



# Transportation Security Administration

## ATR OTE Weekly Data

Burn – In (2/2-2/14) Staggered by Site

|                       | Baseline IO | LAS ATR | DCA ATR | ATL ATR |
|-----------------------|-------------|---------|---------|---------|
| (b)(3), 49 USC 114(r) |             |         |         |         |

Record Keeping (2/8-3/13) Staggered by Site

|                       | Baseline IO | LAS ATR | DCA ATR | ATL ATR |
|-----------------------|-------------|---------|---------|---------|
| (b)(3), 49 USC 114(r) |             |         |         |         |

1. Throughput based on Node\_Throughput\_Post\_Clean dataset.
2. Utilization based on Node\_Throughput\_Pre\_Clean dataset, under all conditions.
3. Touch rate based on Throughput\_Clean dataset, and is the total of RPD, SPD, Target, and Sensitive Area search rates. (b)(3), 49 U.S.C. § 114(r)  
  

4. SPD and RPD rates are expressed as a percentage of AIT passengers. SPD and RPD rates based on Throughput\_Clean dataset.

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# TRANSPORTATION SECURITY ADMINISTRATION



## Advanced Imaging Technology

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### Automated Target Recognition

**July 2011**

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# Background

- In the summer of 2010, TSA issued a statement of work to qualified AIT vendors for the development and implementation of an Automated Target Recognition (ATR) solution
- In the fall of 2010, TSA completed laboratory trials of the L-3 Provision ATR and determined the detection rate to be suitable for airport trials
- February 2011 the TSA began field testing of ATR at three locations; Las Vegas, Atlanta and Washington Reagan.
- This presentation provides background on ATR functionality and insight on the testing results from airport pilots

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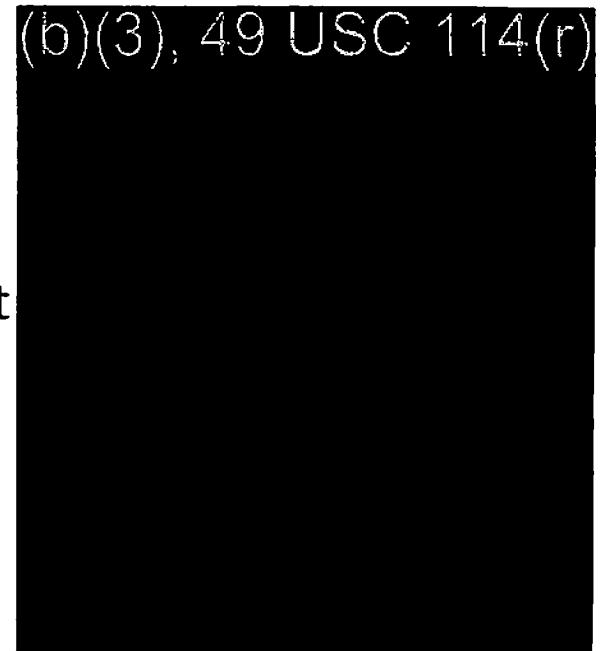
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# What is Automatic Target Recognition?

- Software that enables the AIT to automatically identify anomalies on passengers entering the security checkpoint
- Employs imaging analysis techniques to identify anomalies based on (b)(3), 49 USC 114(r) recognition software to uncover potential hidden weapons, explosives, and other contraband without the need for an imaging officer
- Full implementation of ATR will be based on equal or better operational effectiveness and suitability performance compared to image operators

(b)(3), 49 USC 114(r)



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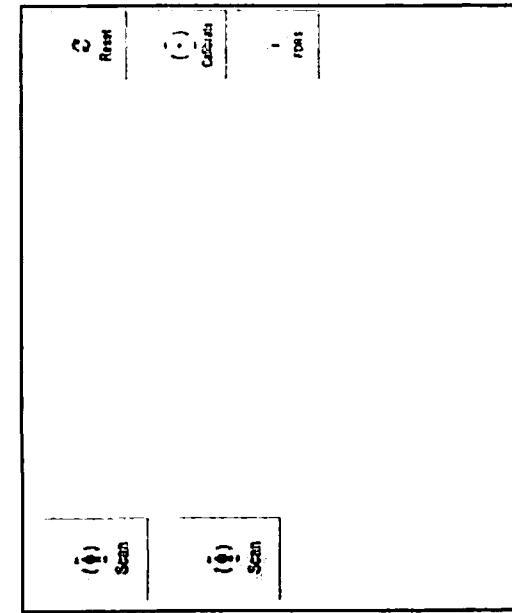


