Key Topics

Agenda:

• Strategic Priorities & Capability Enhancements
• Operational Structure
• Funding Priorities
• Funding Activities
• Checkpoint TSE
• FY20 Checkpoint Property Screening System (CPSS)
• Credential Authentication Technology (CAT) Program
• Advanced Imaging Technology (AIT) Program
• Advanced Technology X-Ray (AT)
• Explosive Trace Detection (ETD) Program
**Strategic Priorities**

**Aggressively field enhanced capabilities**

**ENHANCED DETECTION**
- Field CAT
- Field CT (via AT and APSS)
- Upgrade ETDs to Detection Standard 6.2
- Complete AIT Wideband

**Build an experienced and engaged workforce**

**WORKFORCE EXPERTISE**
- Continue Program Manager (PM) training

**ENABLING TOOLS**
- Institute standard use of program management tools

**Promote organizational alignment/collaboration**

**A CUSTOMER CENTRIC CULTURE**
- Continue industry engagement to include airports, airlines, and vendors

**OPERATIONAL EFFICIENCIES**
- Standardize fundamental acquisition processes and baseline program performance to meet desired outcomes

**Mature Portfolios**

**ASSESSIBLE PROPERTY SCREENING**
- Formalize APS Portfolio to maintain deployed accessible property screening systems

**SPEED TO MARKET**
- Transition to Agile/Iterative release cycles

**ACCURATE FORECASTING**
- Execute Project-Based budgeting

**Deploy 500+ CAT Units**

**FY19**
- Deploy Tier II, threat Orange, & Deploy Buffalo 1 & 0 algorithms

**FY20**
- Deploy 300+ CAT Units
- Smiths DS 6.2 Deployment to 1,207 Units / L3 DS 6.2 Deployment

**FY21**
- Deploy 600+ CAT Units
- Alarm Resolution Program Stand Up / AIT Next Gen Testing
- Deploy 300 AT/CT units
Funding Priorities

The division adheres to the following funding priorities to guide activities and future focus areas:

<table>
<thead>
<tr>
<th>Priority</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Critical Program Operations</td>
<td>Staffing and other critical program costs</td>
</tr>
<tr>
<td>2. Critical Maintenance</td>
<td>Sustainment of Transportation Security Equipment (TSE) after deployment</td>
</tr>
<tr>
<td>3. Screening Equipment</td>
<td>Procurement and deployment of TSE and associated ancillary equipment needed for airport operations</td>
</tr>
<tr>
<td>4. Emerging Threats</td>
<td>Urgent projects to quickly address new threats and vulnerabilities</td>
</tr>
<tr>
<td>5. Planned Threat Detection Enhancements</td>
<td>Development of planned, incremental enhancements in support of threat detection capabilities</td>
</tr>
<tr>
<td>6. Recapitalization of Equipment</td>
<td>Upgrade or replacement of TSE that have reached their end of useful life</td>
</tr>
<tr>
<td>7. TSE Efficiency Enhancements</td>
<td>Development and deployment of TSE system-level enhancements in support of operational efficiencies</td>
</tr>
<tr>
<td>8. TSA-Initiated Equipment Moves</td>
<td>Movement of checkpoint screening equipment in support of TSA-initiated activities</td>
</tr>
<tr>
<td>9. Airport-Initiated Equipment Moves</td>
<td>Movement of checkpoint screening equipment in support of airport-initiated activities</td>
</tr>
</tbody>
</table>

Priority 3-9 will have limited funding in FY19
Funding Activities

**Technology**
- Computed Tomography (CT) Procurement – 300 Units
- Credential Authentication Technology (CAT) Procurement – 505 Units
- Boarding Pass Scanner (BPS) Procurement – 100 Units
- Installation and Integration Management

**Technical and Engineering Initiatives**
- Advanced Imaging Technology (AIT) Detection Enhancements and Windows 10 Upgrades
- Credential Authentication Technology (CAT) Idemia Document Library and Regression Testing
- Explosives Trace Detection (ETD) 6.2 Detection Standard Algorithm Development & Testing

