
TSA: Technology for Improved Security

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TSA Mission & Challenge

The mission of the Transportation Security Administration is to protect the nation's transportation system by ensuring the freedom of movement for **Protect** commerce.

Managing the information that TSA collects and shares – as it executes its mission – is a daunting challenge.

What do we know?

How do we share it?

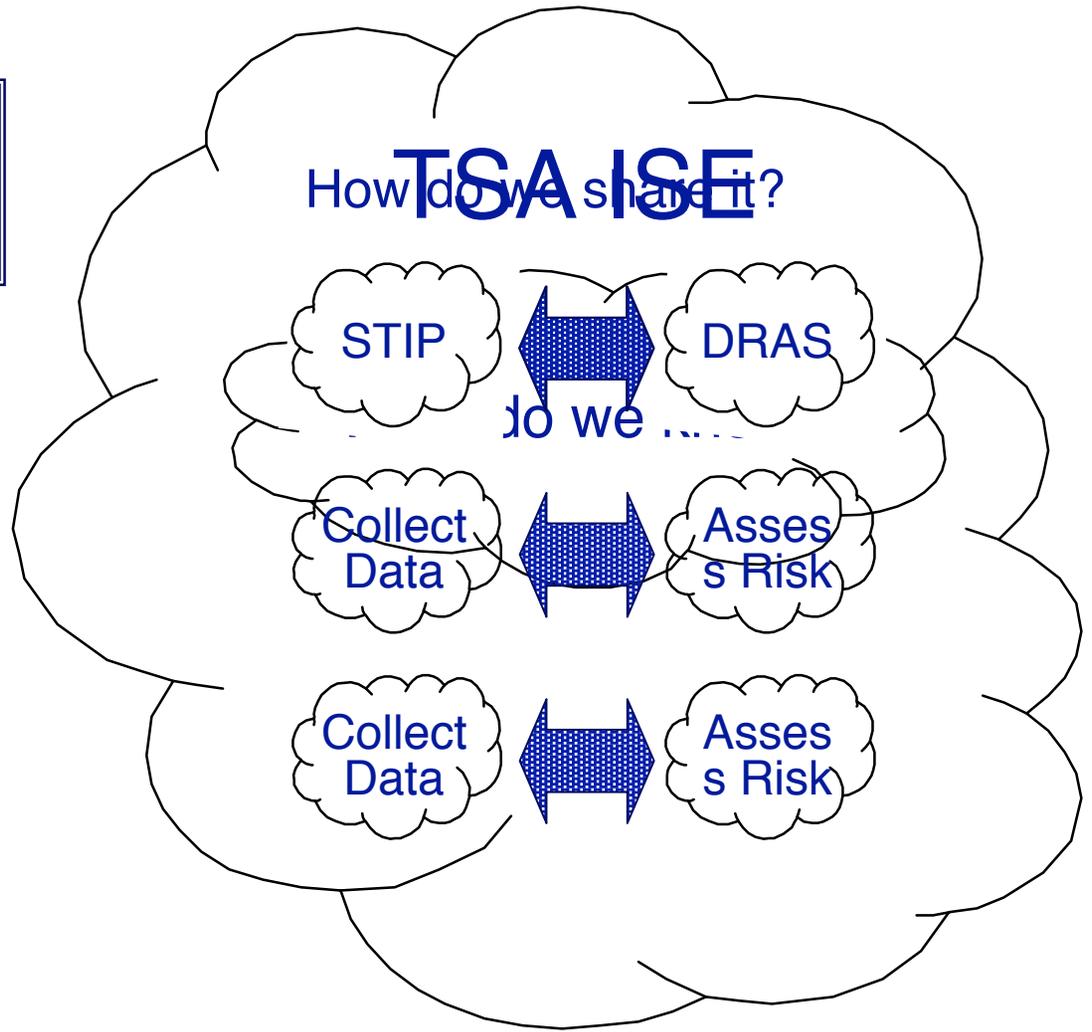
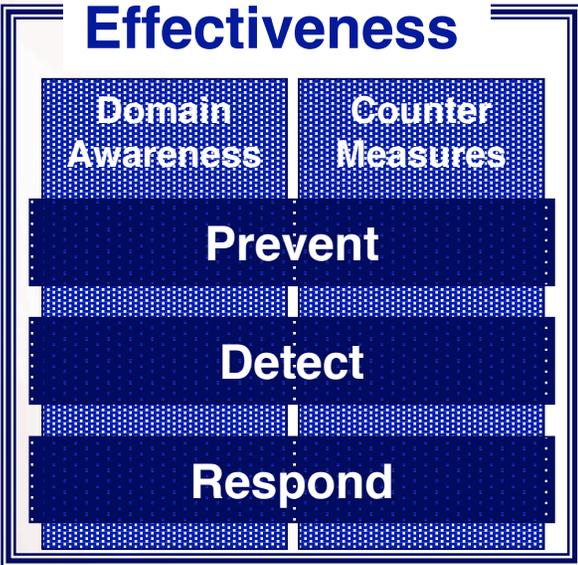


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TSA Mission & Challenge



Protect



Risk-informed decision making is the centerpiece of TSA's transportation security strategies

TSA's risk management efforts are driven by a few guiding principles:

The Transportation Risk Landscape is Changing

- The terrorist threat is **dynamic and adaptive** (i.e., we can't depend on historical evidence)
- Direct, active, **asymmetric threat** focused on disrupting infrastructures
- Network and **systems thinking** needs to drive our approach to risk management for transportation

The US transportation network is an interconnected "system of systems"

