



Risk-based
security in practice
Turning information
into smart screening

October 2014



Organizations charged with securing our society's vital functions — transit, commerce, communication — have expansive missions that create complex operational and budgetary challenges.



Transportation Security Administration

Screens **1.8 million air travelers** and **4.2 million checked and carry-on bags** at **450 airports** every day

About TSA: Your Safety is Our Priority, Transportation Security Administration (no date)



Federal Bureau of Investigation

Manages over **13,000 special agents** and **3,000 intelligence analysts** who respond to diverse national security threats

FY 2015 Authorization and Budget Request to Congress, Federal Bureau of Investigation (March 2014)



Customs and Border Protection

Processes nearly **1 million U.S. and foreign citizens** at air, land, and sea ports every day along **7,000 miles of land borders** and **95,000 miles of coastline**

Integrity and Personal Accountability Strategy, Customs and Border Patrol (September 2014)

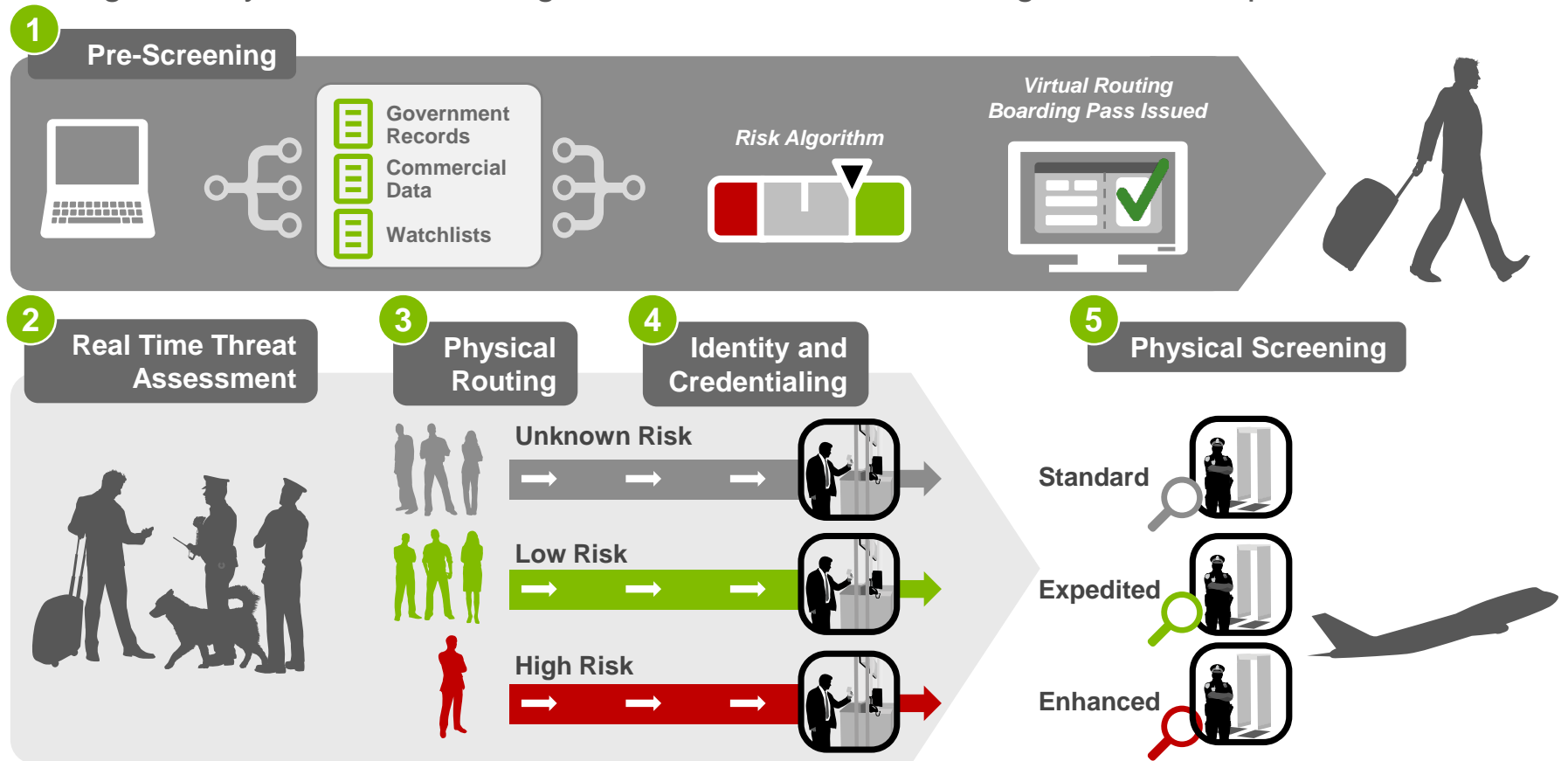
Risk-based security (RBS) offers a solution to balance the many competing priorities of security organizations.



