
Integrity - Service - Excellence

Radio Frequency Military Shipping Label Update



U.S. AIR FORCE

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AF Passive RFMSL Overview

- **Short Summary:** The initial implementation will demonstrate the ability of a prototype EPC (Electronic Product Code) Class 0 passive RFID Military Shipping Label (MSL) to automatically record transportation event transactions and associate them to content level detail in Department of Defense (DOD) In-transit visibility system with minimal human intervention.
- **Location(s):** Multiple Continental United States (CONUS) AF and Defense Logistics Agency (DLA) sites for tag creation, Dover-Ramstein consolidation/airlift, multiple Outside Continental United States (OCONUS) destinations

Goals and Benefits

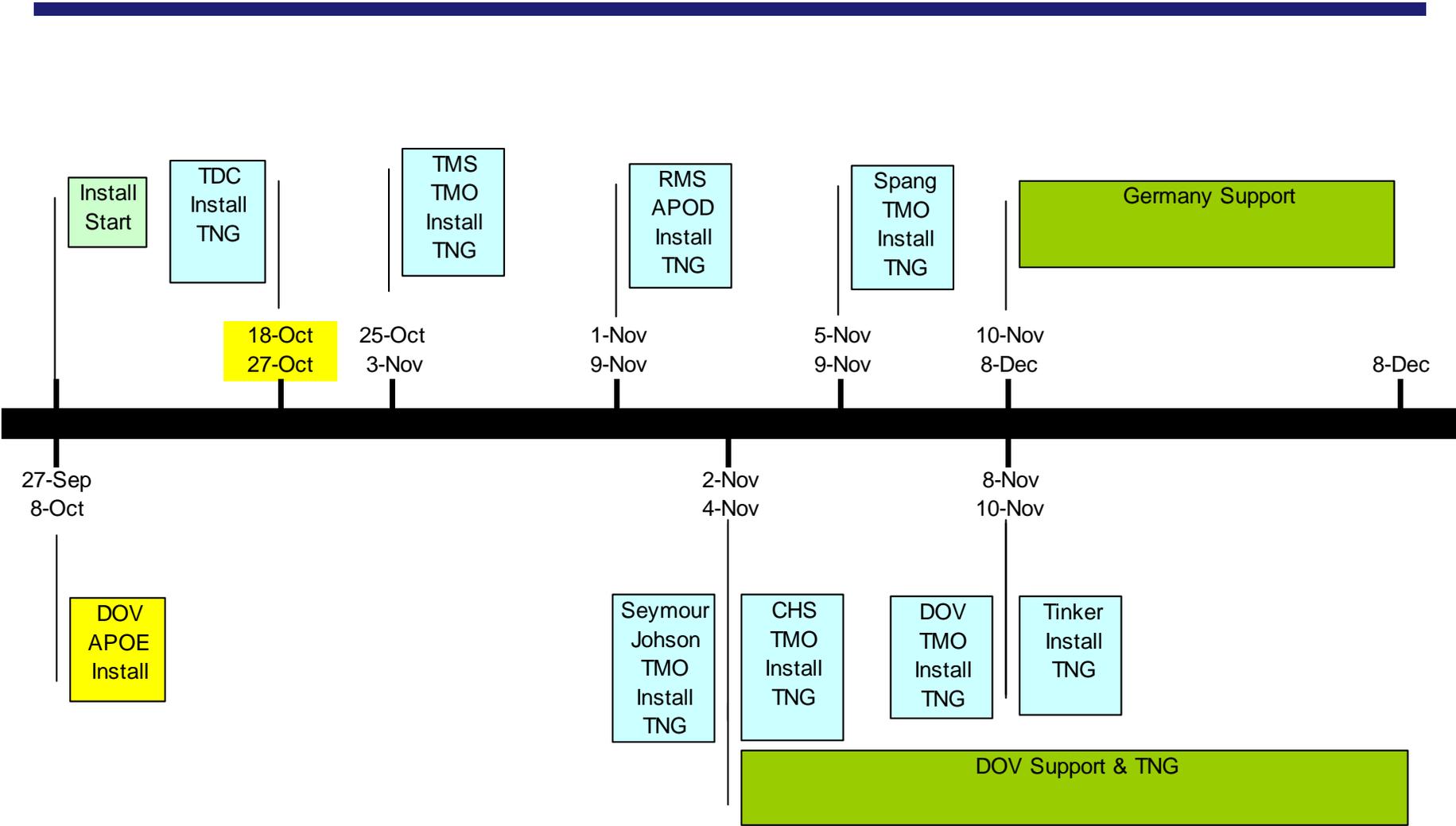
■ Goals

- Demonstrate value of passive RFID in the Defense Transportation System (DTS)
- Assist Office of the Secretary of Defense (OSD) in shaping/validating Passive RFID policy
- Improve efficiencies in in-transit (ITV) processes
- Enable mapping of content level data to shipments within existing ITV systems