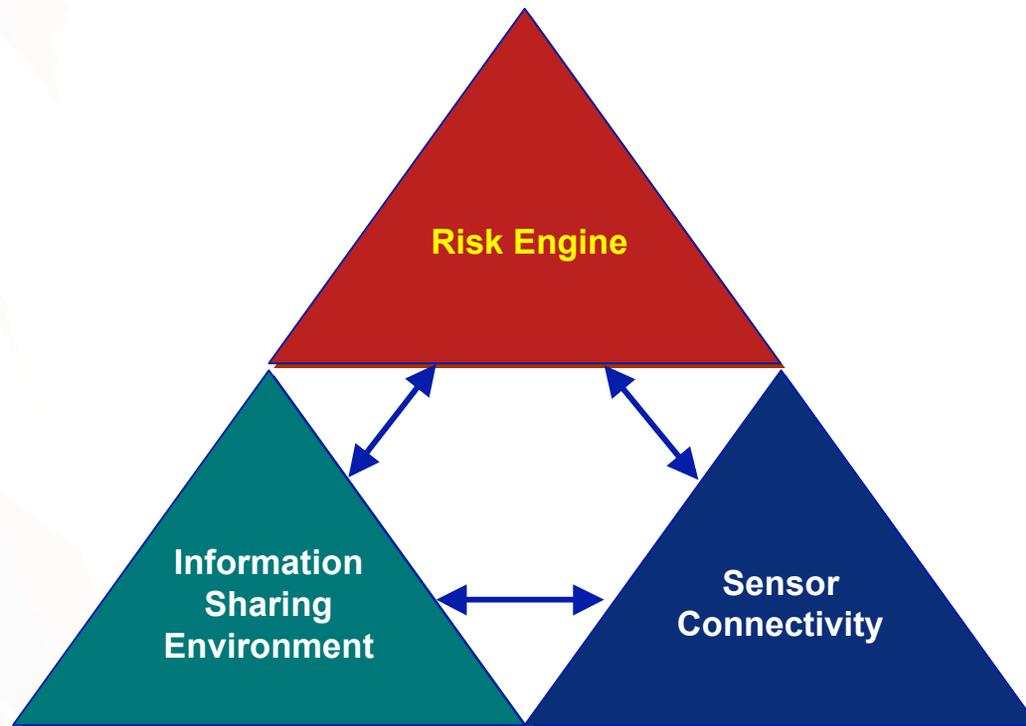
- Evolving to more **complex network** structures
- Interdependencies lead to high degree of **uncertainty**
- Extended enterprises and **partnerships** play key role
- Decision velocity very high
- More **connectivity** among and between **diverse stakeholders**
- Highly **efficient and effective**



TSA is developing concept for a Dynamic Risk Analysis System (DRAS) for aviation security

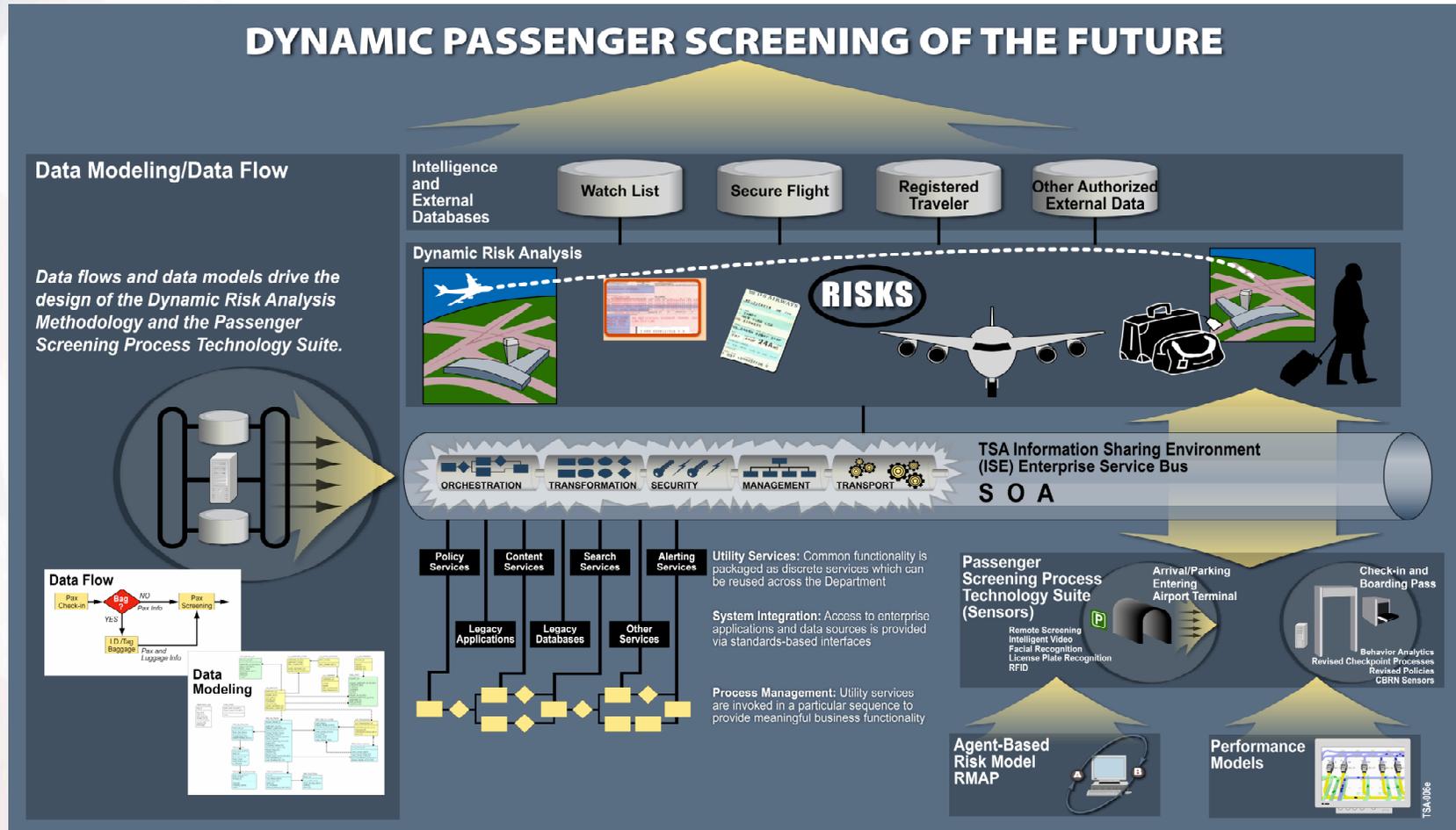
DRAS will leverage sensor connectivity and information sharing to dynamically update risk assessments as passengers pass through multiple layers of security at the airport

