Is Your Airport Ready for High Speed Baggage Screening?

How to define the best solution for your airport.

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Moderator

Charlotte S. Peed has over 20 years of aviation industry experience working with both public and private sector organizations. Charlotte's past experience includes holding the position of Manager of Community Relations and Chief of Staff at Washington Dulles International Airport for the Metropolitan Washington Airports Authority. She joined the TSA in 2002 as Deputy Area Director for the North Central Area, Aviation Operations. She served in the Transportation Sector Network Management Office as the Stakeholder and Deputy General Manager for Commercial Airports. Charlotte established the Office of Industry Outreach in the TSA's Office of Security Technology. Charlotte is known for her work with airports during the formative stages of the TSA.
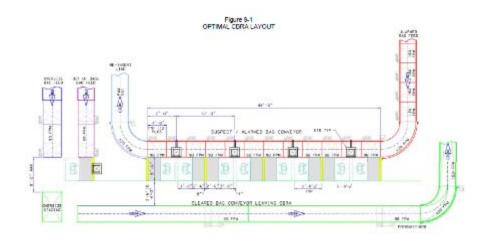
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High Speed EDS Screening

- What is high speed baggage screening and how is it different from current baggage screening technologies used today?
- Will your airport need high speed baggage screening?
- What should airports do to get ready for high speed baggage screening?
- What questions should airports ask about high speed screening equipment?
- What benefits should high speed baggage screening bring to airports?

Figure 9-1
OPTIMAL CBRA LAYOUT

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Presenter Bios

Andrew Goldsmith is the Vice President of Global Marketing for Rapiscan Systems, Inc. He leads a global team that is responsible for the company's strategic product roadmap, the launch of new products, its global branding and messaging and, above all, helping to maintain Rapiscan's double digit revenue growth. His team has helped make the Rapiscan 620 Dual View checkpoint screening system one of only two advanced technology checkpoint screening systems to receive both UK DFT and US TSA approval.

Eric Miller is a Vice President and co-founder of TransSolutions, LLC, a planning firm specializing in the application of operations research methods to solve problems in the transportation industry. Mr. Miller 's primary area of expertise is in the application of simulation tools to address security planning issues, including both passenger screening and checked baggage inspection systems.

Mark Crosby is the Chief of Public Safety and Security for the Port of Portland, a joint port authority that operates three airports and three seaport terminals, including Portland International Airport (PDX). He is an accredited airport executive (AAE) with the American Association of Airport Executives (AAAE), serves as the Chairman of AAAE's Airport Security Committee, and has served on the Public Safety & Security Steering Group for Airports Council International-North America.

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Rapiscan Systems: A Leader in Aviation Security Screening

- Founded 1993; ~800 employees; ~200 engineers
- Parent company: OSI Systems, Inc. (NASDAQ: OSIS)
- Checkpoint baggage screening: TSA qualified 620DV AT
- High speed Multi-view X-ray EDS: MVXR5000
- Advanced people screening (AIT): TSA qualified Secure 1000 Single Pose
- Air Cargo Screening : 10 TSA qualified products
- **New: RTT (Real Time Tomography) High Speed EDS**

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High Speed EDS is Coming

- Existing baggage screening systems nearing end of expected lifetime
- TSA re-capitalization plan is expected to come into effect in 2011 and continue through 2015
- As the economy recovers passenger volumes are expected to increase

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From the TSA PGDS v3.0:

"The high-volume EDS machines are intended to provide solutions for airports that require fully automated in-line systems **designed to handle very high peaks**. High-volume EDS machines are estimated to achieve **at least a throughput of 900 bph with a low false alarm rate.** Also, these machines are expected to have **improved image quality and better OSR operator tools**. These OSR tools should enable operators to achieve higher clear rates."

Higher Volume and Improved Features = Less Cost Now and in the Future

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Today

- Current certified EDS machines operate at 30 FPM or **Medium Speed** with a Max throughput (EDS based on bag size, spacing) = **Approximately 500-600 BPH**

Today

- Medium speed systems with limited features are the norm
    - Medium Speed machines
        - do not operate at variable speeds
        - do not include built-in maintenance tools
        - typically are not able to be easily upgraded
        - have a less-advanced GUI

LEVEL 1
CLEARED BAGGAGE
OUTBOUND CONVEYOR

COMPUTER TOMOGRAPHY
SCREENING
LEVEL 1

FUTURE

Medium Speed and Limited Features = More infrastructure, equipment purchases + maintenance costs to keep up with future passenger growth

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Why Should Airports Care About High Speed EDS?