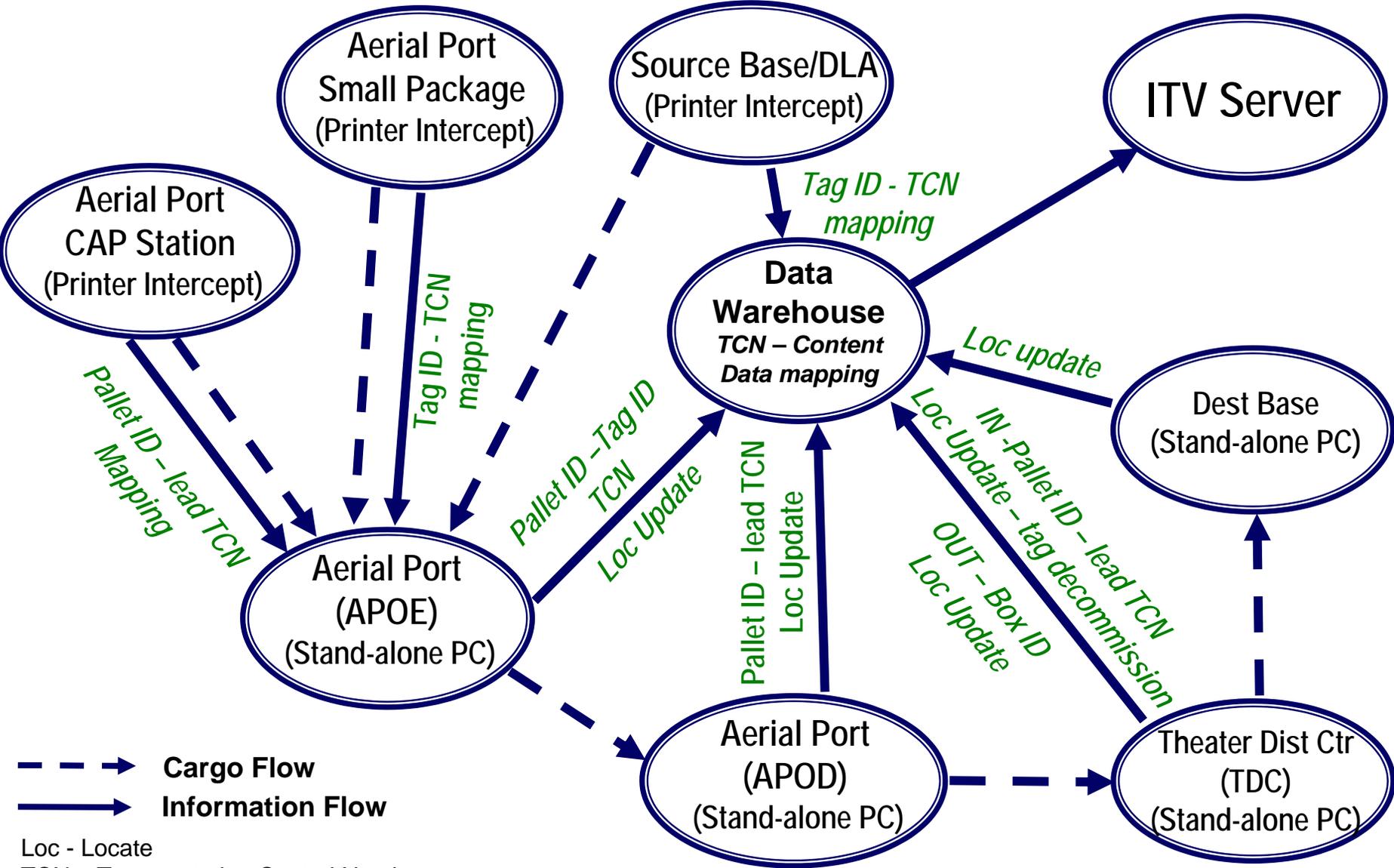
■ Benefits

- Analysis of passive RFID data quality and integrity
- Validation of passive RFID data capture processes

