



Naval Supply Systems Command

Navy AIT & Asset Visibility Efforts A Comprehensive Plan Forward



***Presented by Kimberly Gray, Director IT Logistics-Naniq Systems
Contractor Support for NAITPO
September 23, 2009***

Ready. Resourceful. Responsive!



Automatic Identification Technology "AIT"

Asset
Visibility

It is a family of commercial technologies that provides a range of capabilities. It includes bar codes, radio frequency identification "RFID", smart cards, memory buttons, magnetic stripes, and AIT is not a system or a single product.

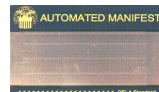
In-Transit
Visibility

Process
Improvement

USERS

SUPPLIERS

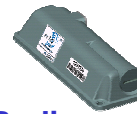
Linear/2 Dimensional
Bar Codes



Optical
Memory
Card



Hand Held
Readers



Radio
Frequency
ID



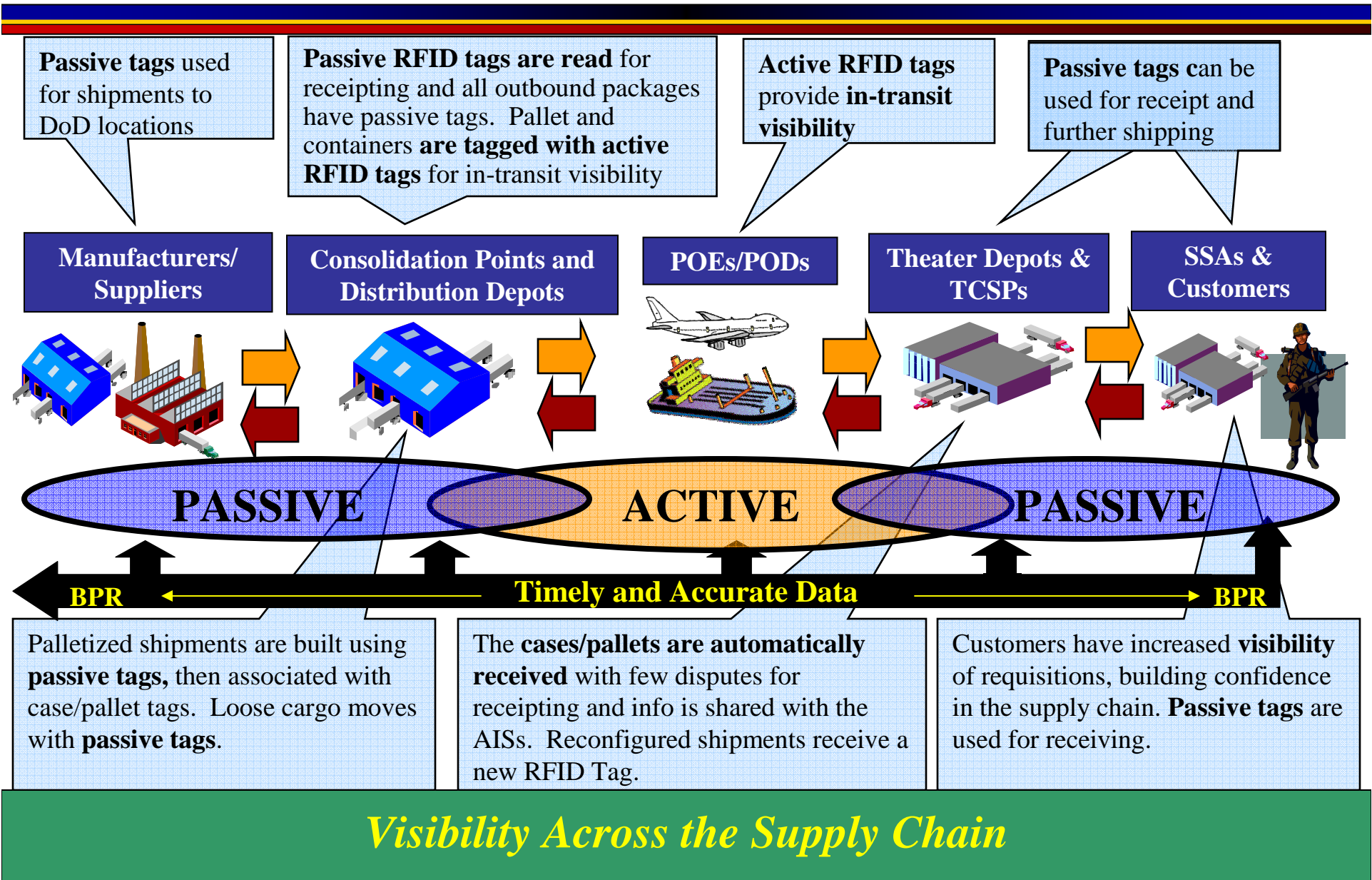
"Smart" Cards

Satellite
"Movement
Tracking"





