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The NAVAIR AIT Team

“ Focused RFID Applications ” Asset Management Using RFID

*Naval Air Systems Command
Integrated Communications and Information Systems Division
Automatic Identification Technology Team
Code 4.5.10*

NAVAIR



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ITV with Pallets & Containers ...

In Transit Visibility Using RFID

Passive RFID

- Pallets, Cases
- EPC Global Gen 2



Active RFID

- Containers, Freight
- ISO Standards





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A Proven System for Asset Management...

Benefits of Using RFID Applications

- RFID Inventory Management
- UID Management
- Automated Inventory Management
- Ensures accuracy of data collected
- Application accomplished with COTS hardware
- Software complete & exportable to other users for cost sharing



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Federal Flight Deck Officer Program (FFDO)

Pilot Program for Weapons Asset Management

External

- Recent advancements in RFID technology.
- Strong industry and DHS emphasis to realize RFID-based cost savings.
- Movement to IUID standards.

Internal

- Time-intensive manual processes required for weapons management.
- High-volume of transactions and continuing FFDO program growth.
- Requirement for 100% accuracy and accountability.





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User Requirements...

Armory/Weapons Training Site Survey

- All weapons are stored in the armory safe every day, in multiple safes, each containing multiple drawers.
- Data stored on weapon is sensitive - RF range is to be minimal at < 6 inches
- Weapons carriers must be re-certified semi-annually at one of 23 or more sites.
- The weapon used during training will be the same weapon deployed into the field.
- Credentials (ID) are associated with the weapon issued.





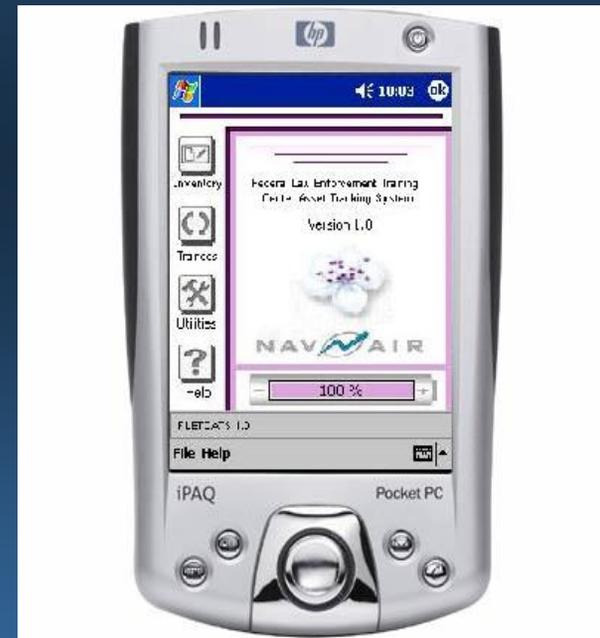
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FFDO RFID Tags & Readers





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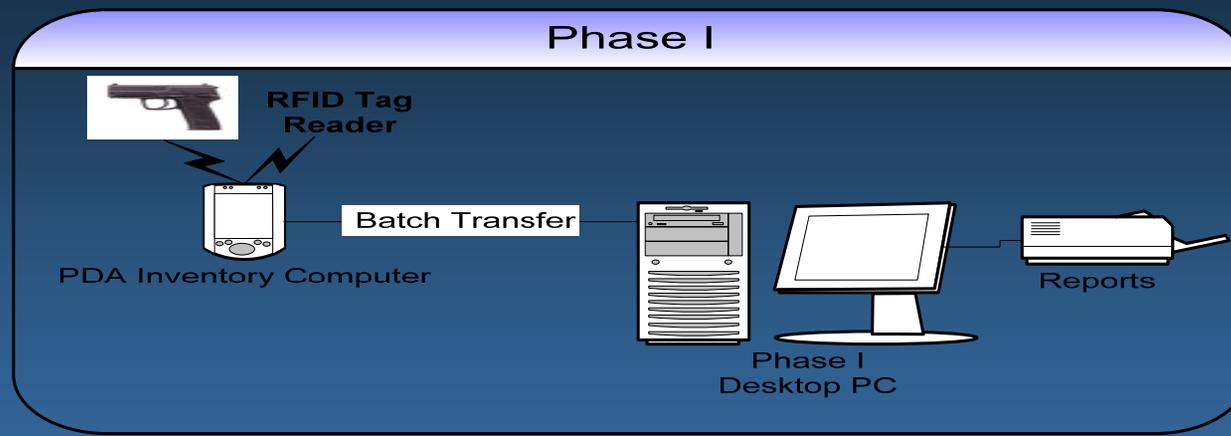


