TSA Security Technology Challenges

Presented at the Workshop on Research for Aviation Security

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Transportation Security Administration

TSA's Office of Security Technology

Mission: The Office of Security Technology (OST) safeguards the nation's transportation systems by providing efficient and effective **security technology solutions** through **applied research, development, operational testing, deployment, and life cycle management** to ensure the free movement of people and commerce

Office of Security Technology (OST)

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The Electronic Baggage Screening Program (EBSP) implements the surveillance systems that screen checked baggage

The Air Cargo Security Technology Program (ACSTP) implements the surveillance systems that screen air cargo

The Advanced Surveillance Program (ASP) implements video and security surveillance systems that monitor people and property throughout the security screening process

The Security Technology Integrated Program (STIP) networks passenger and checked baggage screening technologies across the nation's airports

The Passenger Screening Program (PSP) implements the surveillance systems that screen passengers and their carry-on items at the screening checkpoint

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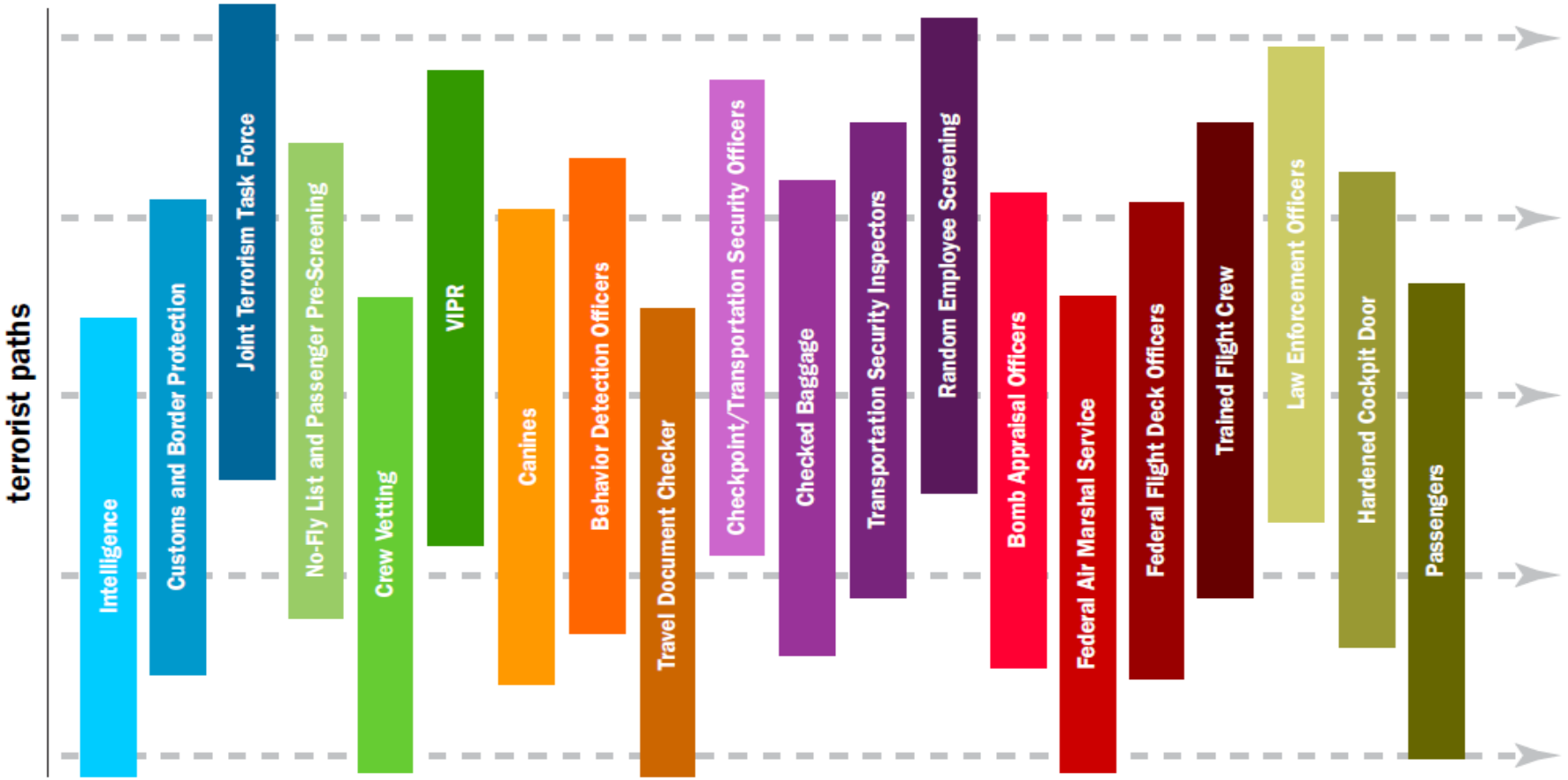
The Department of Homeland Security uses a 20 layer approach to security