DoD RFID Mission





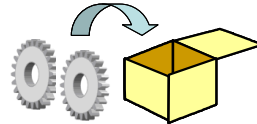
DoD AIT Layers

Layer 0 UID – Product Item



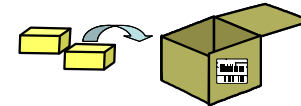
2D Matrix
Linear Bar Code

Layer 1 – Package



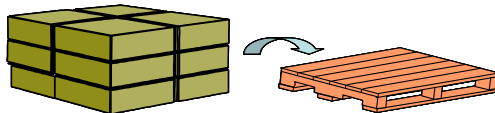
Passive RFID
2D/Linear Bar Code

Layer 2 – Transport Unit (cartons, boxes)



Passive RFID
2D/Linear Bar Code

Layer 3 – Unit Load (Warehouse pallet, tri-wall packaging, commercial fiberboard)



Passive RFID
2D/Linear Bar Code

Layer 4 – Freight Container (sea vans, 463L pallets with net)

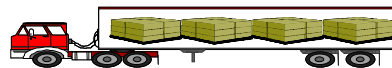


Active RFID License Plate
2D/Linear Bar Code

Baseline AIT

- Primary
- Back Up

Layer 5 – Movement Vehicle (truck, aircraft, ship, train)



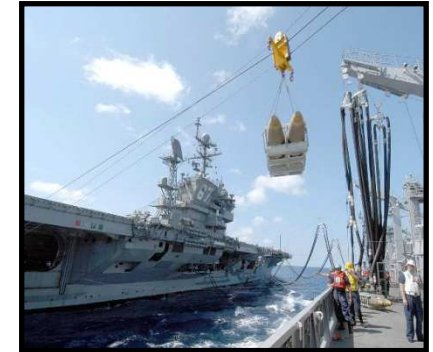
“Premium” AIT: Satellite or Cellular, Sensor Technology
Applied in addition to baseline for safety, security, perishable, location, content-level detail



The Benefits of Using AIT



- ◆ **Allows for:**
 - ◆ *Hands-off data capture*
 - ◆ *Human error reduction*



- ◆ **Resulting in improved**
 - ◆ *Instant visibility of assets*
 - ◆ *Timeliness and accuracy of shipping and receiving information*
 - ◆ *Flexibility and confidence in the DoD and Navy Supply Chain*



...and ultimately improved support to the warfighter ⁵



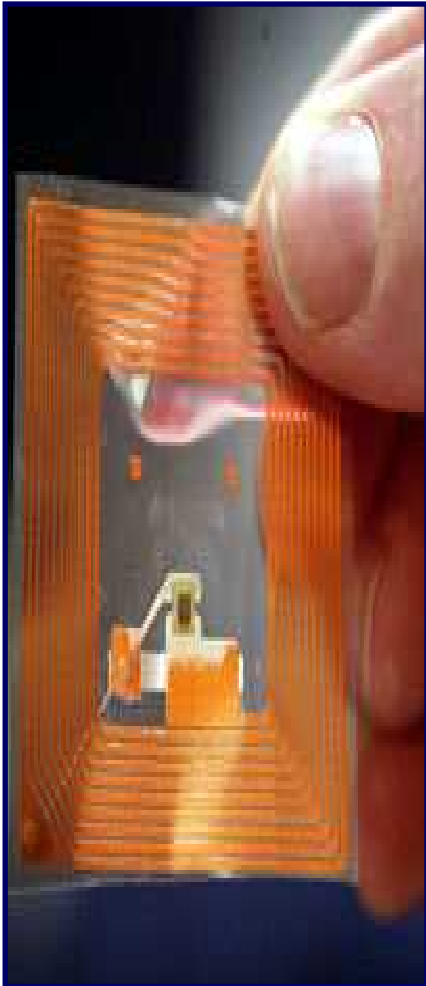
AIT is an enabler...

“...Radio Frequency Identification (RFID) will play a key role in achieving the Department’s vision for implementing knowledge-enabled logistics support to the warfighter...”



...but doesn't fix bad processes.

