

ON TIME SOURCE DATA SOLUTIONS



pmJ-AIT
PRODUCT MANAGER
JOINT-AUTOMATIC IDENTIFICATION TECHNOLOGY

Product Manager Joint-Automatic Identification Technology

John Waddick

One day of pipeline = \$74.7M
Annual value pipeline = \$27.3B



1.75M air shipments
208K S/T air cargo

SKUs - 4.4M

Orders - 25M annually



During Operation Desert Storm, the United States moved more than 40,000 containers to the theater of operations. With a paper-based supply system and that many containers in theater, the biggest bottleneck in the logistics pipeline occurred where the supplies came off the ships. **“More than half of the cargo containers in theater were filled with ‘mystery’ items,”** said Corrina Panduri, a project leader with the Product Manager, Defense-Wide Transmission Systems. **“Nobody knew where these items — including more than \$2.7 billion in spares — were supposed to go.”**

Deployable Communications System Reduces Port Cargo Confusion by Robert Fowler and Stephen Larsen
http://www.almc.army.mil/alog/July_Aug_2003.pdf

Desert Shield/Desert Storm:

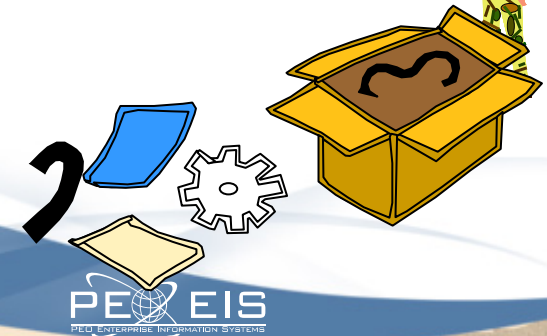
- Shipped 42,000 containers, opened 22,000+ to find what was in them.
- Manual input source data
- Limited or No Asset and In-Transit Visibility
- Re-ordering of supplies not received
- Little or No Connectivity
- Stovepipe STAMISs
- Batch Processing
- "The Iron Mountain"
- Critical GAO Reports



Then
1990-91



Now
2003



Active RFID – freight containers, air pallets

- *SAVI 433 Mhz readers*
- *SAVI 410 tags*
- *DoD tag data formats*
- *Minimum read range 300 ft*



Passive RFID – case, pallet, UID item packaging

- *EPC std UHF readers (Maximum read 15 ft)*
- *EPC Class 0 & 1 std tags*
 - *Migration to EPC UHF Generation 2 std*
- *EPC and DoD tag data formats*