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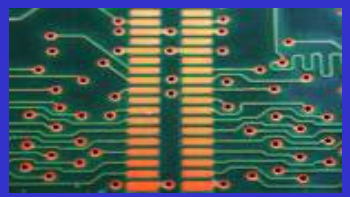
TSA faces key important challenges in aircraft and airport security

Emerging Threat Challenges	Balancing Security & Privacy	Technology Landscape
		
• Constantly Evolving • Informed Adversary • Alternative Concealment Methods (Simple-Complex) • Home Made Explosives • Platform to support Future Capability • Modular Design • Limits to human cognition in tasks	• Compliant with health and safety regulations • Sensitive to passenger privacy concerns • Managing Public Perception • Reducing Inconvenience to Passengers	• Approximately 5,000 Screening Devices • Limited space in airports • Stand-Alone Systems • Limited Checkpoint Footprint • Uncommon Interfaces and Platforms • Limits on effective use of technology

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Homemade Explosives are a focal point of TSA security efforts

- TSA must maintain a robust and adaptable capability to detect a wide range of explosives materials specified by the Intelligence Community (IC) as potential terrorist-borne (suicide) or emplaced (leave-behind) threats to commercial aviation that can cause catastrophic damage
- Threat objects include a wide variety of military, commercial, and homemade explosives or explosives devices
- TSA is conducting research to fully characterize HMEs and how they work
- Screening procedures and systems must be effective in identifying threats while at the same time facilitating speedy passenger travel and movement of goods
- Screening cargo for threats is an increased focus – there is a 100% cargo screening mandate TSA must meet and publication of a QTL for cargo by August 2010

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Current technology procurement priorities for TSA

- **Advanced Imaging Technology (AIT) – TSA plans to use systems in the primary position, eventually replacing metal detectors**
  - **TSA must balance security and privacy and be mindful of protecting our citizens' civil rights in the security process**
- **Advanced Technology (AT) X-Ray - next generation of x-ray which provides a high-resolution, multi-dimension view of carry-on baggage**
  - **TSA must work to increase security and reduce passenger wait times by allowing passengers to keep liquids and laptops in bags and increase overall efficiency**
- **Explosives Detection Systems (EDS) – TSA has over 1200 certified EDS systems in use nationwide**
  - **TSA is working with a highly aggressive procurement schedule to deploy new EDS systems capable of detecting new and emerging threats**

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International harmonization efforts have produced successful results

- **Master liquids threat list**
  - **This significant achievement resulted in an approved harmonized liquids threat list signed by the US, EU, Canada and Australia**
- **Project Newton**
  - **Project Newton is a review of the scientific basis of explosives detection technology standards currently being used for screening passengers, carry-on items, and checked baggage and uses high-order computational modeling software to simulate the complex dynamics of explosive blast effects on in-flight aircraft**
  - **TSA has discussed the program with multiple international partners for opportunities to collaborate**

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Opportunities for further harmonization

- HMEs - A significant level of effort will be required to fully understand the explosive characteristics of the various HMEs that are most likely to be utilized by terrorists
    - Testing labs in the US and across Europe possess different capabilities for developing and testing explosives
- System Requirements - There is a need to drive the direction of the capabilities of future technologies to ensure that:
    - Continually evolving threats can be mitigated
    - Screening capabilities consistent across the globe
- T&E methodology - Harmonization of testing protocols will enable sharing of results and prevent duplication of effort
- Technology development – opportunities to harmonize technology development effectiveness for next generation security systems

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EU-US Joint Declaration on Aviation Security Objectives

- To identify individuals who pose a risk to our security as early as possible by bolstering the security of and our confidence in travel documents, the use of biometrics, and passenger screening, so we can prevent such individuals from travelling and posing a threat
- To identify the illicit materials that such people may be carrying, sending via cargo, or transporting, including through enhanced technologies, to prevent the entry of such materials onto aircraft
- To work with other partners worldwide to implement necessary changes to their aviation security regimes, including by enhancing aviation security capacity
- To continue to work together and with other international partners, including at the ministerial level, toward greater international travel security

