Aviation Security:
A Complex System or a System of Systems?

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TSA operators are in the field to validate passengers’ credentials.

TSA operates multiple checkpoint systems to screen passengers and carry-ons.

TSA operates explosives detection systems to screen passengers’ checked bags.

TSA has limited behavior detection and remote screening at the perimeter of the airport.

TSA operates multiple checkpoint systems to screen passengers and carry-ons.

TSA has limited behavior detection and random screening during terminal and gate queuing.

Authority & Leadership
System owner has full authority to make decisions, is in control of funding streams, workforce, and prioritization within the TSA space independent from other stakeholders.

Context & Scope
There are explicit boundaries to the system space and functionality based on TSA regulations, policy and law.

Capabilities & Requirements
TSA has defined requirements for screening and system success through a disciplined approach. Capabilities are measured and prioritized based on TSA effectiveness.

Acquisitions
Acquisitions are inhibited by vendors ability to create a variety of specialized functionalities within one large complex system.

Passenger Journey

Flight Reservation
Flight reservations are made through airlines, and sent to TSA for review prior to confirming ticketing.

Credential Authentication
TSA operators are in the field to validate passengers’ credentials.

Checked Baggage Screening
TSA operates explosives detection systems to screen passengers’ checked bags.

Gate Boarding
Gate boarding is operated by airline staff and not a TSA activity however, random screenings are performed.

Airport Arrival
TSA has limited behavior detection and remote screening at the perimeter of the airport.

Passenger Screening
TSA operates multiple checkpoint systems to screen passengers and carry-ons.

Terminal Queuing
TSA has limited behavior detection and random screening during terminal and gate queuing.
Authority & Leadership
Lack of common leadership and authorities adds complexity and increases the need for collaboration early, and incentives stakeholders to prioritize against a common vision.

Context & Scope
Operating in a SoS landscape opens the scope to all involved stakeholders and expands the context of security throughout the aviation space.

Capabilities & Requirements
Requirements will require the inclusion of system of system interfaces in order to align with stakeholder requirements. Capabilities will be measured against the full ecosystem effectiveness and prioritized based on overall gaps.

Acquisitions
Acquisitions will provide opportunities for new technology insertion and rapid delivery of new capabilities without full scale replacement.

Passenger Journey

Key
- TSA
- CBP
- LEO
- Airline
- Airport

Themes
The aviation security architecture will leverage capabilities across TSA to enable the flow and use of risk and operational information to proactively adapt to emerging threats through a comprehensive view of the security landscape.

Key Goals:

1. Enable transparency through **data-sharing** across the aviation ecosystem

2. Proactively **adapt to emerging threats** through a **comprehensive view** of the security landscape

3. Enhance **collaboration** across the aviation ecosystem
A suite of checkpoint scanning capability upgrades will enable enhanced detection and greater efficiency.