In the aviation sector, security challenges are made even more complicated by the threat posed by adaptive adversaries.

Physical screening is one of many dependent layers of security within a much broader risk-based security (RBS) system.

At the airport level, the RBS system consists of pre-screening, real-time threat assessment, routing, identity and credentialing, and differentiated screening at the checkpoint.



Systems-level thinking offers greater insight into security performance and capability gaps.

Quantifying the different components of the RBS system creates a transparent, defensible, and effective methodology for decision making.

A Trade Space framework can be used to measure the impact of risk-based security on the factors that are most important to the organization.

Trade Space Framework



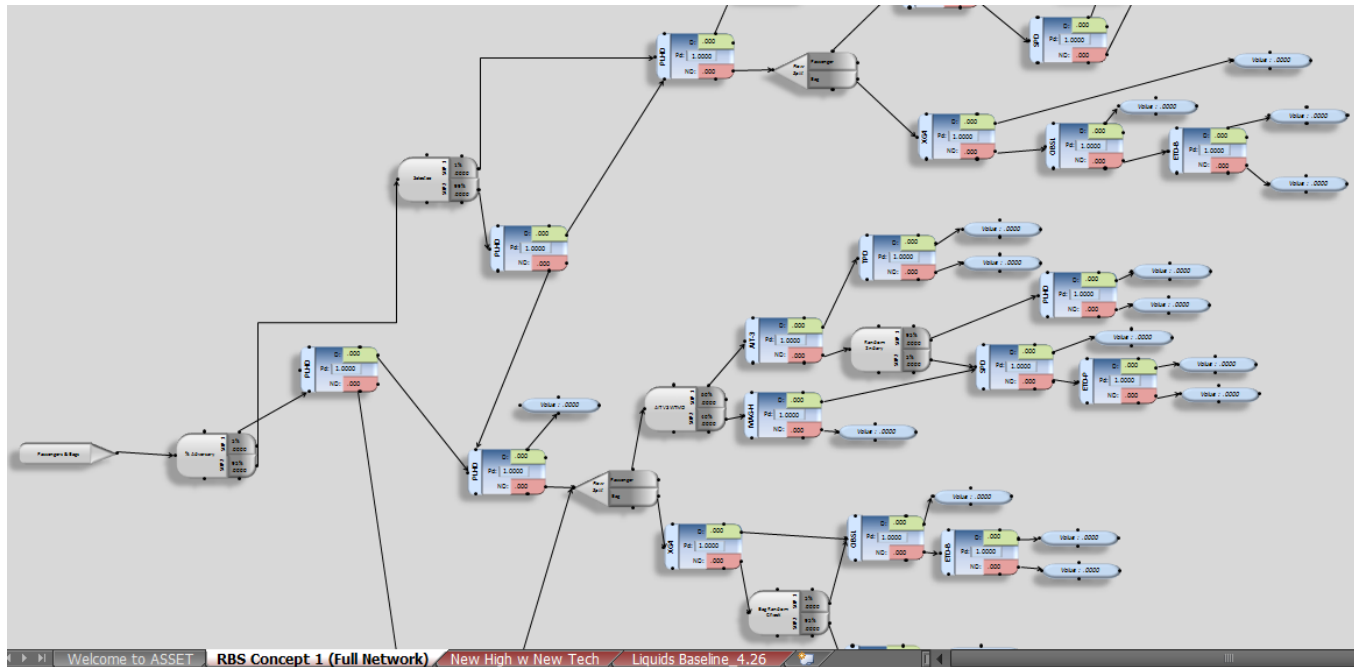
Examples of Metrics for Quantifying RBS Success

- **Security Effectiveness:** Probability of detection of certain threats
- **Operational Efficiency:** Throughput of passengers through the checkpoint; Staffing cost savings
- **Passenger Experience:** Wait times for passengers; Privacy issues and public perception of RBS
- **Industry Vitality:** Impact to aviation industry
- **Fiscal/Policy Issues:** Impact on the cost per passenger screened; Organizational fiscal savings

With a multi-objective tradeoff framework, decision makers are able to compare different options and identify the most effective solution for their organization.