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Completed and operational since July 2005...

Phase I – Armory Automation Artesia Weapons Management

- Stand-alone system at the Training Center in Artesia
- Initiated weapons tagging and system initialization
- Associated weapon to trainee's credential
- Receive, issue and inventory weapons
- **Software certification by network administrator**





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Expanding capabilities to field users ...

Phase II – Re-qualification Sites

- Provide FFDO weapon validation at the re-qualification sites via the handheld
 - Allows near real-time data collection
 - Field Sites upload data to NAVAIR web server
 - Data is downloaded to a central system by Armory personnel in Artesia, NM
- On-Site FFDO Re-Qualification Training and Installation
 - Conduct training: 23 Field Office locations
 - Issue hardware and software applications: Lead Firearm Instructors (LFI)



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FFDO Asset Management System

- Main screen identifies application title – version info.
- Device battery life in view of the user
- Sidebar displays the main menus within the application





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Inventory Management Menu

- Listing of Modules
- Easy Navigation
- View several modules on screen





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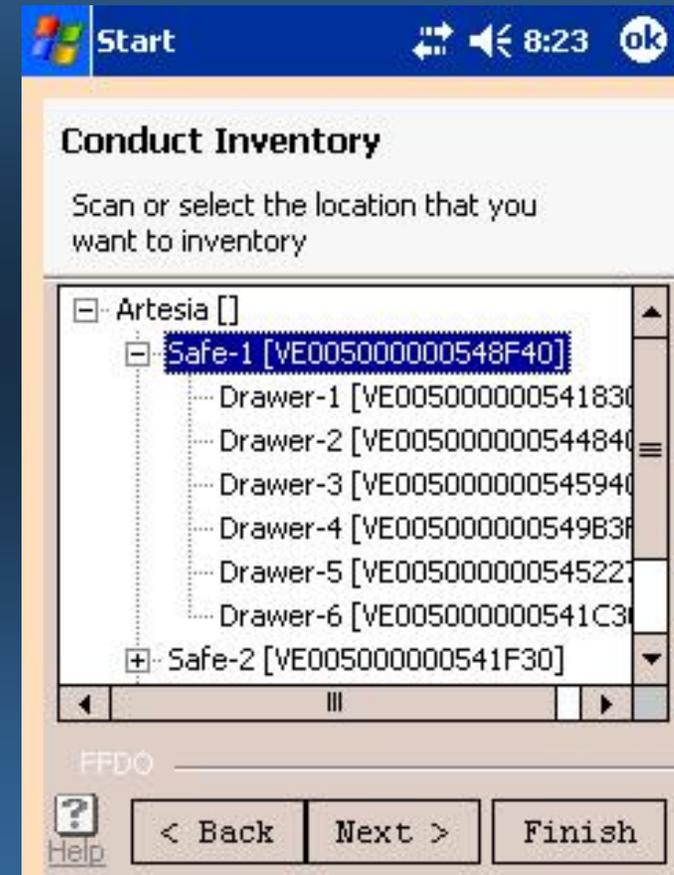
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Conduct Inventory Module (Select Location)

- Location for assets are associated to RFID tags
- Unlimited levels of locations
- Help is available within each module





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Conduct Inventory Module (Scan Assets)

