > Class V – Ammunition of all types
- > Class VII – Major End Items
- > Class VIII – Medical Materials



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

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



Passive RFID Tag Data

> **Acceptable EPC tags:**

- Class 0 64-bit read only
- Class 1 64-bit read-write
- Class 0 96-bit read only
- Class 1 96-bit read-write
- UHF, Gen 2 (when available - will announce transition plan)

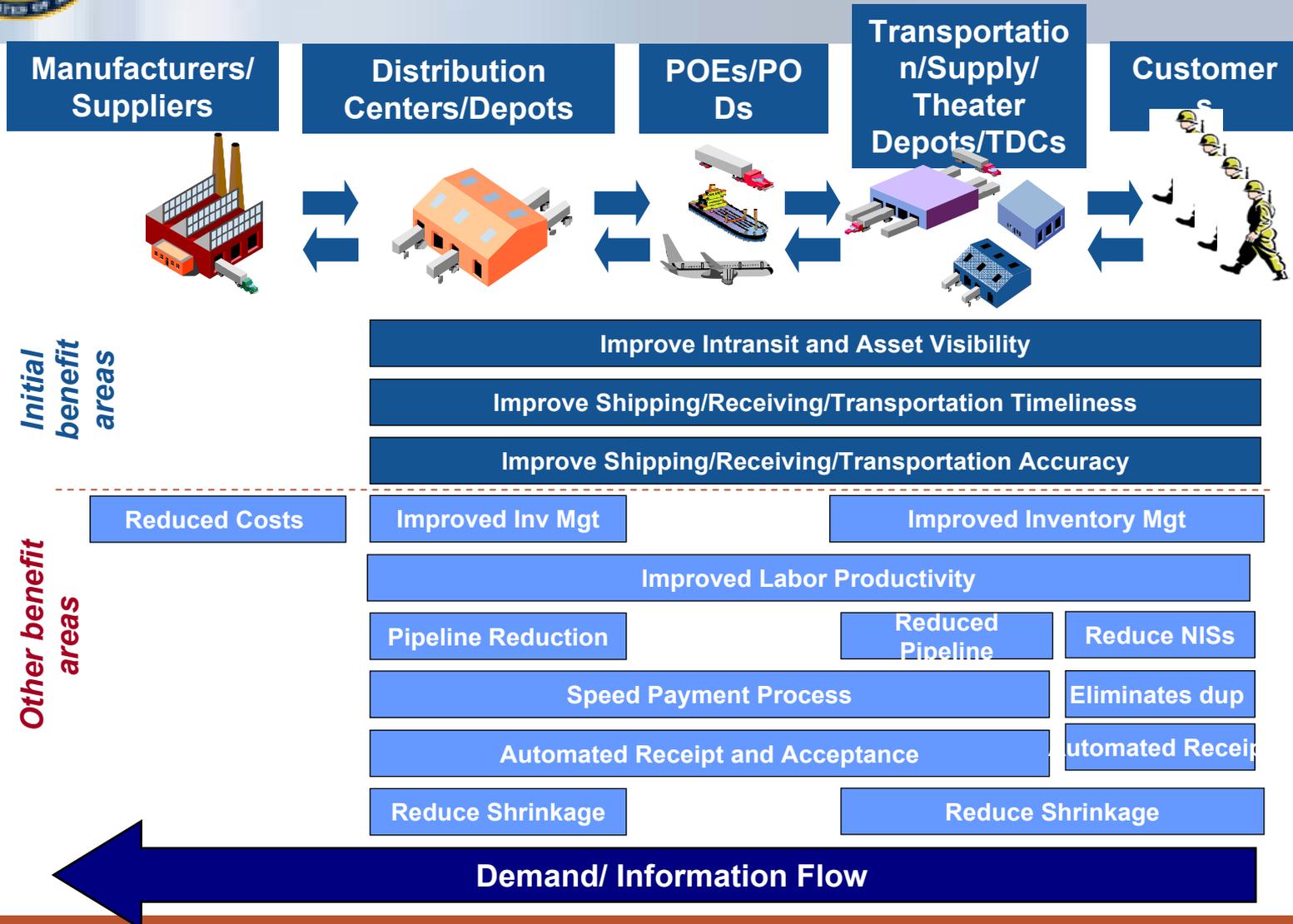
> **Acceptable tag data constructs:**

- Serialized Global Trade Item Number (SGTIN)
- Global Returnable Asset Identifier (GRAI)
- Global Individual Asset Identifier (GIAI)
- Serialized Shipment Container Code (SSCC)
- DoD construct