Benefits of pRFID

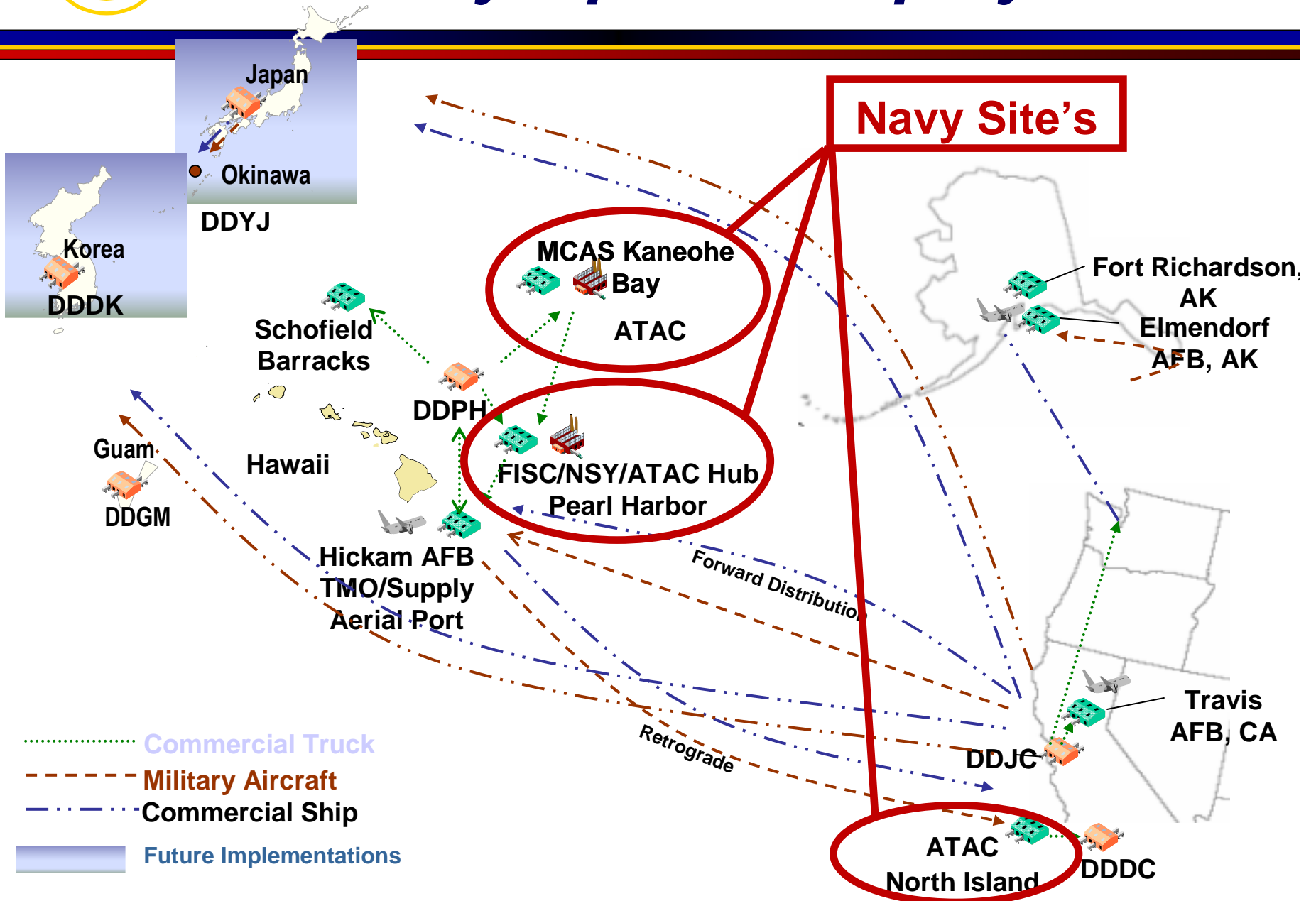


- ◆ pRFID tags can be scanned or read without the need for a 'line of sight'.
- ◆ pRFID tags can be 're-written' as opposed to barcodes, which are static once they are printed.
- ◆ pRFID tags are less likely to become corrupted or unusable due to dusty or wet environments.
- ◆ 350 Passive RFID tags (20¢) cost the same as 1 Active RFID Tag (\$70)





Today's pRFID Deployments





Tomorrows pRFID Deployments

Regional	w/in	AIS	Matrix
✓ Oahu		✓ eRMS	
✓ San Diego		✓ CAV	
✓ Norfolk		✓ MAT	
✓ Jacksonville		✓ R-Supply Force	
✓ East Coast USMC		✓ R-Supply NAS	
✓ Puget		✓ NERP	
✓ OCONUS		✓ ILMIS	

Size	Cost Est	Special Projects	Size	Cost Est
		Spec Opt	NA	
Small	\$55,653	MODTRA	NA	
	\$55,653			
	\$55,653			