- Shows only the assets within the location scanned/selected
- Allows for new assets to be moved into the location
- Clearly shows which assets have been inventoried
- User can “double-tap” on any asset to view more details about the asset

Start 8:37 ok

Conduct Inventory

Scan each asset that you want to inventory and then click 'Finish'

Serial Number	Category
26-001000	HAND GUN
26-001001	HAND GUN
26-001002	HAND GUN
26-001003	HAND GUN
26-001004	HAND GUN
26-001005	HAND GUN

Safe-1 - 2/6 Assets Inventoried

FFDO

Help < Back Next > Finish



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FFDO Re-Qualification Application

- Used at each of the 23 Re-Qualification Sites
- Design allows for easy navigation and use
- Help desk number visible to user
- Uses an HP iPAQ with SD Card/Card Reader





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FFDO Re-Qualification Menu

- Customized user interface enhances user experience
- Easy to navigate menu items





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FFDO Validate Pilot

- FFDO Asset/Credential validation
- FFDO Pilot Pass/Fail validation





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FFDO Pass/Fail Pilot

- Pilot must re-qualify every six months
- Upon completion of re-qualification, LFI marks pilot as either “PASS” or “FAIL”
- Data is stored on the handheld

FFDO

FFDO Re-Q Application v1.0

Re-qual Utilities Help

Pass/Fail Pilot

Credential S/N
12345

Pass Fail

Submit

AIT Help Desk
301-995-8387

1.0.3.18481



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Re-qualification Upload Site

- User uploads re-qualification data to the server in Artesia

The screenshot shows a Microsoft Internet Explorer browser window displaying the Transportation Security Administration Academy (TSAA) Re-qualification Data Upload Site. The browser's address bar shows the URL: <http://svrait.ctcorp.com/ffidorequalwebsite/>. The page features the TSAA logo and navigation links for "Log Off Options", "Close Browser", and "Login". The main content area is titled "Upload Pilot Requalification Data" and includes a "NOTE: Please only upload each file once." Below this, there is a "Select Handheld XML File:" section with a text input field, a "Browse..." button, and an "Upload Data" button. A status message indicates that a file named "C:\Documents and Settings\william.t.orr\My Documents\DALLAS My Documents\2006717FFDO.xml" was uploaded successfully. The page footer contains the text "Transportation Security Administration Academy - Re-Qualification Data Upload Site v1.0.0 Release" and a link to "Terms and Conditions".