Dynamic Risk Analysis System



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Vision: dynamic risk analysis and dynamically adjusted measures through information sharing and sensor connectivity



- The system emphasizes modularity, flexibility, and scalability to respond / adapt to changes in mission or threat
- The system has the ability to re-align with adjusted risk assessments and associated risk scores.
- The system supports the management and dissemination of data in a way that it is made actionable.

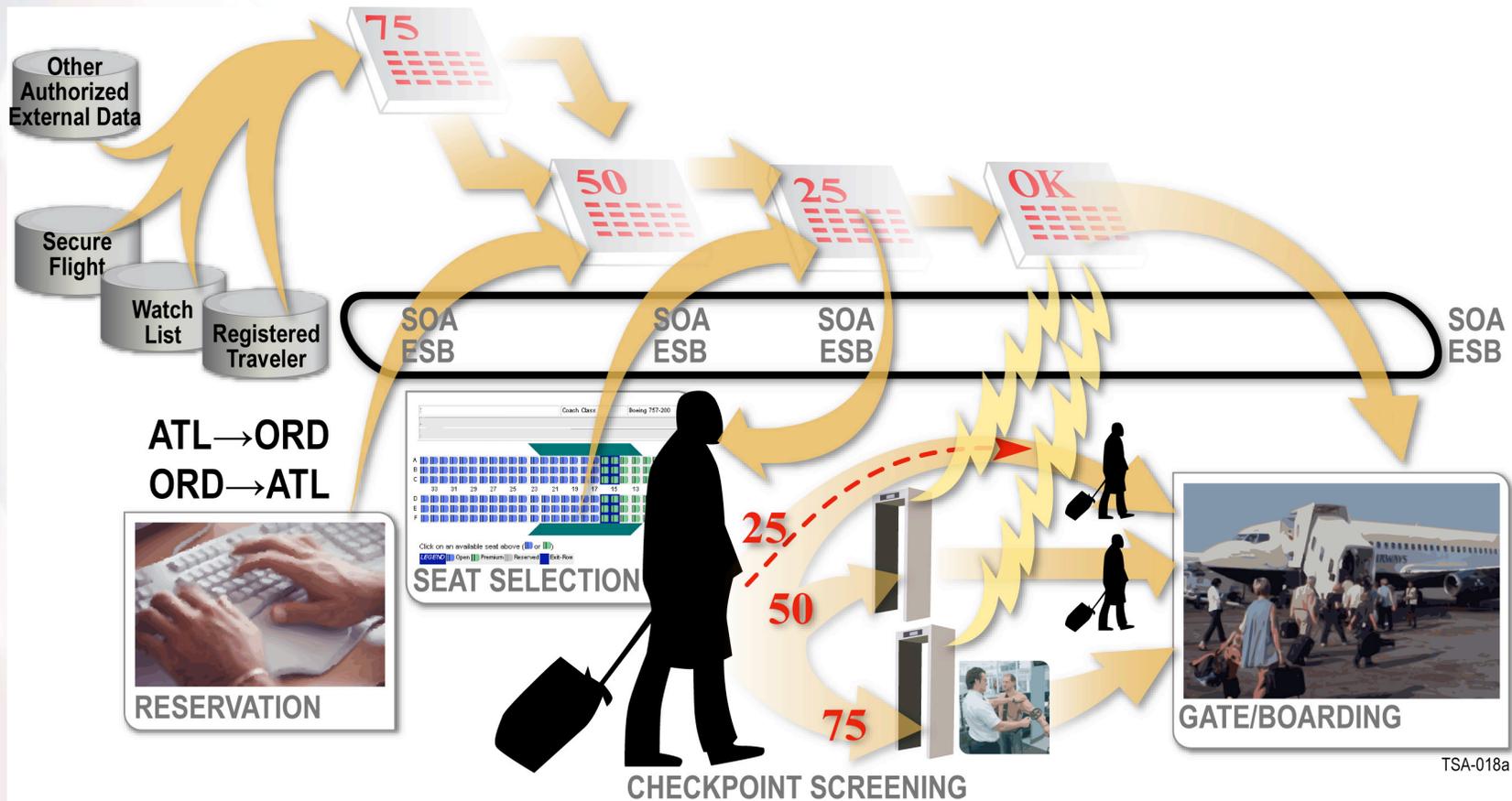


Dynamic risk analysis is different than static risk analysis

Static risk assessments are calculated based on known national, regional and local risk levels plus pre-existing passenger information and serve as the baseline for dynamic risk assessments; dynamic risk assessments are continuously updated based on real time sensor information