DoD will only accept EPC compliant technology



Benefits across the supply chain





DFAR Clause Details

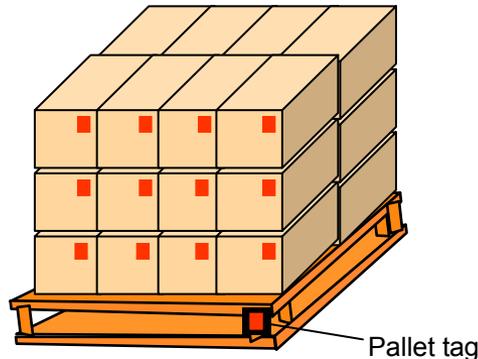
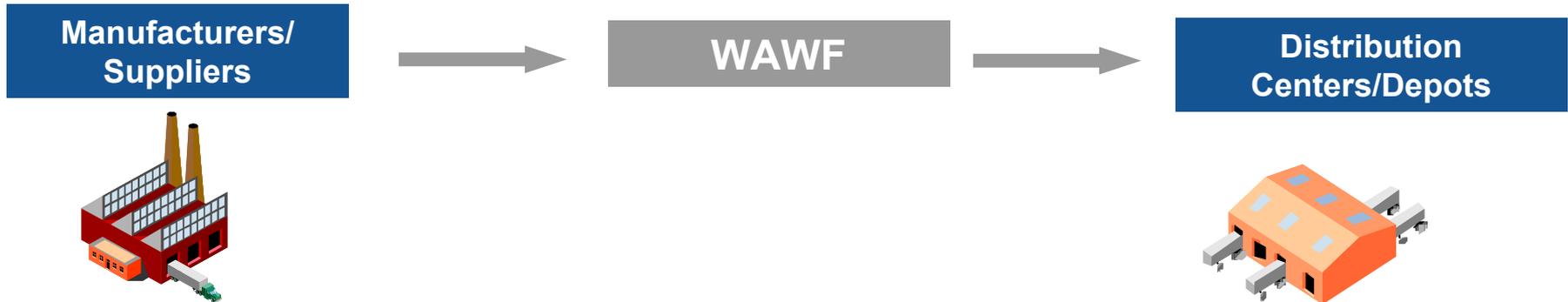
- **Two Major Requirements for Suppliers**
 - Passive Tagging at the case, pallet, UID item packaging level in accordance with the Implementation Plan
 - Advance Ship Notice (ASN)
- **DFAR clause references the MIL-STD 129 for implementation details**
 - Definitions
 - Tag Data Standards
 - Tag Placement
 - Performance Requirements
- **A Supplier Guide that contains information that details requirements for compliance is located at www.dodrfid.org/supplierguide.htm**



Advance Shipment Notice (associate RFID/material)

- EDI 856
- UDF/FTP
- Web page form

Advance Shipment Notice



Advance Shipment Notice 856 will be a transportation based transaction

- Pallet
- External Container
- CLINs



Next Steps

- **Publish proposed DFARS Rule for passive RFID**
- **Issue final DFARS Rule**
- **Begin implementation of passive RFID technology –
Jan 2005**



Back to the Future

“I think the industry has sold itself on a program that offers so little return that it simply won’t be worth the trouble and expense”

A Midwest Grocery Chain Executive discussing the potential of the barcode in 1975



The End Game



*Ubiquitous, cost-effective capability
to project and sustain power.*



BACK UP



UID vs RFID

	UID	RFID
Marking	Item	Packaging
Technology	2D Data Matrix	EPC RFID tag
Purpose	Life cycle data visibility	Supply chain receipt/track
Threshold	>\$5000, some exceptions	NONE
Implementation	January 1, 2004	January 1, 2005

Separate but integrated initiatives
Different technologies
Different business rules