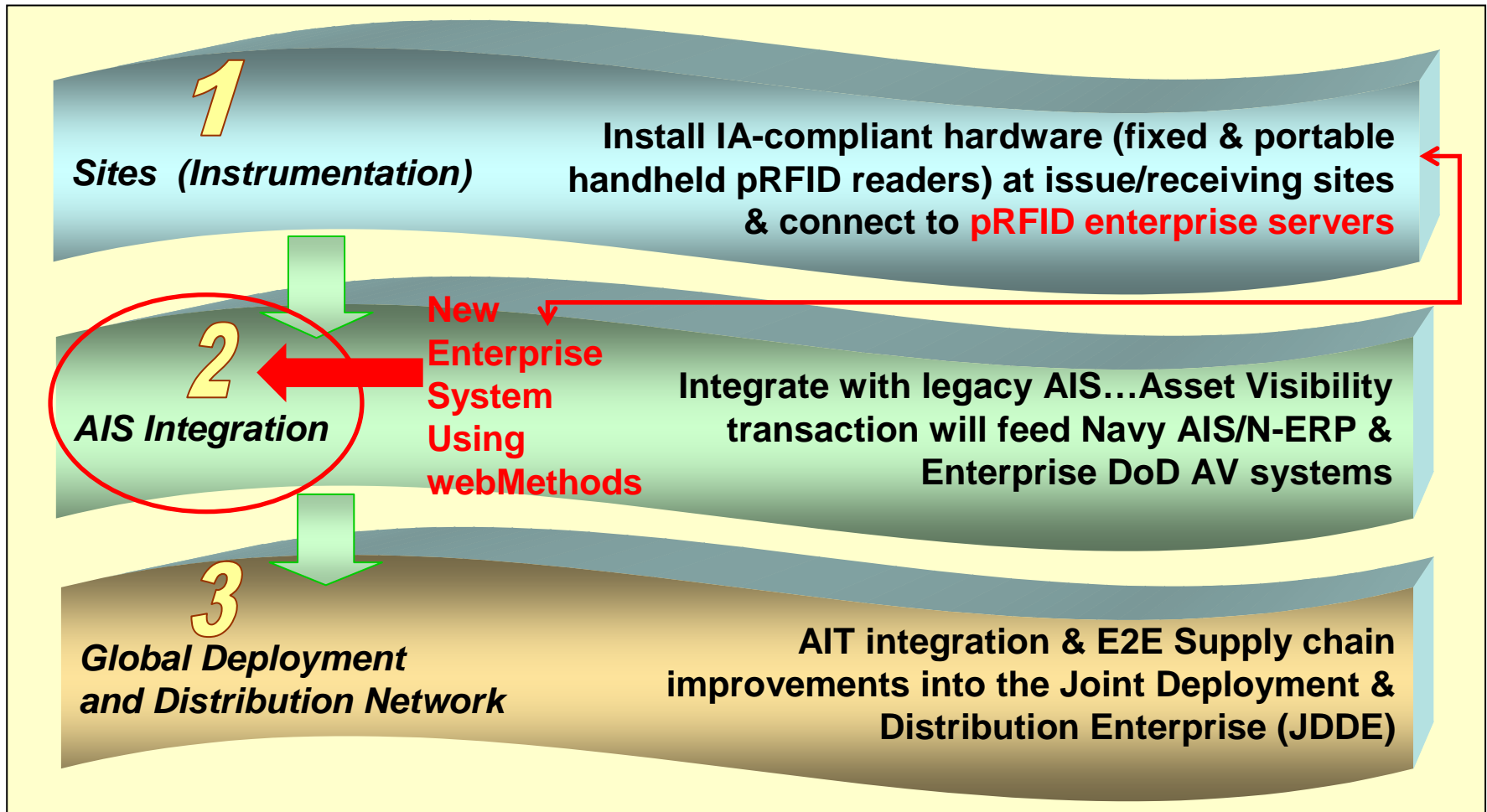
USMC East Coast	MALS-14 (Cherry Point)	V09114	Small	\$55,653				MALS-14 (Cherry Point)	V09114	Small	\$55,653		
	MALS-26 (New River)	V52841	Handheld	\$25,000				MALS-26 (New River)	V09167	Small	\$55,653		
	MALS-26 (New River)	V09167	Handheld	\$25,000				MALS-26 (New River)	V52841	Small	\$55,653		
	ERIC (Cherry Point)	W62653	Handheld	\$25,000									
	Sub Total			\$138,653							\$166,959		
	CAV												
	AIS Modifiers	ECAM											
	Modifications												
	Sub Totals			\$1,566,737				\$342,963			\$624,778		\$55,653
	Grand Total			\$2,940,137									

- FY08 Projects = 5 sites and 4 AIS integrations
- FY09 and beyond pRFID implementation target 20 in 2009 & 100+ sites each year after
 - ✓ 500 pRFID enabled sites in 5 years
- Implementing pRFID using an Enterprise approach
 - ✓ Reduces cost
 - ✓ Minimizes IA requirements
 - ✓ Eliminates site server requirements and reduces sustainment costs
 - ✓ Efficient implementation model for NERP candidate sites (Navy Enterprise System)