Enabled Risk-Based Passenger Screening



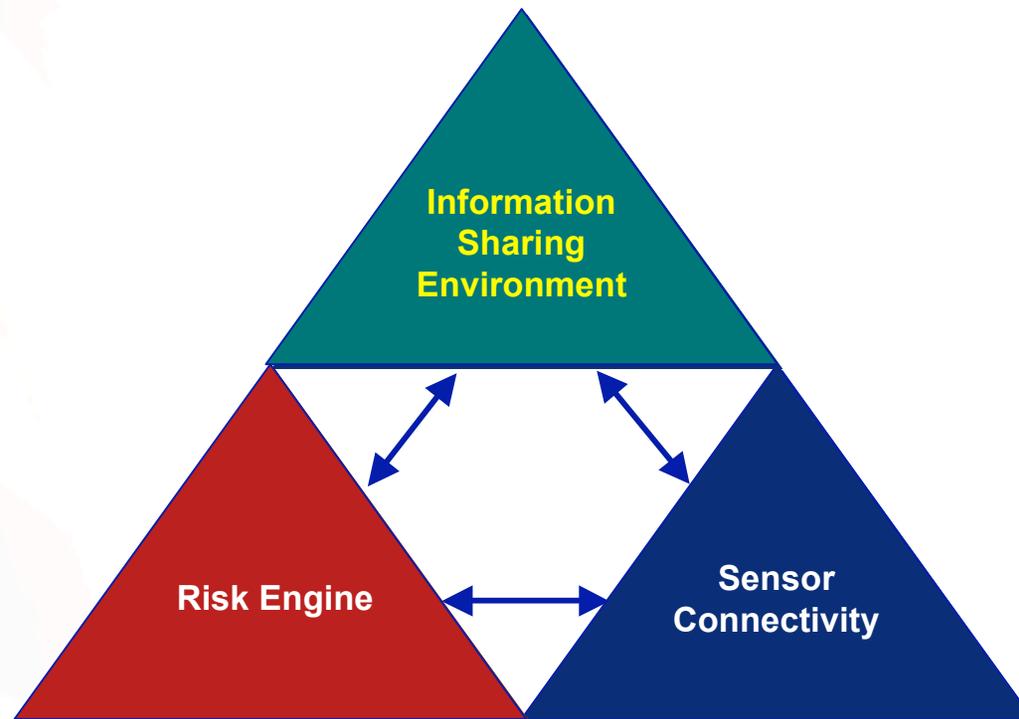
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- When implemented, the architecture supports implementation of the sensors, data flows, analytics, command & control, and other next-generation features of the Risk-based Passenger Screening system.



TSA - Information Sharing Environment

Information Sharing Environment



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Key Components (notional)

CONTROL CENTER

- Receives Alerts and Warnings
- Coordinates First Responders
- Dynamic Risk Analysis



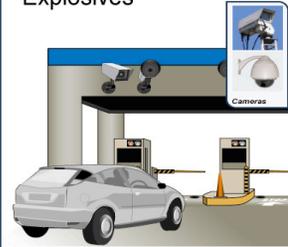
RESERVATIONS

- Initial Intelligence and Authorized External Database Checks



AIRPORT ARRIVAL Vehicle Inspection

- Explosives



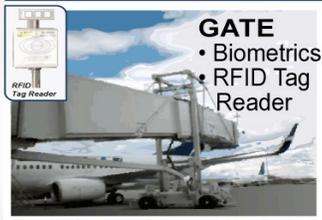
CURBSIDE CHECK IN

- Credential Validation
- Biometrics
- RFID Tagging (Baggage)



LOBBY

- Environmental Monitoring
- Behavior Monitoring



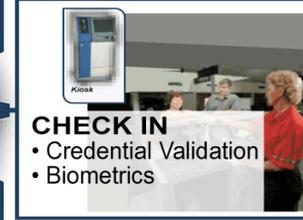
GATE

- Biometrics
- RFID Tag Reader

DYNAMIC RISK ANALYSIS

Continuous monitoring, assessment, and proactive adjustment of the passenger security system enterprise.

- Service Oriented Architecture (SOA)-Based Enterprise Service Bus (ESB) Enables System-Wide Data Exchange and Communication Between All Elements of the Enterprise



CHECK IN

- Credential Validation
- Biometrics



OPEN PLUG AND PLAY ARCHITECTURE

- Integration of New Sensors to Address Evolving Spectrum of Threats Enabled by Standardized Data Exchange Protocols and Open Plug and Play Architecture



CONCOURSE

- Environmental Monitoring
- Behavior Monitoring
- Passenger and Carry-On Items Location Verification



SCREENING EQUIPMENT

- The DRA Processes Data in Combination with other Information and Automatically Adjusts Equipment Sensitivity Settings