- Airports incur direct and indirect costs for deployment and maintenance

- Successful EDS deployment/integration depends on active airport involvement, starting in the planning stages

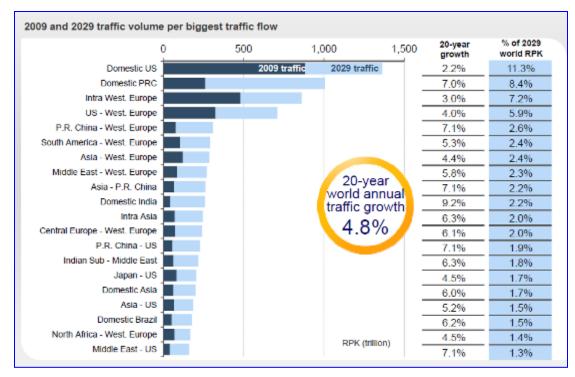- The more educated airports are about high speed EDS -- the better their ROI

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Will your airport need high speed baggage screening?

- Growth in air carrier service will drive screening needs

2009 and 2029 traffic volume per biggest traffic flow

Traffic flow	20-year growth	% of 2029 world RPK
Domestic US	2.2%	11.3%
Domestic PRC	7.0%	8.4%
Intra West. Europe	3.0%	7.2%
US - West. Europe	4.0%	5.9%
P.R. China - West. Europe	7.1%	2.6%
South America - West. Europe	5.3%	2.4%
Asia - West. Europe	4.4%	2.4%
Middle East - West. Europe	5.8%	2.3%
Asia - P.R. China	7.1%	2.2%
Domestic India	9.2%	2.2%
Intra Asia	6.3%	2.0%
Central Europe - West. Europe	6.1%	2.0%
P.R. China - US	7.1%	1.9%
Indian Sub - Middle East	6.3%	1.8%
Japan - US	4.5%	1.7%
Domestic Asia	6.0%	1.7%
Asia - US	5.2%	1.5%
Domestic Brazil	6.2%	1.5%
North Africa - West. Europe	4.5%	1.4%
Middle East - US	7.1%	1.3%

20-year world annual traffic growth **4.8%**

RPK (trillion)

Source: Airbus 2010 GMF

How will you know?

What is your airport's expected growth for the next 10 years?

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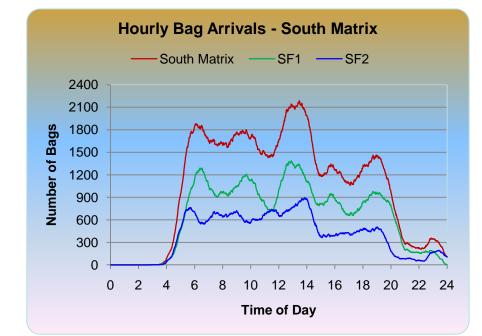# Will your airport need high speed baggage screening?

- Planning for peak processing times helps airports assess need for high speed EDS

How will you know?

What is your airport's peak processing time, today? How about in 10 years?

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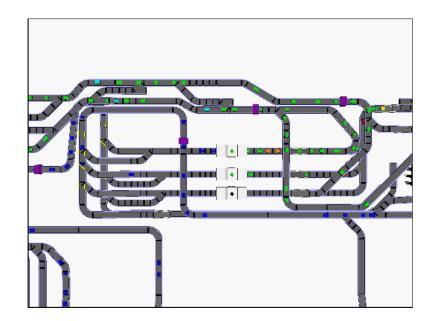**Rapiscan®**
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Hourly Bag Arrivals - South Matrix

**Case Example:
PDX South Matrix**
Peak Bags = 2,185

How modeling can help make best decision for your Airport's CBIS

- CBIS **Modeling can**:
  - Verify equipment quantities
  - Compare equipment to determine if proposed systems meet Airport needs
  - Plan for system redundancy
  - Evaluate proposed systems controls
  - Evaluate BHS conveyor design and layout
  - Estimate expected queuing, system operation, and delivery time performance
- **Modeling communicates** a planned system design and performance specs to project stakeholders

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What questions should airports ask when planning for high speed screening equipment?

1. **Could high speed EDS offer my airport significant operational benefits vs. the alternatives?**

   Any equipment should be designed to contribute to efficient and cost effective operations at the Airport.

2. **Will proposed equipment meet current and future needs for checked baggage screening?**

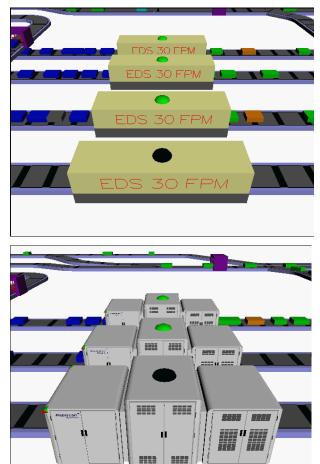   Any equipment placed in-line should have the ability to be easily upgraded to meet the Airport's needs.

14

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What questions should airports ask when planning for high speed screening equipment?

3. **Does the proposed equipment have the ability to run at variable BHS speed?**

    Airports should require that EDS screening technology have the flexibility to operate at variable speeds.