The Only pRFID Enterprise System in Industry today



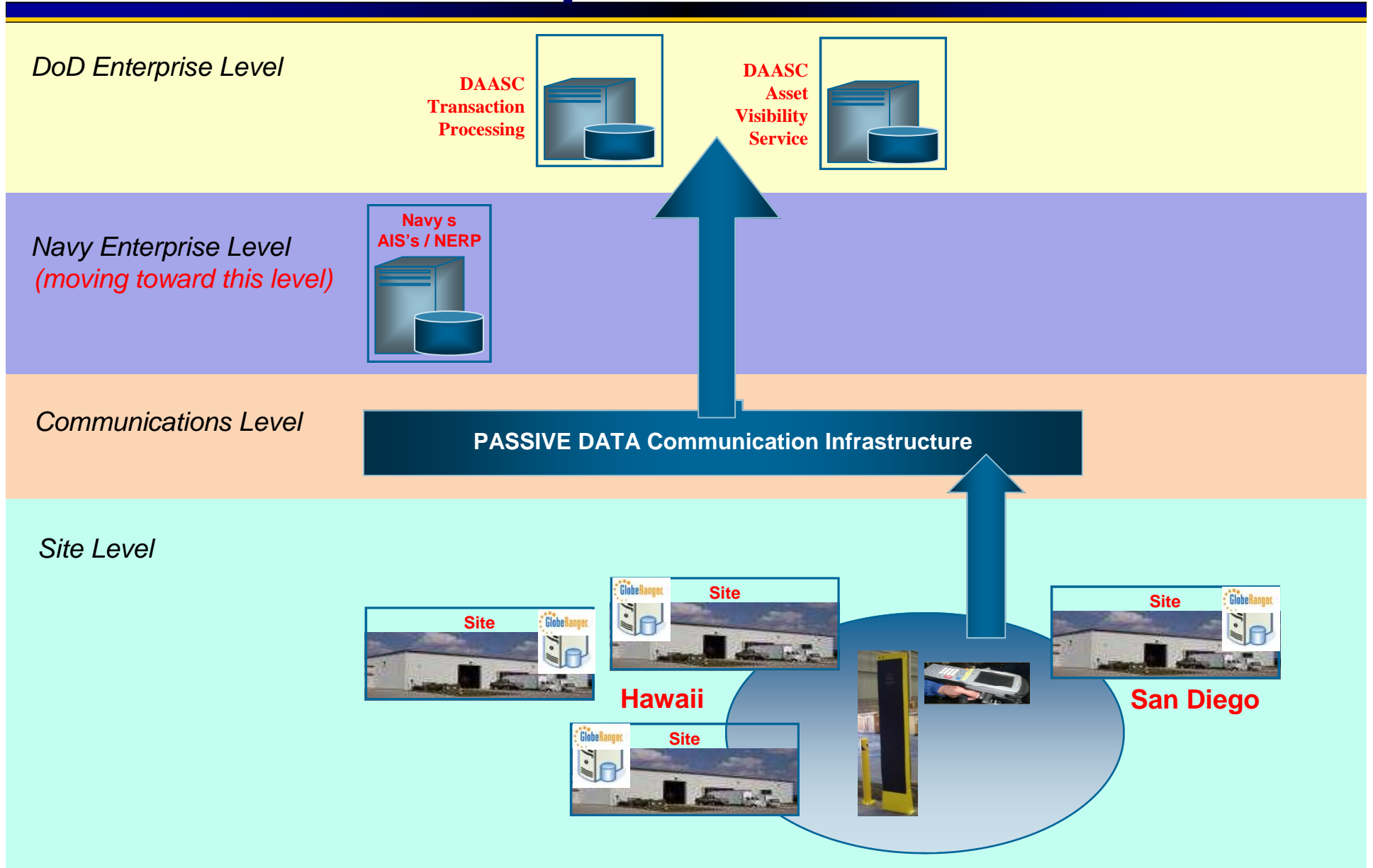
3-Tiered Deployment Approach



Aligning with DoD AIT CONOPS & pRFID Implementation Plan

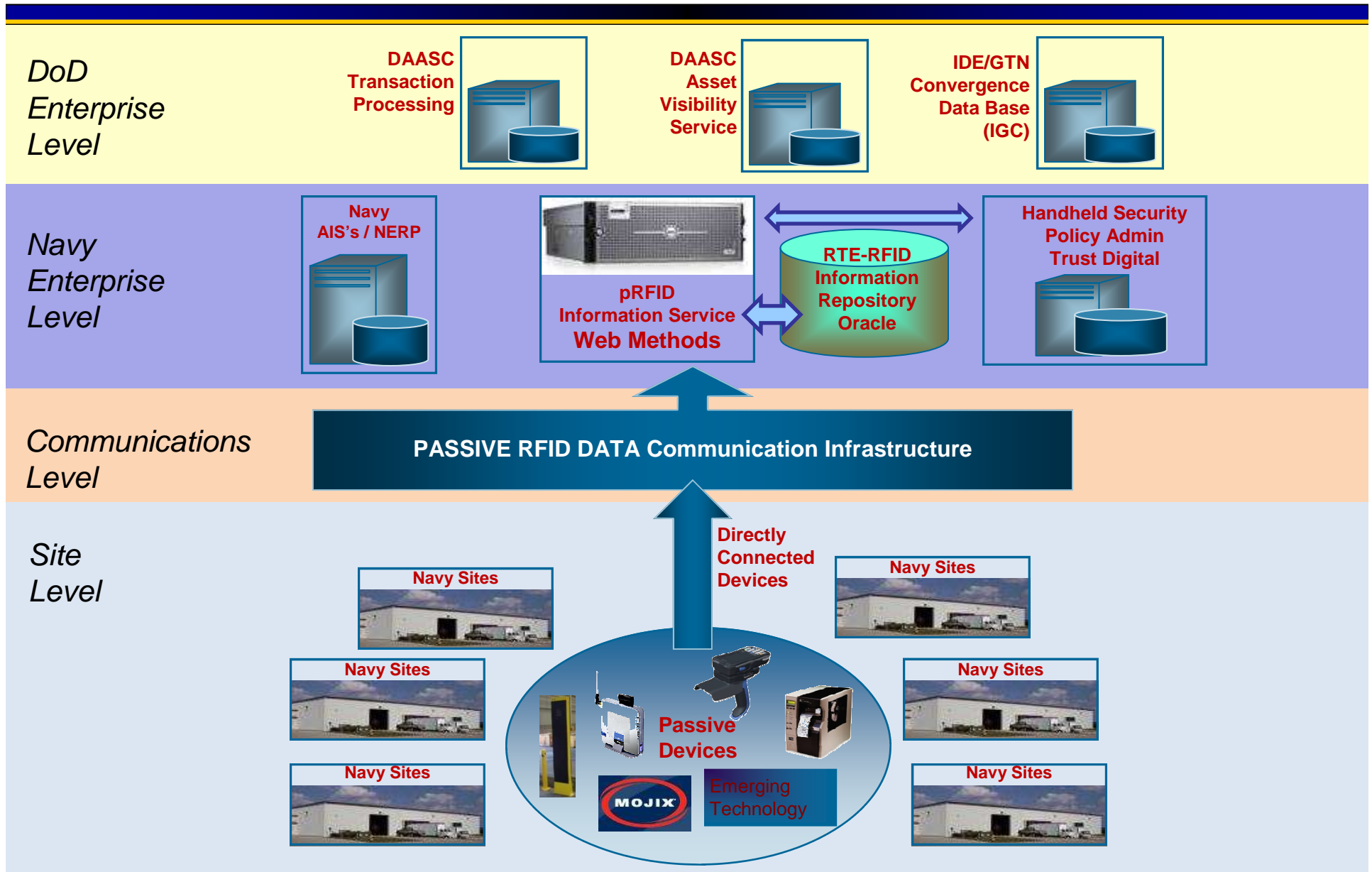


Previous Installed Navy pRFID Infrastructure





New Navy AIT Architecture

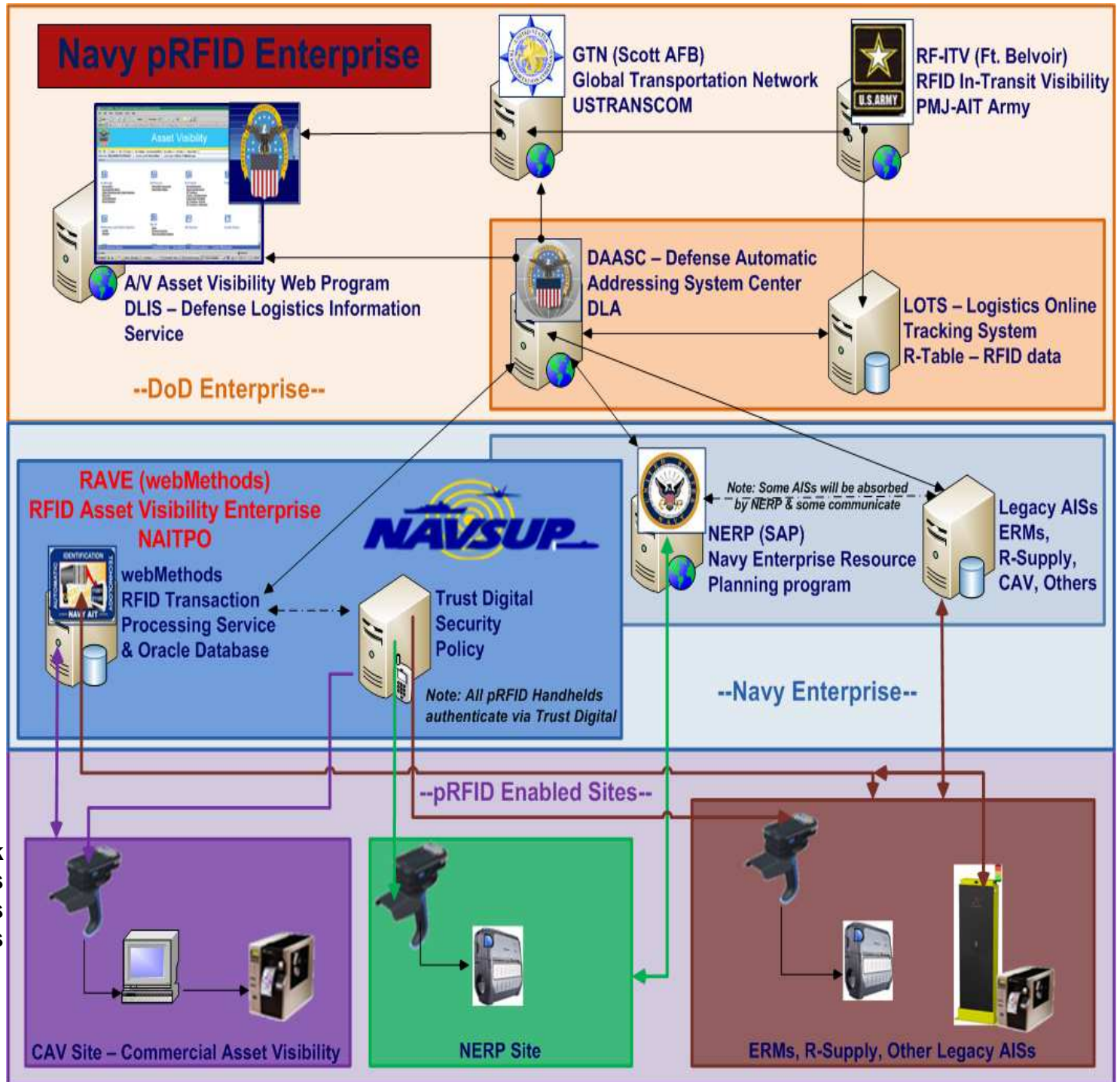


FUNCTIONS

- Asset Visibility