STERILE TRANSITION

- Environmental Monitoring
- Behavior Monitoring
- Tagged Carry-on Bags

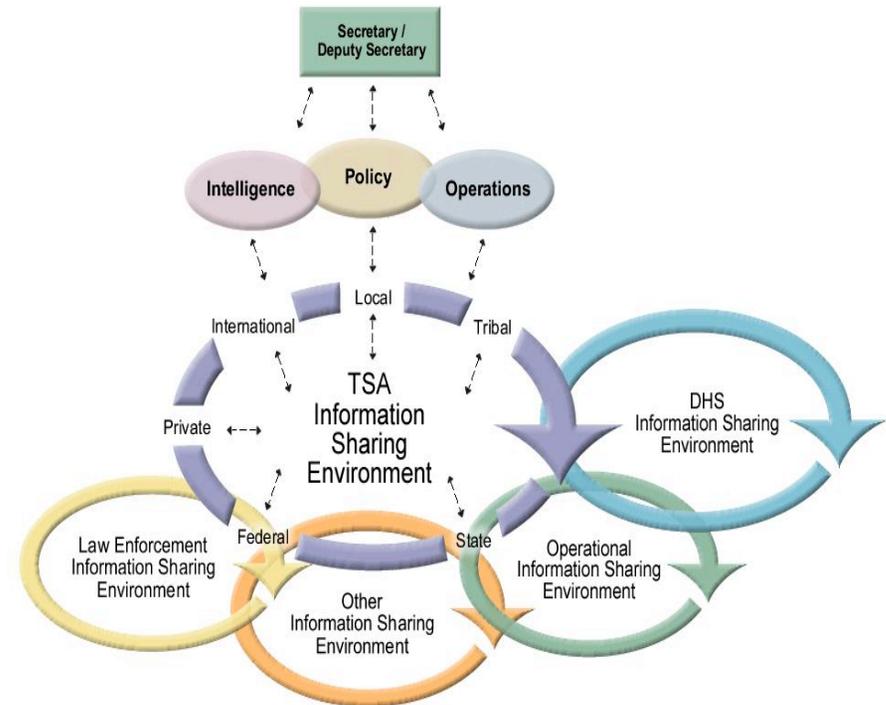
- The concept of future Passenger Screening operations envisions a multi-tiered, multi-layered operating environment in which continuous, dynamic assessment of passenger risk to aviation security is conducted.
- This system will interact with TSA personnel at the national and local levels as well as with intelligence agencies and law enforcement officers (LEO) and will be capable of sharing authorized information across a variety of local, state, and federal agencies.



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TSA Information Sharing Environment

- The TSA Information sharing Environment (ISE) is a combination of policies, governance, procedures, and technologies that link the resources (people, systems, databases, sensors and information) of stakeholders to facilitate information sharing, access and collaboration.
- Interoperability among information systems in the ISE – together with directories of people, services, and data – provide the foundation for sharply improved analysis and collaboration.
- The ISE minimizes the technical expertise required to locate and effectively use the information:
 - Combines policies, governance, procedures, and technology
 - Leverages existing information sharing capabilities to quickly deliver solutions to the field.