# How will ATR be displayed?

Operators are presented with a display that allows for the selection of male (blue) /female (pink) passenger screening

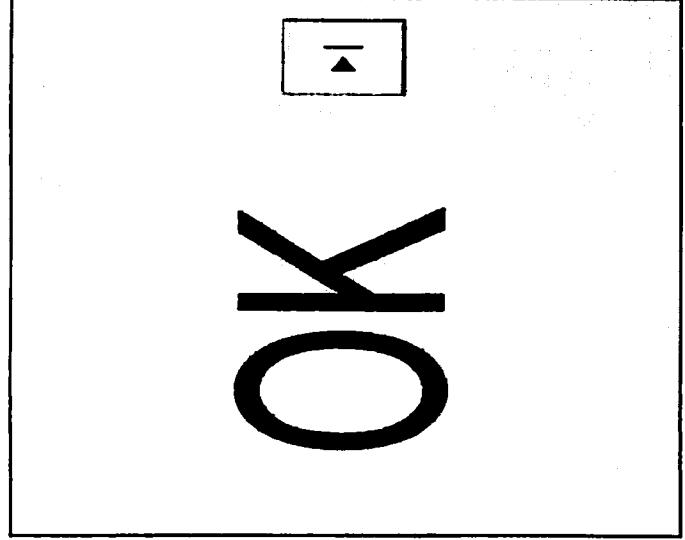
If anomalies are discovered, a screen will signify specific location(s) on the passenger where anomalies ARE detected. Image is the same regardless of gender.

If no anomalies are discovered, a screen will appear signifying that anomalies are NOT detected.



(b)(3), 49 USC 114(r)

Separate ATR detection algorithms are used to reduce false alarms based on the passenger's gender



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# Operational Test & Evaluation (OT&E)

## OT&E consisted of:

- Observations of TSOs using the AIT w/ATR to screen actual passengers
- Baseline Detection Comparison of AIT w/IO to AIT w/ATR
- Burn-in period, in which the test team reviewed data collection procedures to ensure that test team members collected the data effectively
- Demonstration of system reliability in airport environment to include operation availability and (b)(3), 49 USC 114(r)  
[REDACTED]
- Evaluation of throughput and other operational suitability issues
- Evaluation of system safeguards for passenger privacy

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# Airport OT&E

## Pilot Details

| Airport                               | Schedule                          | Duration of Pilot | Scope   |
|---------------------------------------|-----------------------------------|-------------------|---|
| Las Vegas International Airport (LAS) | February 01 2010 – March 15, 2010 | 36 days           | 2 L-3 AIT Systems (with and without ATR) were evaluated |
| Ronald Reagan National Airport (DCA)  | February 05 2010 – March 19, 2010 | 36 days           | 2 L-3 AIT Systems (with and without ATR) were evaluated |
| Atlanta International Airport (ATL)   | February 08 2010 – March 22, 2010 | 36 days           | 2 L-3 AIT Systems (with and without ATR) were evaluated |

## Goals

Demonstrate operational utility

Demonstrate operational effectiveness and suitability in the field environment.

Demonstrate Automated Detection

Demonstrate concept of operations with automated detection capability.

Demonstrate Reliability

Demonstrate system operation availability in airport environment.

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# Operational Performance Metrics

## Define criteria for operational suitability and effectiveness determination of ATR-equipped AIT units

- **Mission Performance:** Does the AIT automatically detect and display possible threats concealed on passengers?
- **Availability:** Is the AIT sufficiently available in potentially deployable environments to process passengers?
- **Human-Systems Integration (HSI):** Can available trained TSOs utilizing the AIT system at airport checkpoints successfully conduct screening operations?
- **Information Assurance:** Does the AIT prevent unauthorized system use and access to the system reporting data and imagery?
- **Interoperability:** Is the AIT interoperable with other checkpoint equipment and processes?