Timeline



Short Term Architecture



- - - - - → **Cargo Flow**
————— → **Information Flow**

Loc - Locate
 TCN - Transportation Control Number

Hardware

Qty	Product ID	Product Description
22		Matrics AR 400 Reader (US specs)
18		Matrics AR 400 Readers (EU specs)
102	ANT-GP-HP	Matrics Hi-Performance GP Area Antenna
102		Matrics LMR-240 15' cable (pair)
102	ANT-MT-STD	Matrics Standard Duty Mounting Bracket
14	ANT-GP-STD	Matrics Standard GP Area Antenna
8		Intermec PM4i Printer
1		Savi Hand Held Interrogator (HHI)
1		Psion Teklogix Hand Held Interrogator (HHI)
2		HHI Comm Dock
10		Passive Tag Label Stock (1000 per roll)

Inbound
Cargo

Cargo
Receipt

Bay
Locations

Pallet
Build

Lift

Split -
Re-label

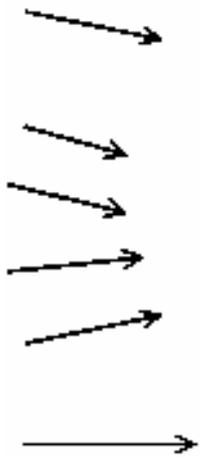
Bay
Inventory

Pallet
Build
Area

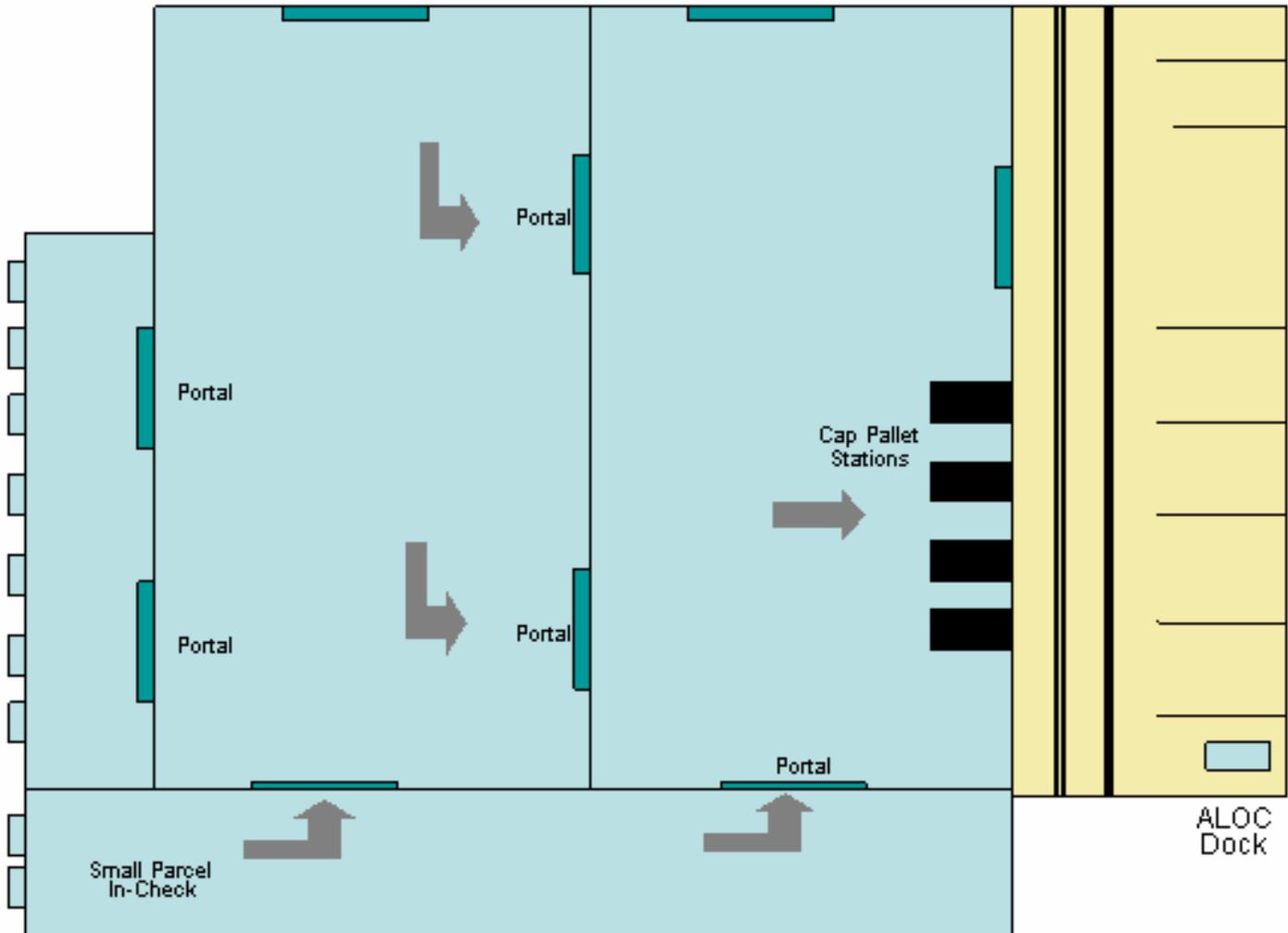
CAP
Pallet

Grid
Storage

General Cargo
Truck Dock



Small Parcel
Truck Dock



ALOC
Dock



















28 SICHERHEITSREGELN
für den Umgang mit Arbeitstagen



STOP
Sound Horn

No Smoking
Rauchen Verboten





Passive RFID Tag Summary

- 1005 passive tags written during initial implementation
 - 676 RF enabled shipping labels
 - 329 RF enabled pallet placard labels



RFID Shipping Label Tag Stats

- Total RFID shipping label tags printed - **676**
 - RFID shipping label tags read at least one time in the passive RFID enabled network **630 (93%)**
 - RFID shipping label tags read prior to consolidation at APOE (Dover AFB) – (expected/read) **676/517 (76%)**
 - RFID shipping label tags read while palletized
 - Both Ramstein APOD and TDC (expected/read) **676/442 (65%)**
 - Ramstein APOD (expected/read) **676/457 (68%)**
 - TDC ((expected/read) **676/554 (82%)**
 - RFID shipping label tags with destination after deconsolidation (Ramstein and Spangdahlem TMOs) **173**
 - Ramstein AB (expected/read) **136/52 (38%)**
 - Spangdahlem AB (expected/read) **37/14 (38%)**