Checkpoint modeling enables policy makers to perform analysis on all of its components to drive acquisitions and deployment decisions.

Checkpoint modeling gives decision makers the ability to measure changes in checkpoint performance, at the airport and system level, as technologies and procedures are modified.

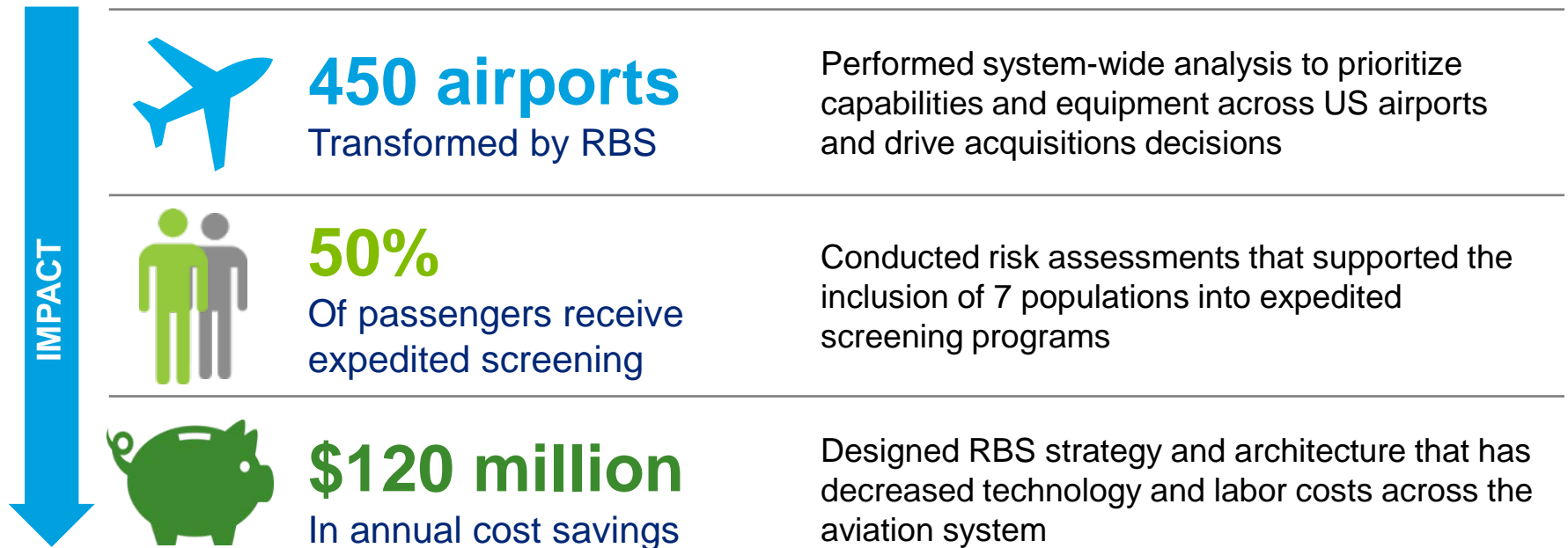


Constraints around adversary behavior, countermeasure deployment, and countermeasure effectiveness can be varied to take into account competing hypotheses or knowledge gaps.

Quantitative modeling tools enable decision makers to perform “what if” analysis to enhance checkpoint system performance.

Successful implementation of RBS principles can drive success across an organization's core mission and strategic objectives.

Deloitte has supported TSA throughout every phase of its transformation to risk-based security and has helped the organization reach key milestones.



A robust RBS strategy requires end-to-end design from strategy development and assessment of risk to the development of performance metrics to ensure success and process integrity.

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As RBS continues to expand, there are three areas that should be addressed to realize RBS gains in a global environment.

Achieving this future vision can improve aviation security operations around the world.



1



Global Harmonization:

Establish the role of and promote harmonization of pre-screening globally



2



Common Security: Develop consistent method to measure system equivalencies



3



Quantified RBS Outcomes: Quantify system-wide changes to help measure against system objectives and to garner support for RBS



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