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# Key Performance Parameters (KPPs)

KPPs are those attributes of a system that are considered critical to operational capability

| KPP                                   | Result Identified in System Evaluation Report |
|---------------------------------------|---|
| (b)(3), (b)(5), (b)(7)(C) USC 1414(r) |   |

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# Effectiveness

(b)(3), (b)(5), 49 USC 114(e)

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# Effectiveness

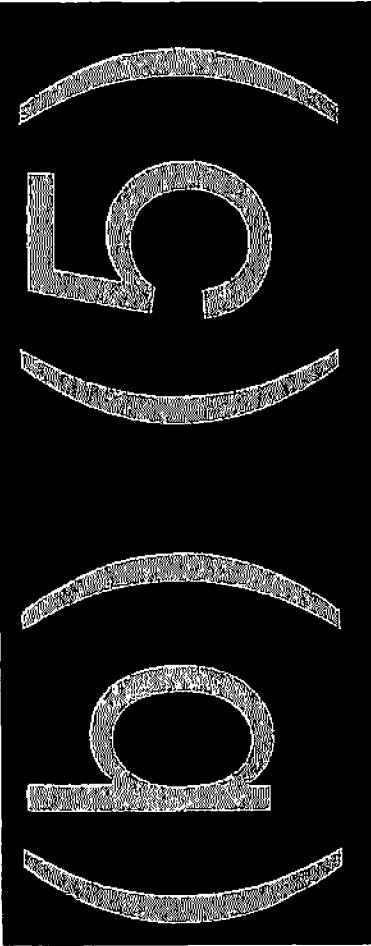
Detection - ATR vs. IO

(b)(3), 49 U.S.C. § 114(r)

Throughput - Passengers Per Hour



Reliability – Operational Availability



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# Confirmed Benefits of AIT with ATR

- Allows for reduction of manpower requirements through the elimination of the IO position
- Reduces privacy concerns, since human imagery is not reviewed by TSOs

(b)(3), 49 U.S.C. § 114(r)

- Reduces operator training requirements from days to hours
- Reduces scan time, increasing throughput from (b) (5)  
[REDACTED]

(b)(3), 49 U.S.C. § 114(r)

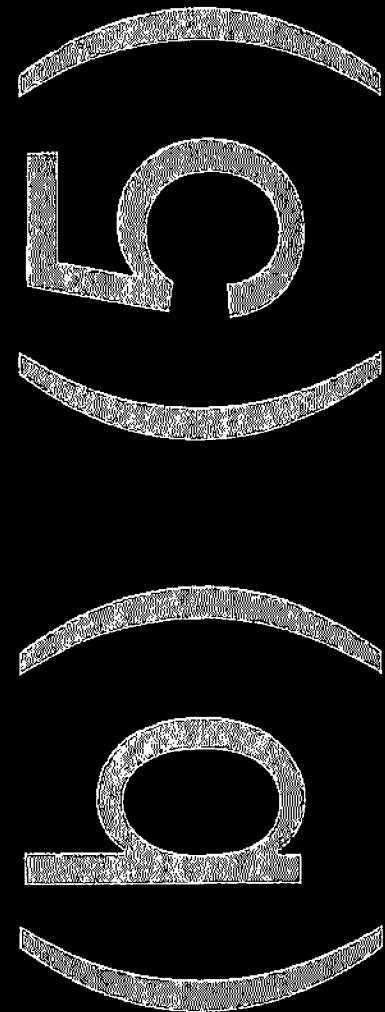
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# DHS DOT&E Summary

Letter of Assessment (LOA) findings:



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## Next Steps for ATR

- (b) (5)
- Explore additional privacy protections for imaging technology
- Test additional ATR-equipped AIT systems from vendors

(b)(3), 49 U.S.C. § 114(r)

(b) (5)

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## Continuous Improvement of ATR

# (b)(3), 49 U.S.C. § 114(r)

- OST will execute a test excursion in July 2011 to [REDACTED]
- [REDACTED] at the three original ATR

OT&E locations: ATL, DCA and LAS

(b) (5)

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# Funding

- 500 units procured to date
- \$86.3M awarded for test and production units, shipping, OEM installation, and training classes
- \$7.8M awarded for ATR upgrades
- FY11 Budget \$87.5M ~ 500 units