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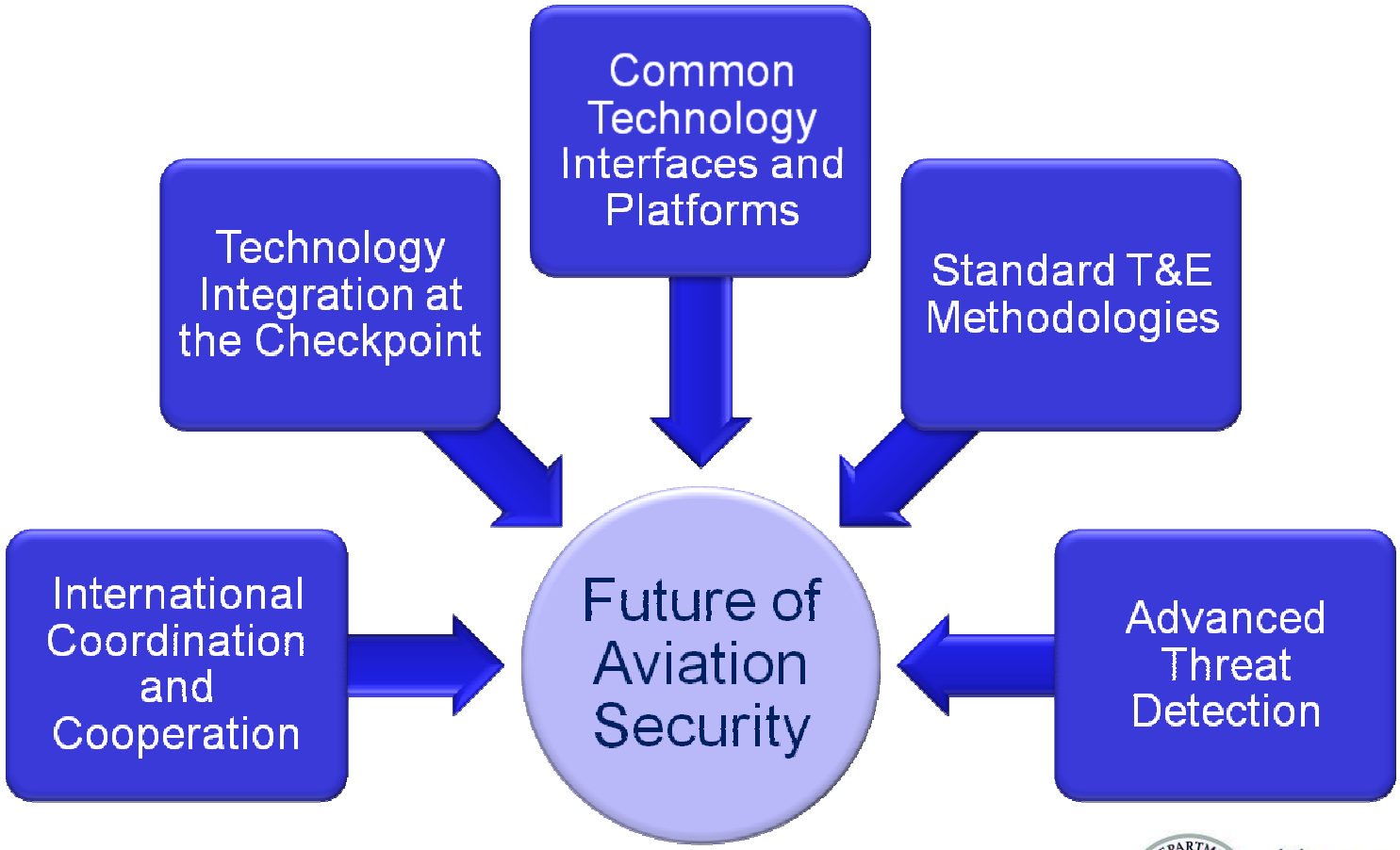
The future state will build on progress already made in aviation security



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“We must take collaborative global action to increase information sharing and strengthen security measures to counter terrorists who threaten all nations. The United States is fully committed to working closely with our European partners to develop innovative and effective ways to ensure our mutual safety while protecting the privacy and civil liberties of all citizens.”

- Department of Homeland Security (DHS) Secretary Janet Napolitano

April 9, 2010

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