4. **What amount of airport space will the in-line system need?**

    Equipment should require the smallest amount of space, providing the airport with reduced capital expenditure costs.

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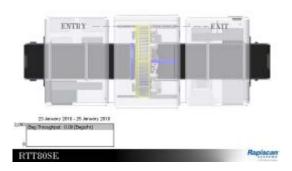# What questions should airports ask when planning for high speed screening equipment?

5. How will high speed EDS improve the airport's operational efficiency?

High Speed EDS will have the fastest transit time from the check-in counter to the aircraft (Point A to Point B).

6. What is the equipment's reliability rating?

Airports should be aware of equipment reliability testing. Airports should demand the most advanced technology i.e. a stationary gantry to ensure system reliability. Decreased BHS line down time.

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What questions should airports ask when planning for high speed screening equipment?

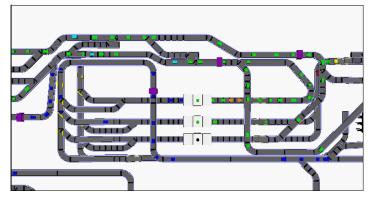**7. Will the airport's BHS be able to integrate well with high speed EDS?**

High Speed EDS should easily be integrated into the BHS to keep CAPEX and operating costs low.

8. Will the EDS have an advanced graphical user-interface that includes tools to help operators more easily identify threats?

EDS must have been designed based on input by actual operators and have a high level of resolution to insure that False Alarm Rates are as low as possible and to enhance the operator's ability to perform on-screen resolution.

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What questions should airports ask when planning for high speed screening equipment?

9. **How is the integration going to be managed for a successful deployment?**

OEM's must have experience in deploying large and complex CBIS projects and the ability to work with all stakeholders to ensure a smooth integration.

10. **What is the level of on site service an OEM can provide?**

OEM's should have a robust customer service organization and should be able to provide 24x7 technical support for the life-span of the EDS.
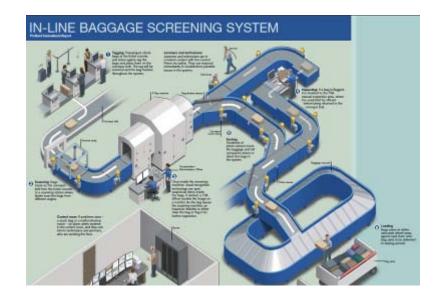

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What steps do airports need to take to get ready for high speed baggage screening?

- **Understand** the TSA's planning/design requirements as outlined in PGDS v3.0
- Be sure that **all stakeholders meet regularly** and provide input into the design
- **Don't make the mistake** of only looking at the EDS machine in isolation – the equipment affects entire airport operations
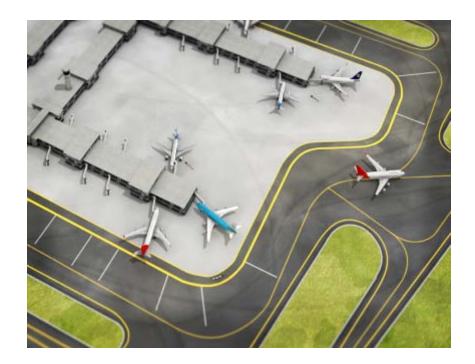- **Budget sufficient time** for the project – keep in mind this is a multi-year process

IN-LINE BAGGAGE SCREENING SYSTEM

19

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What benefits should high speed baggage screening bring to airports?

- High speed should provide for **faster throughput**, getting the baggage to the aircraft with higher efficiency.
- **Reduced long term maintenance costs** due to reduced BHS infrastructure. High speed will require less redundancy and have an overall smaller footprint.
- Installation and **ability to upgrade should not require major infrastructure changes/costs**, reducing capital expenditure.
- Provides the airport with a competitive advantage because it **allows for sustained growth**.

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High speed screening technology is coming worldwide

- In the US, we expect that High Speed EDS will complete regulatory testing in **2011**

- In EU, we expect High Speed EDS will be certified in **2011- 2012**

- We expect **other countries will follow the lead** of TSA and the EU on High Speed EDS technology

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Learn more about the Rapiscan RTT

- **Download the checklist:** What questions should airports ask when planning for high speed screening equipment? **(http://www.rapiscansystems.com/real-time-tomography/High Speed EDS Requirements Checklist.pdf)**

- **Attend a presentation on RTT, Tuesday, February 22** at AAAE/ACC Planning, Design, and Construction Symposium in Denver, CO

- **Visit the web** to learn how the Rapiscan RTT is designed for a future-proof CBIS. **(http://rapiscansystems.com/real-time-tomography/real-time-tomography.html)**

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RTT - Winner of the Engineer 2010 Technology and Innovation Award in Defense and Security.

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Questions?

Thank you!