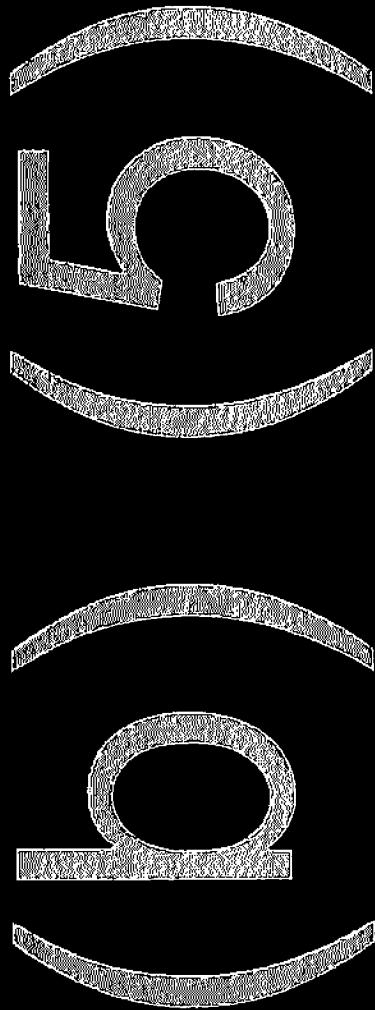
(b) (5)

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# Schedule



◆ Program Milestone ◆ Testing milestone ◆ Deployment Milestone ◆ Acquisitions Milestone

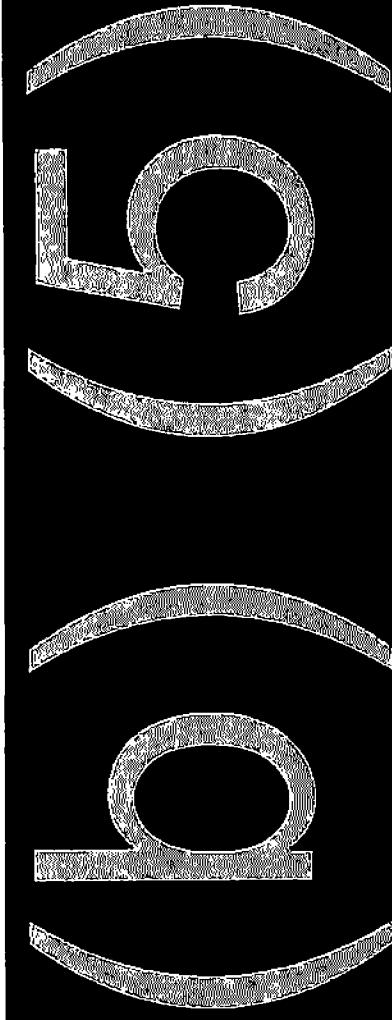
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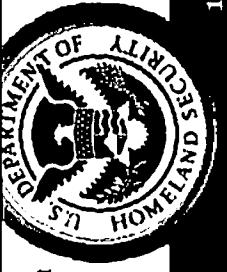
# Deployment Approach

- Upgrade existing ATR units to ATR (b) (5)
- Install new ATR-equipped ATR units



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# Deployment

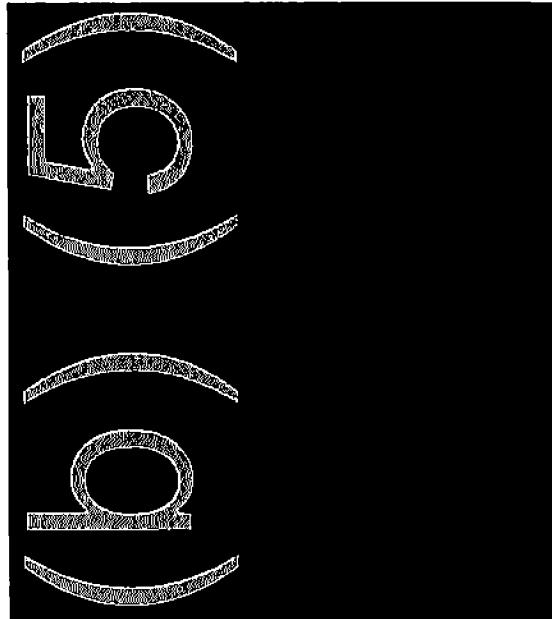
## ATR Deployments (August-January)



- Total AIT Units
- Total Airports

## Additional AIT Deployments (January-July)

(includes removal of WTMD with some deployment in



- Total AIT Units
- Total Airports

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