**Program Operations and Management**
- Contract Support Services
- Transportation Security Integration Facility (TSIF) Lease and Operations Support costs
- Salaries, Travel, Training and Supplies

**Technology**
- Computed Tomography (CT) Procurement – 300 Units
- Credential Authentication Technology (CAT) Procurement – 505 Units
- Boarding Pass Scanner (BPS) Procurement – 100 Units
- Installation and Integration Management
Checkpoint Transportation Security Equipment

- Credential Authentication Technology (CAT)
- Advanced Technology X-ray (AT)
- Walk-Through Metal Detector (WTMD)
- Automated Screening Lanes (ASL)
- Automated Screening Lanes (ASL)
- Boarding Pass Scanners (BPS)
- Bottled Liquids Scanners (BLS)
- Computed Tomography (CT)
- Explosives Trace Detection System (ETD)
- Advanced Imaging Technology (AIT)
Overview:
TSA is standing-up the CPSS Program to support full-scale deployment ofComputed Tomography (CT) deployment to checkpoints and replace AT X-ray technology. The program will employ an incremental approach to rapidly deliver screening technologies in future acquisitions to increase efficiency, provide continuous control, and track divested property during the screening process.

Deployed Fleet:
- 8 APM CT systems
- 11 RCA CT systems

Key Activities

Acquisition:
- Program Approval (ADE-2A): Q4 FY19
- Approval of Supporting Acquisitions (ADE-2B): Q4 FY19
- Approval to Produce & Deploy Mid-size CPSS (ADE-3): Q3 FY20
- Approval to Produce & Deploy Full-size CPSS (ADE-3): Q4 FY21

Procurement:
- Contract Solicitation: Q4 FY19
- Contract Award: Q4 FY20
- Increment 1 Deployment (Start Date): Q2 FY21

Test & Evaluation:
- Vendors TSL Certified: Q4 FY19
- Field Test/QT/QLR/OT (Mid-size): Q1 FY20 – Q2 FY20
- QT/OT (Full-size): Q4 FY20 – Q2 FY21

Ongoing and Upcoming Technology Modernization
- Threat Detection Capabilities: Enhancing system detection standards to APSS Detection Standard 6.2, Level 0
- System Configurations: Mid-size CPSS system will have Automated Diverter, Full-size CPSS system will have Automated Conveyance System (ACS)
- STIP Capability: Increment 1 CPSS systems will require STIP Client Compatibility

FUTURE FOCUS

Detection Standard 6.2, L0 Certification (Q4 FY19)
Test Units Bailment (Q4 FY19)
Mid-size System Evaluation Report/Letter of Assessment (Q3 FY20)
Full-size System Evaluation Report/Letter of Assessment (Q2 FY21, Q3 FY21)
Increment 2 (FY22)
## Credential Authentication Technology (CAT)

### Overview:
The CAT enhances the passenger screening process at the checkpoint by improving the inspection of identification documentation and confirming passengers’ vetting status. Through the integration of various technologies, CAT machines can authenticate acceptable forms of identification, detect fraudulent documents, and compare identification information to information submitted to Secure Flight.

### Deployed Fleet:
- 47 units (LRIP only)

### Key Activities

#### Capability Deployment:
- Deploy 505 units by end of Q2 FY20

#### Two-Way Communications:
- Project will enable CAT and SF to send information back-and-forth, enabling SF to track passengers entering the sterile area.

#### Future Lane Experience (FLEx):
- Developed CAT upgrades to support expanded passenger screening designations. Testing anticipated to conclude Sept 30, 2019.

#### Real ID:
- Project will enable CAT to validate and/or authenticate Real ID utilizing the security features as identified by DHS and congressional mandates NLT Sept 30, 2020

---

### Ongoing and Upcoming Technology Modernization

#### Mobile Driver’s License:
- Currently in the requirements gathering phase with RCA.

#### Biometrics:
- Currently in the requirements gathering phase with RCA.

---

### FUTURE FOCUS

|-------------------------------------------|-----------------------------------|-----------------------------------------|--------------------------|-------------------------------------------------------------------------|------------------------------------------------------|
Overview:
AIT systems are used to screen passengers for metallic and nonmetallic threats including weapons, explosives, and other objects concealed under layers of clothing.