- Logistics Transaction Routing

- Process Receipts
 - Material Issues
- Condition Code Changes
- Systems Communication
 - Security Policy Admin
 - Mobile Handheld Application Service
 - Health Monitoring
 - Metrics Reporting
 - ASN Matching
 - Data Validation

- Real-Time Feedback
- Instant Notifications
- Hardware Communications
 - pRFID Reads

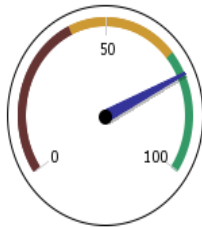




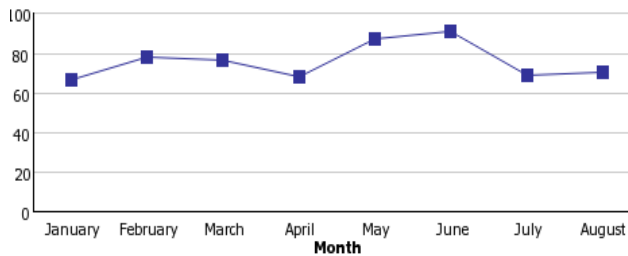
Delivering Metrics to OSD

Navy OSD Spiral One pRFID Metrics

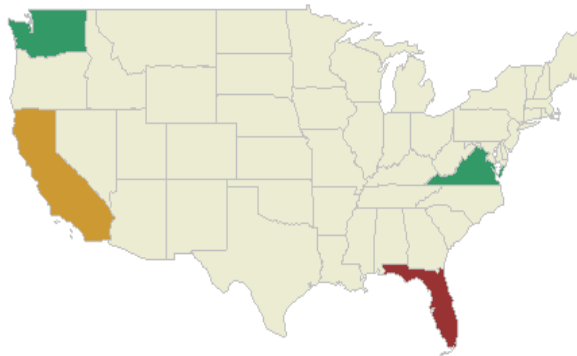
% of Total Shipments Enabled using pRFID



% of Total Shipments Enabled using pRFID



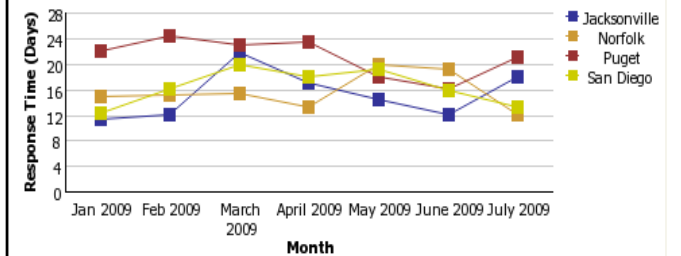
RFID Read Rate by Site



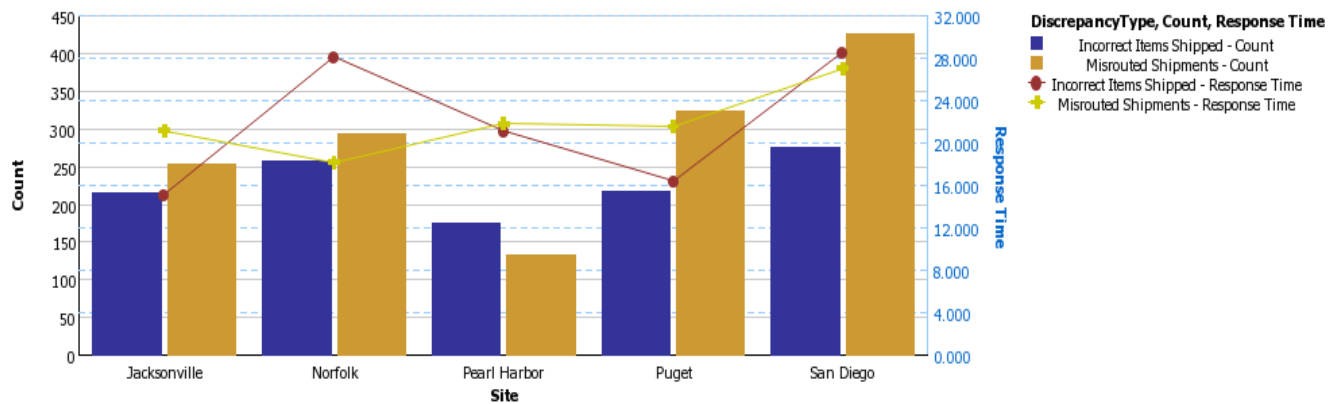
Logistics Response Time (Days)