RFID Pallet Placard Label Tag Stats

- Total RFID pallet placard label tags printed **329** (covering 186 pallets)
 - RFID pallet placard label tags read at least one time in the passive RFID enabled network **245 (74%)**
 - RFID pallet placard label tags read while palletized
 - Ramstein APOD (expected/read) **329/201 (61%)**
 - TDC (expected/read) **329/117 (36%)**
 - Both Ramstein APOD and TDC (expected/read) **329/106 (32%)**



Other Peoples' RFID Passive Labels

- Unique RFID enabled tag IDs read by the RFMSL initial implementation infrastructure that **were not** generated by the RFMSL equipment **(22,941)**
 - APOE (Dover AFB) **(17,019)**
 - APOD (Ramstein AB) **(1,416)**
 - TDC **(3,374)**
 - TMO (Ramstein AB) **(1,953)**
 - TMO (Spangdahlem AB) **(184)**



Observations

- There was no impact on the existing business processes of the TMOs, DLA depot, Aerial Ports or TDC.
 - Small package line had small impact at the APOE (Dover AFB)
- Without changes to the current business processes, passive RFID is not going to be read 100% of the time.
- Passive RFID will become another source of data. It will augment, not replace, current ITV data.
- Not only were RFMSL and CAP pallet passive tags read with portals, thousands of other EPC-compliant RFID tags were read. The reading of these tags show that open-architecture passive RFID can benefit ITV across all organizations.

Phase II

- Investigate labeling supply item at origin and receipt transaction at supply destination
- Investigate integration of read and write capability with Logistics Data Warehouse (DAAS)
- Investigate RFID tagging of deployable unit assets
- Investigate unit move (passive to active process)
- Investigate retrograde from theater
- Investigate UPS and/or FedEx participation

Summary

- AF is stepping out with RFID
- Initial implementation demonstrated passive RFID has a play in TAV
- Continue to participate with industry

Questions?