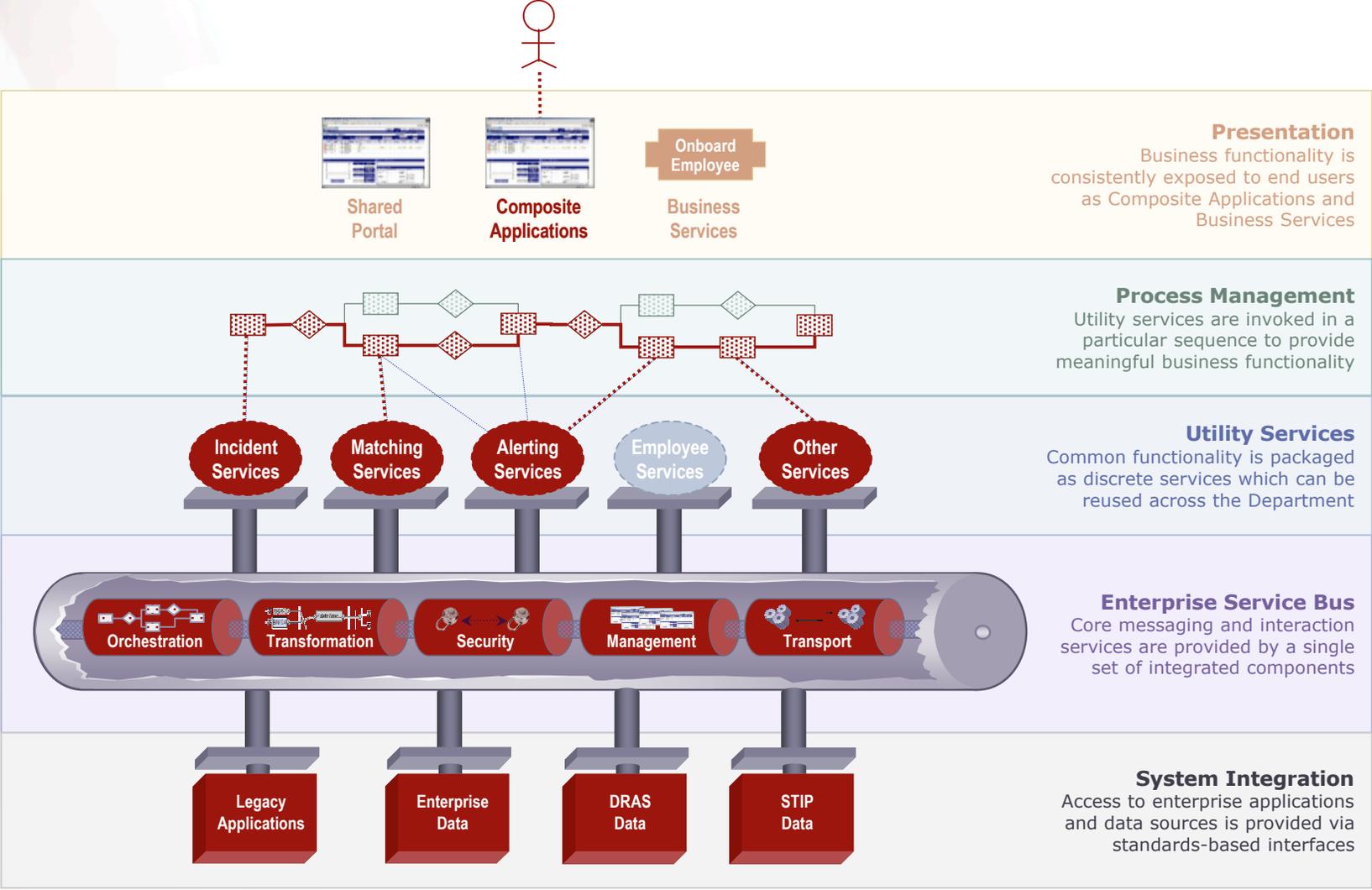


Goal: Provide stakeholders with secure, accurate, timely, actionable, and relevant information.



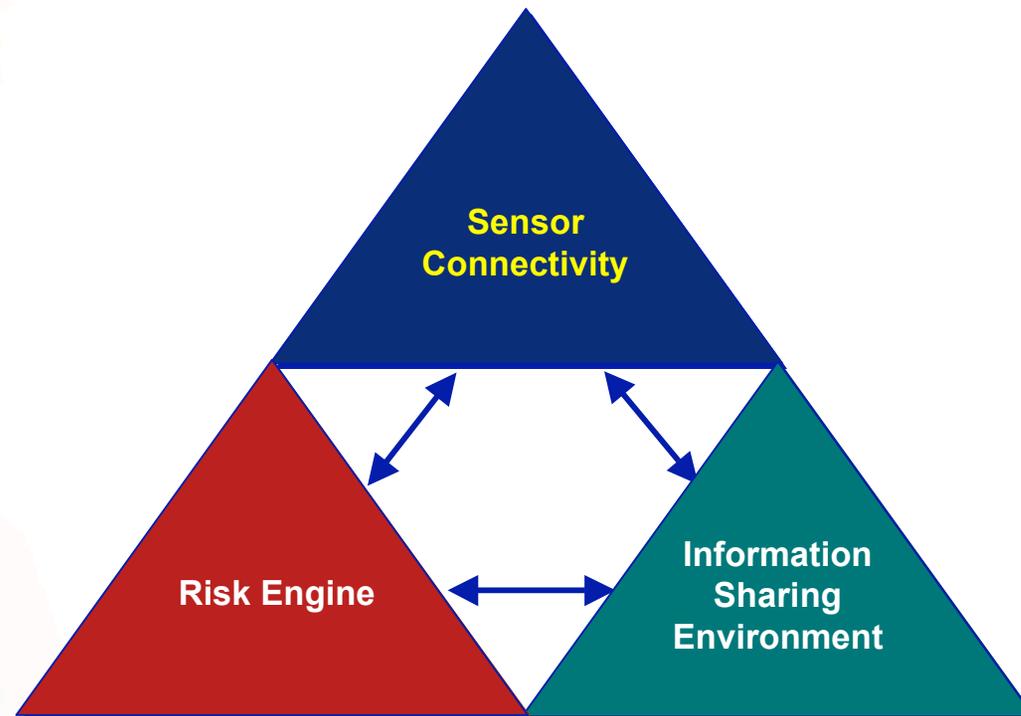
TSA ISE Layered Solution

Business Benefit: Services and processes can be reused across the Department



TSA - Security Technology Integrated Program (STIP)

Sensor Connectivity



STIP (Dynamic Screening Approach)

- **Individualized Screening Processes:** Customize screening process application for passengers and baggage based on calculated risks
- **Dynamic System Reconfiguration:** Dynamic reconfiguring screening equipment in real time for application of required effective screening algorithms
- **Directed Screening:** Utilization of directed screening technology and processes to establish effective screening confidence to manage risk measurement
- **Continuous reassessment:** Information feedback loop to provide on-going reassessment of screening effectiveness to manage overall passenger screening process
- **Screening Operations Efficiency:** Opportunity to establish various TSE combinations and configurations to improve overall checkpoint screening efficiencies will ensuring necessary screening is applied