Deployed Fleet:
- 950 units
  - 736 AIT-1 units
  - 214 AIT-2 units

Key Activities

Operations:
- Reached full operational capability (FOC) on September 19, 2017.
- 87 AIT-1 systems upgraded with the Targeted Threat Algorithm (TTA).

Capability Developments
- Worked with third party vendors and academia to develop Third Party algorithms for AIT systems.
- Capability “Enhancement Packages” for AIT-1 and AIT-2 systems
  - Sensitive Area Box: Displays a bounding box on the screen to aid the TSO by clearly identifying un-divested items in the sensitive zone.
  - Targeted Threat Algorithm: Developed in response to a specific threat; deployed on limited quantity AIT-1 units due to throughput impacts.
  - Clearing Queuing: A two queue design to allow continued throughput if a passenger alarms.
  - Dynamic Switching: Software that enables AIT machines to switch between two detection algorithms.

Ongoing and Upcoming Technology Modernization
- Wideband systems that will improve detection and false alarm rates.
- Open architecture software that supports modularity of functions (i.e. interchangeable algorithms, GUI).
- Deep learning algorithms with material discrimination to identify threats prior to alarm resolution.
- Integration of the 8 algorithms selected from the Kaggle Grand Challenge.

FUTURE FOCUS

Advanced Technology X-Ray (AT-2)

Overview:
AT X-ray systems are the primary screening devices for accessible property. TSA purchased AT-1 systems in 2008, followed by AT-2 systems in 2012. An upgrade to the AT-1 fleet, brought the AT-1 equipment to functional equivalency with the AT-2 systems.

Deployed Fleet:
- 2,211 units
  - 843 Rapiscan
  - 1368 Smiths

Key Activities

Field Deployments
- Deploy systems to meet airport demand (no additional AT-2 procurements planned)

Planned Algorithm Development and Enhancement
- Continued development and testing of enhanced threat detection software
- Field improved detection algorithms to address emerging threats
- Supporting research of Deep Learning to enable AT-2 checkpoint scanners to: (a) auto-detect a prioritized set of Prohibited Items, and (b) improve detection of explosives

Ongoing and Upcoming Technology Modernization

Deep Learning
- Continue to identify Deep Learning solutions in concert with RCA Research & Development (R&D) projects.
- Pursue phased deployment of solution based on benefit/cost assessment

Smith’s AT-2 Tier II Deployment (FY19)
Smiths AT-2 Tier II Orange Deployment (FY19)
AT-2 Machine Learning Algorithm Testing (FY19/20)
Rapiscan Tier II + Orange Deployment (FY20)
Begin AT-2 recapitalization with CT/CPSS (FY20)
Overview:
ETD technology is employed at the checkpoint and checked baggage screening areas to screen for explosive compounds on passengers, their accessible property, and checked baggage.

Deployed Fleet:
- 5822 units
  - 3352 Checkpoint
  - 2470 Checked Baggage

Key Activities

Field Deployments
- On March 29, 2019, completed the deployment of 2,073 L3B220 systems to support an upgrade in detection capability, replacing 2,064 Morpho itemizers which have been removed from the field.

Planned Algorithm Development and Enhancement
- Continued development and testing of enhanced threat detection software
- Field improved detection algorithms to address emerging threats

Ongoing and Upcoming Technology Modernization

Improved Secondary Scanning
- Initiating acquisition program documentation for ETD Replacement technology
- Evaluating technology options for improved secondary scanning in collaboration with DHS S&T and TSA RCA/ITF

FUTURE FOCUS

<table>
<thead>
<tr>
<th>Detection Standard 6.2 Development and Deployment (Est. FY19-20)</th>
<th>ETD Replacement Options Assessment (Est. FY20-FY21)</th>
<th>Detection Standard 6.3 Development and Deployment (Est. FY20-FY22)</th>
</tr>
</thead>
</table>

Smiths 500DT
Dual Ion Mobility Spectrometry

L3 B220
Ion Mobility Spectrometry
Questions?