Trending of LRT



of Discrepancies by Type by Site





The value of pRFID

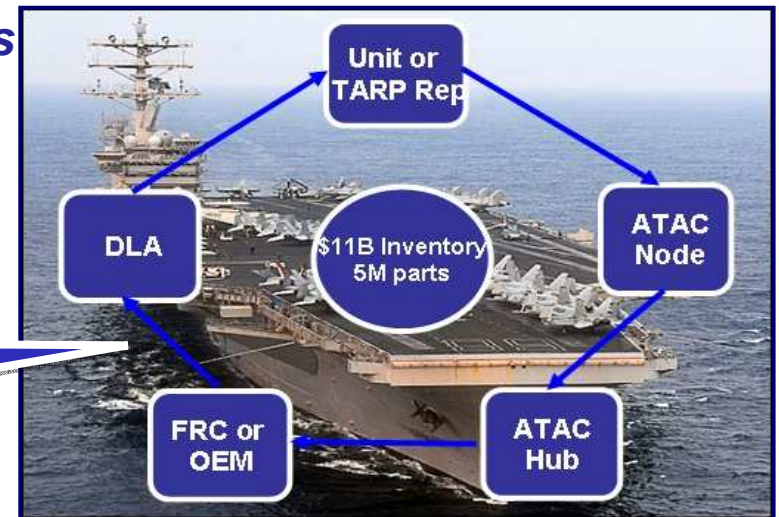
□ Primary pRFID Focus - Navy Repairable E2E Supply Chain

- *\$11B inventory of repairable spare parts*
- *Average part cost = \$2000 each*
- *No TAV and ITV improvements without feeding Navy AIS'*

□ pRFID Enabled E2E Supply Chain

- *TARP reps to passive tag retrograde*
- *ATAC sites pRFID enabled – both receipt and issue processes*
- *CAV sites pRFID enabled with wireless handheld devices*
- *FRC's RFID-enabled*
- *DD's RFID enabled by DLA*

1/2% better accuracy saves
\$1 Billion each year!





More value...

Reduction in
man-power for
receipts/issues

Contributing to
DoD A/V helps
find misdirected
material faster

Faster material
turn-around
allows ships/subs
deploy faster

Better inventory
accuracy
eliminates material
re-orders



Intermec CN4e pRFID Handheld Toolbox built for DoD/Navy

Deploying pRFID/Barcode handheld readers with the following capabilities.....

- ✓ Reads all standard 1D and 2D bar codes
- ✓ Optional RFID tag reader available
- ✓ Runs the Microsoft Windows Mobile 6 OS
- ✓ Accessories include long lasting batteries, trigger handles & belt holders
- ✓ RFID reader can be attached in seconds
- ✓ Able to support Afloat & Ashore
- ✓ Capable of supporting Ordinance
- ✓ 5-10 year supportable platform lifecycle
- ✓ Single platform that meets all requirements
- ✓ Information Assurance compatible (802.11g/I, DAR etc.)
- ✓ NMCI certified or certifiable
- ✓ Standard software support for RFID read processing (like fixed readers)
- ✓ CAC reader available (Bluetooth or attached/embedded) DISA approved
- ✓ Simultaneous radio support for 802.11g, Bluetooth, CDMA/GSM
- ✓ Trigger Handle
- ✓ Tag write/re-write capability



Different from Industry... DoD and Navy must overcome challenging Information Assurance requirements before deploying new technology!



New Ships and Requirements

Automating Stores Management

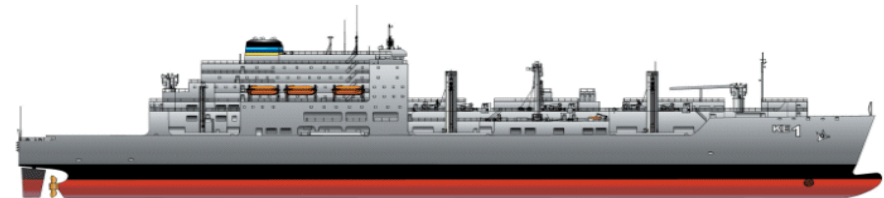
CVN 78 ORD. “A system shall be provided which is **automated to minimize personnel workload**; interfaces electronically with supply and ordnance inventory management systems...”



DDG 1000. “...Reducing ship’s crew size to 142 (Compared to 382 on DDG-51) is driving technology insertion and process change”



T-AKE ORD. “A system shall be provided for....**automated cargo load planning and inventory management control**...(the system) will incorporate current and emerging technology...(and) will interface seamlessly with Navy Cargo and ordnance....”



Our Approach

Consolidated
Storeroom
Management



Wireless
Handheld
Computing



RFID
Technology

Software driven...enabled by Wireless Data Collection



Navy Ordnance Challenges

Getting closer to meeting the challenges with Explosive Safety restrictions



- ✓ Navy-DoD defaulting to 2D bar code implementations for ordnance in the interim
- ✓ Today RFID is restricted onboard ships and ordnance ashore sites
- ✓ Current testing complete and waiting for results to deploy a commercial pRFID solution



Questions