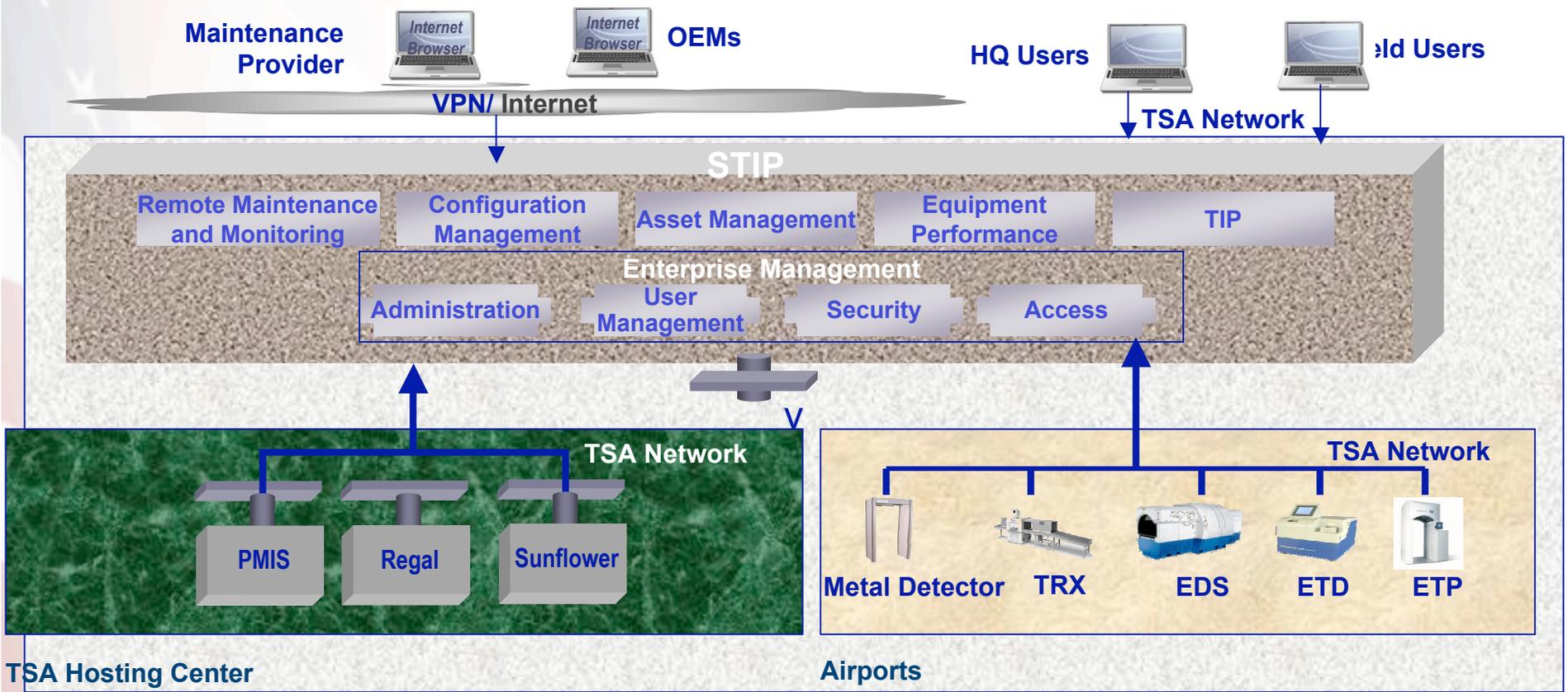


STIP

Security Technology Integrated Program

Description of current effort underway to achieve this vision including addressing the challenge of standardize communications between screening equipment.

STIP is an agency wide enterprise management system that supports bi-directional secured communication between fielded Transportation Security Equipment (TSE) and a centralized data collection/distribution point to enhance the areas of configuration management, asset management, resource management and threat management.



TSA Hosting Center

Airports

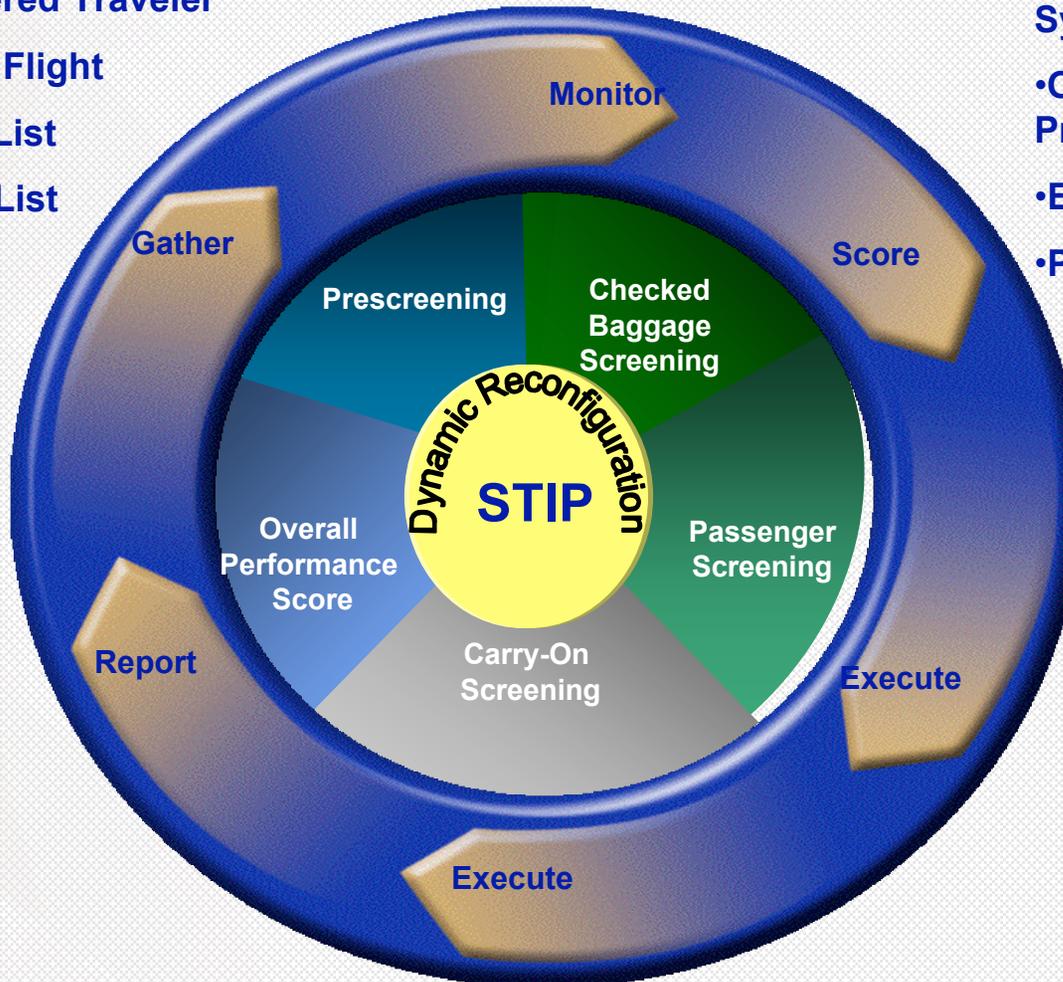


Security Administration

STIP

System Approach

- Registered Traveler
- Secure Flight
- Watch List
- No Fly List



- Explosives Detection Systems
- On Screen Resolution Protocol
- Explosives Trace Detection
- Physical Search