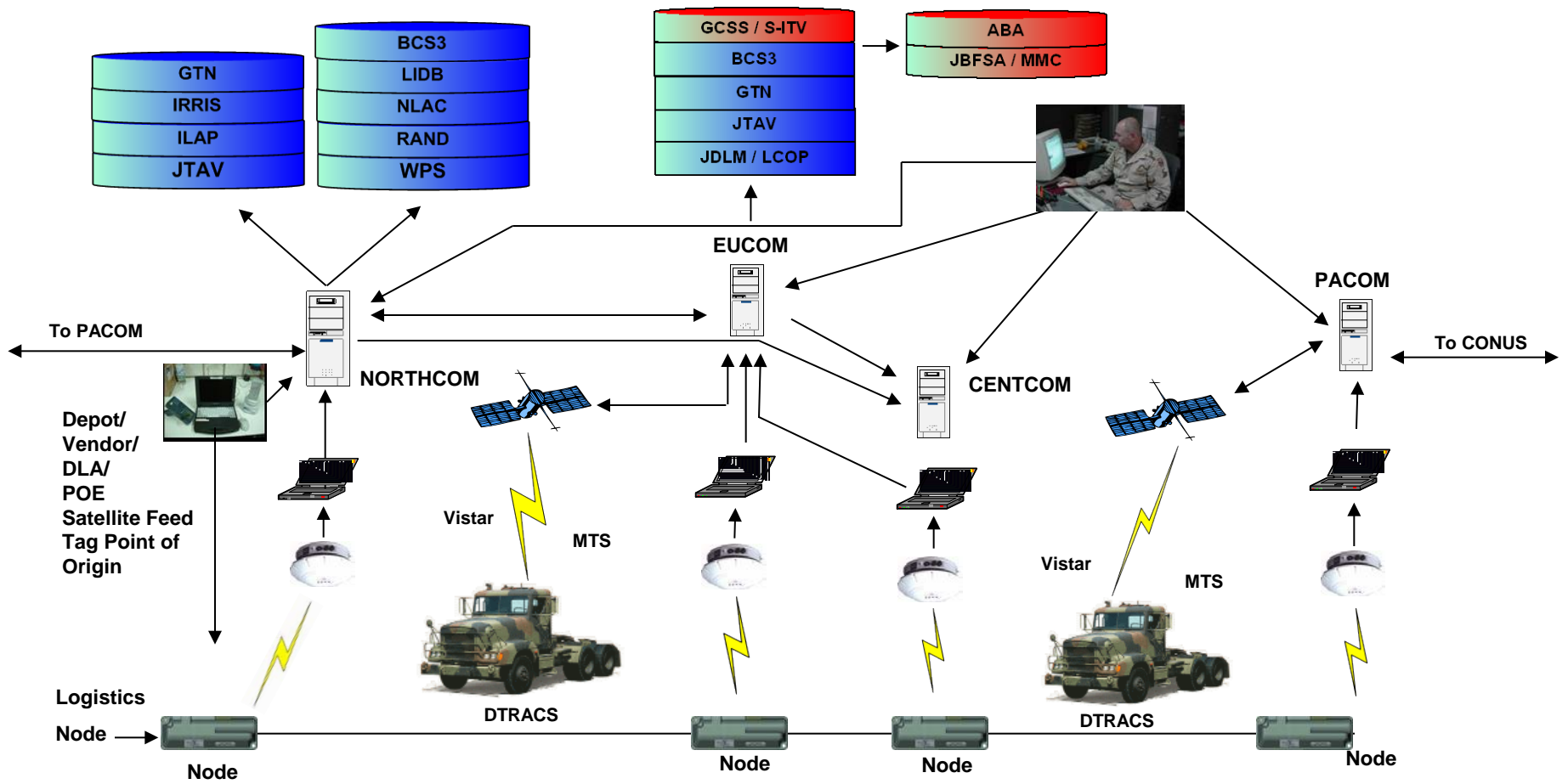


RFID Global ITV Infrastructure



RF-ITV Operational View 1 (OV-1)

High Level Operational Concept Graphic



LEGEND

-  Customer System
-  Local ITV Workstation
-  Military User
-  Electronic Data
-  Satellite
-  Read/Write Station
-  Logistics Node Interrogator
-  ITV Server
-  RF Tag

pmJ-AIT In-Transit Visibility Via Web ITV Server Query

LICENSE PLATE

LEAD TCN: SW31239008D60 XXX
 POE: DOV
 CONSIGNEE: W55XGJ
 HAZMAT: X
 FREE TEXT: WGT 03025 CUBE 0402

CONTAINER: TJ607
 POD: KWI
 CONSIGNOR: SW3123
 TP: 1

Todays Tag Summary - Fri Jan 8 17:59:18 GMT 1999

TAG#	DTG	INTERROGATOR DESCRIPTION	EVENT
39723	08-JAN-99	17:42:01 NEW CUMBERLAND AMS BURN - SUSQ	WRITE
40028	08-JAN-99	17:33:01 NEW CUMBERLAND AMS BURN - SUSQ	WRITE
54317	08-JAN-99	17:29:00 574 SUPPLY CO MANNHEIM GE	CHOKE
62805	08-JAN-99	17:29:00 574 SUPPLY CO MANNHEIM GE	CHOKE

Commodity for Tag 60398

DOC	NSN	NOMEN	RIC LIN	QTY	UOI
W55XGJ90060124	4720011547116		SAC	00001	EA
W55XGJ83620838	4010012044876		SAG	00002	EA
W55XGJ83640124	3040010743489		BR4	00001	EA
W55XGJ82970059	6130014068978		BY6	00003	EA
W55XGJ83620438	5310014126360		SG2	00010	EA
W55XGJ83620439	5310014126360		SG2	00010	EA
W55XGJ83620440	5310014126360		SG2	00010	EA
W55XGJ83620441	5310014126360		SG2	00010	EA
W55XGJ83620442	5310014126360		SG2	00010	EA
W55XGJ83630235	2920013376933		SRC	00001	EA
W55XGJ82890084	6130014068978		BY6	00003	EA
W55XGJ99930103	4140006788443		BR4	00001	EA
W55XGJ90030005	2590000347624		BR4	00001	EA
W55XGJ90060287	3455002773556		SAG	00001	CL
W55XGJ90060176	2940012808419	FILTER ELE	S9C	00002	EA
W55XGJ83570234	5331005841038	O-RING	S9I	00001	EA

Data from interrogator

Data from Tag

A “Disruptive” Requirement?