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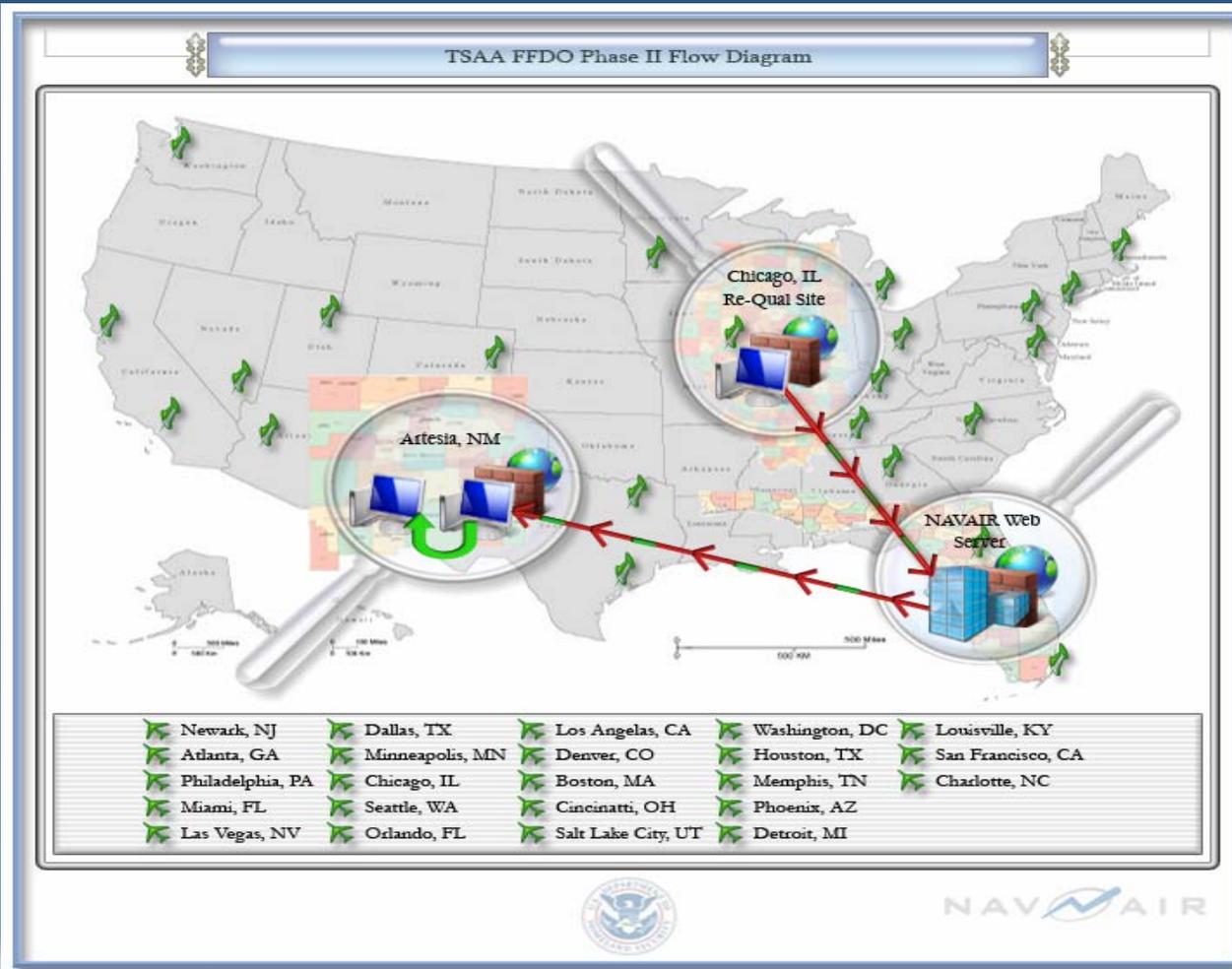
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Designed Concept of Data Flow...

Phase II Data Flow





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Expanding the Use of RFID ...

Other RFID Activities

- West Point Asset Management System
- Asset Management for CBRN
- Virginia Class Submarine
- Smart Storeroom of the Future aboard Navy ships
- Environmental Evaluation of RFID Tags for US Army
- DHS Protective Body Armor



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Customer support and engineering...

NAVAIR AIT Services

Plan project, satisfy requirements, support after implementation

- Analyze customer requirements for possible AIT improvements.
- Develop cost-effective AIT plan to meet customer requirement.
- Select most effective AIT technology suite(s) for the application.
- Develop/Acquire and integrate software and hardware required.
- Develop customer training to use the AIT application effectively (e.g., TSA Sunflower training.)
- Implement proposed AIT application; refine hardware, software, and training components to satisfy customer.
- Provide post-implementation support (NAVAIR Help Desk.)





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Are there any questions?



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Many paths lead to compliance...

DHS FFDO Asset Tag Data

- Follows DoD Guide to Uniquely Identifying Items document dated 7 June 2005
- Uses EAN.UCC Application Identifier

Data Elements

ISO 15434 Format Identifier
EAN.UCC Application Identifier
Issuing Agency Code
Company Prefix
Serialized Number

Data Value

05
8004
0
642230
26-123456

- Implemented Construct #1 (Serialization w/ Enterprise Identifier) & Global Individual Asset Identifier (GIAI)

AIT Media: $[] >^R_S 05^G_S 8004^R_S 0642230^G_S 26-123456^R_S E_{OT}$

Reader Output: 8004064223026-123456

[This deviates from DoD policy which treats 8004 as an identifier. All identifiers are overhead and stripped away from the output.]