- Handwand
- Explosives Trace Portal
- Metal Detector
- Millimeter Wave
- Shoe Scan
- Finger Scan
- Physical Search

- TIP Ready X-Ray
- Explosives Trace Detector
- Checkpoint EDS
- Physical Search

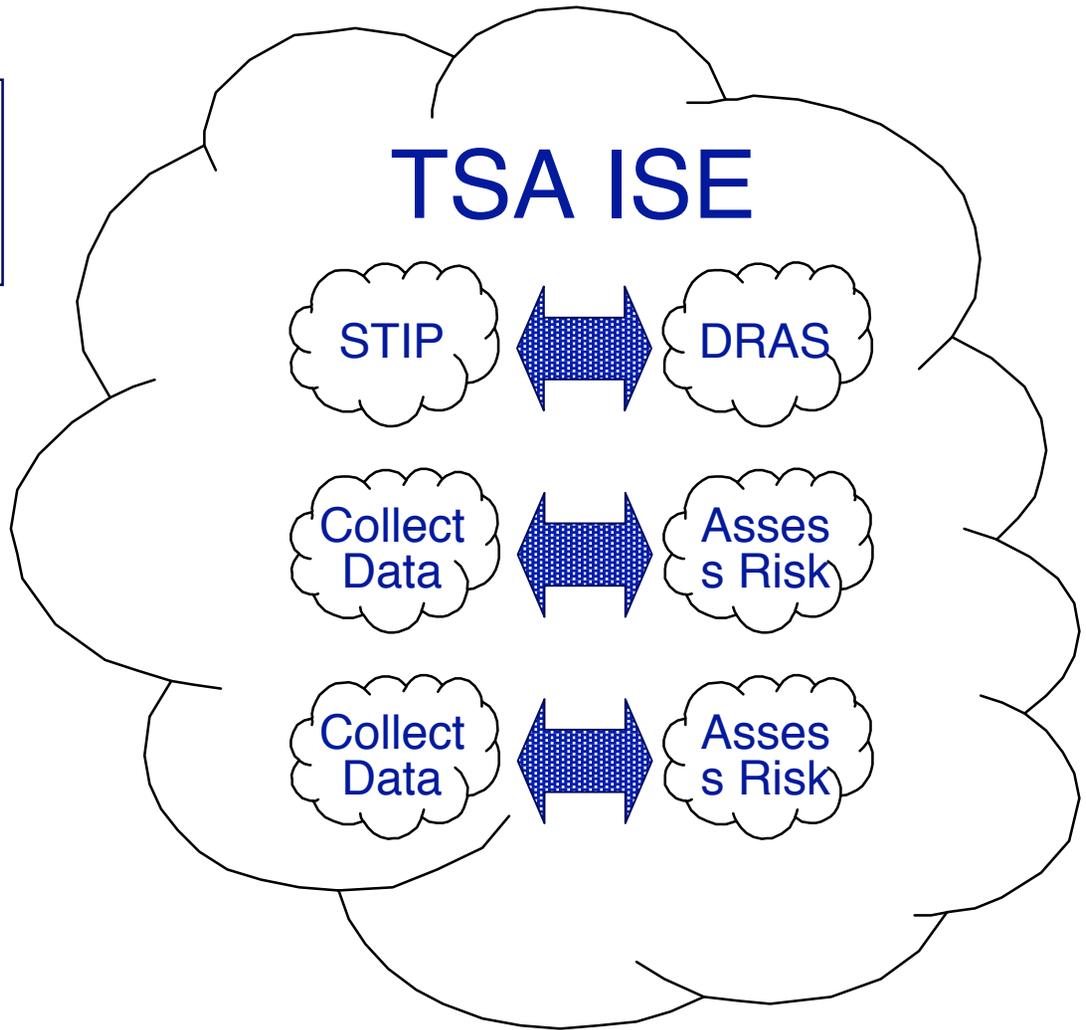
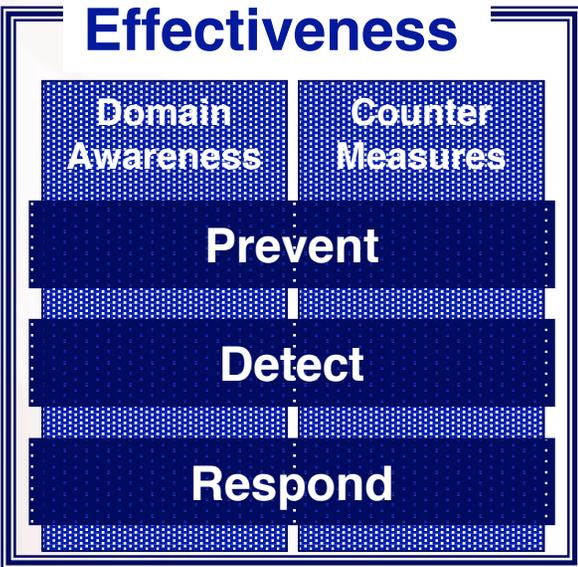


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Wrap Up



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