USCINCCENT MACDILL AFB FL R 311340Z JUL 02

- “EXISTING GLOBAL IN-TRANSIT AND TOTAL ASSET VISIBILITY CAPABILITIES (GTN AND JTA) HAVE BEEN MARGINALLY SUCCESSFUL IN PROVIDING NEEDED CONTENT LEVEL VISIBILITY FOR SHIPMENTS.”

- “RADIO FREQUENCY IDENTIFICATION (RFID) TECHNOLOGY WHEN USED HAS PROVEN TO BE THE TOOL MOST SUCCESSFUL FOR CIRCUMVENTING CONTENT LEVEL DETAIL SHORTFALLS FOR OEF CONTAINERS AND PALLETS.

THIS COMMAND BELIEVES RFID OFFERS THE BEST POTENTIAL FOR IMMEDIATE IN-TRANSIT VISIBILITY AND SHOULD BECOME THE JOINT OPERATIONAL STANDARD FOR ALL SERVICES.”

- “GIVEN THIS FACT, USCENTCOM WILL REQUIRE ALL AIR PALLETS, CONTAINERS, AND COMMERCIAL SUSTAINMENT MOVING TO/FROM THE THEATER AND INTRA-THEATER MOVEMENTS TO BE TAGGED WITH RFID AT ORIGIN FOR ASSET AND INTRANSIT VISIBILITY TRACKING IN THE CJOA.”

- “COMMANDS, SERVICES, AGENCIES, AND COMMERCIAL VENDORS MUST TAKE IMMEDIATE STEPS TO ACQUIRE, INSTALL, AND IMPLEMENT RFID TAGGING CAPABILITY.”

- 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

Today

ACTIVE

Future

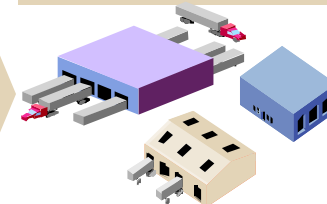
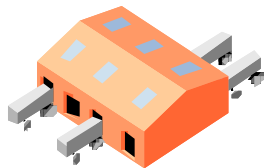
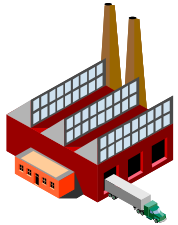
Manufacturers/
Suppliers

Distribution
Centers/Depots

POEs/PODs

Transportation/S
upply/
Theater
Depots/TDCs

Customers



PASSIVE

ACTIVE

PASSIVE

Enables
Shipping Node

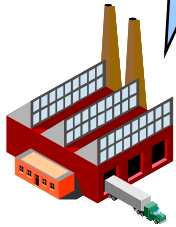
TAV / ITV
DoD Supply Chain Transportation

Enables
Receiving Node

pmJ-AIT An Enabler to the Integrated DoD Supply Chain

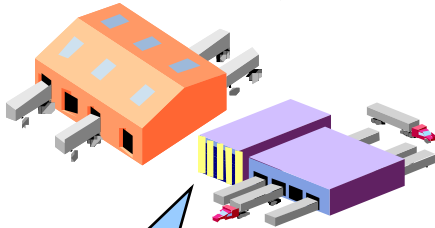
Cases/Pallets are labeled with passive RFID tags. Cases are associated to pallet

Manufacturers/Suppliers



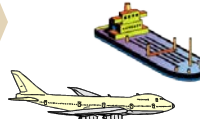
Cases/Pallets are read as they are received and **new shipments are labeled**. Orders are verified for accuracy

Distribution Centers/Depots/TDCs



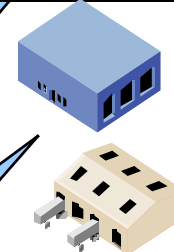
Cases/Pallets are associated with Active RFID to provide TAV.

Commercial/Military Carriers



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

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

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 (Includes Pharmaceuticals)

- Homeland Security and Customs
- Real-time tracking systems in depots/arsenals and manufacturing facilities.
- Continue expansion in the Department of Defense.

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