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eVelocity
Integrated Security Screening Software

"Clear Bag": A New Risk-Based Screening Approach

Conclusions

1 Airports are struggling to meet their security mandate

➤ Need greater focus on Operational requirements

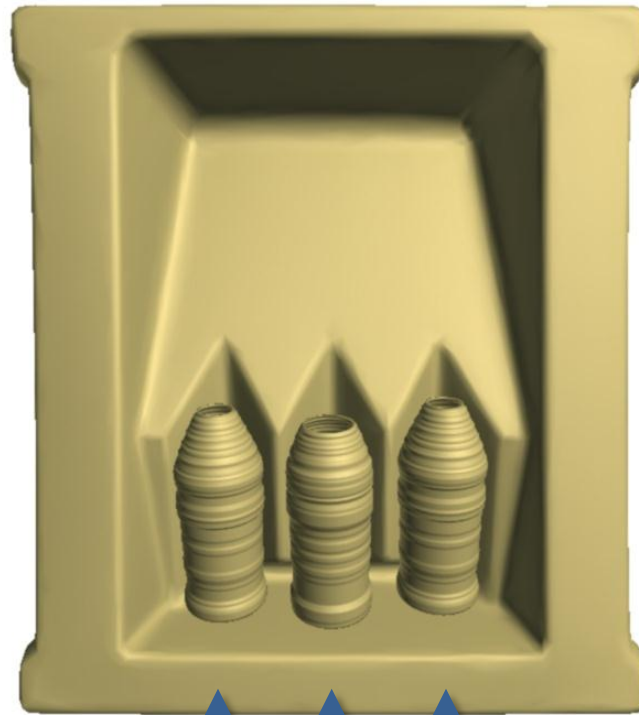**2** A Risk-Based Approach to Security Screening can provide some relief

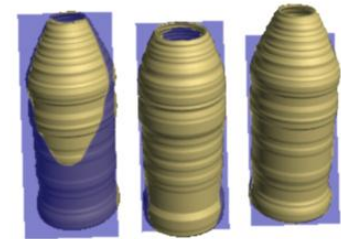➤ Adding unpredictability through ATR is an excellent way to minimize the risk
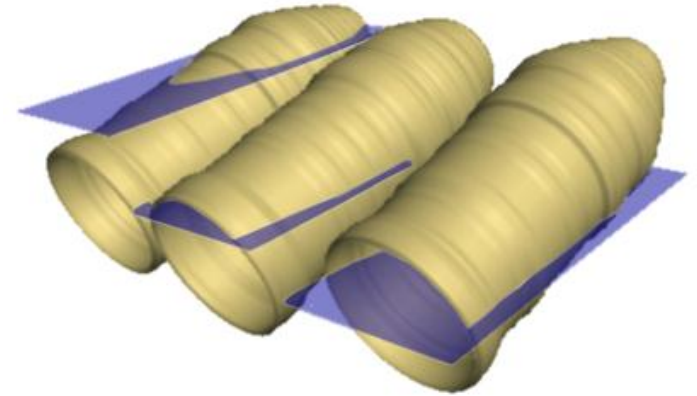
3 "Clear Bag" can reduce screener workload by 5% to 15%

Unique Liquid Explosive Detection Solution

100%   60%   30%
Full   Full   Full

Automatic Meniscus Finding for Partially Filled Bottles

Multiple patents issued in Canada, pending in US & Europe

ECAC Qualified Multi-Platform Liquid Explosive Detection

Fully Integrated OEM Versions

L3
ACX6.4 MV
ACX6.4 DV

GILARDONI

Std 2 **FEP ME640**

Std 2 **FEP ME640 AMX**

ATD Upgrade

smiths

Std 2 **HS6040i**

HS6046si

HS7555i

Capability Enhancement for Checkpoint X-ray Screening

- Single View Scanners:
  - Turns legacy X-ray equipment into Type C Liquid Threat Detection
  - Automated Firearm Detection software also available as an option

- Dual / Multi View Scanners:
  - ECAC Qualified Type C+ detection capability includes both automated liquid threat detection and automated bottle finding software
  - Fully integrated user interface
  - Automated Firearm Detection software also an option
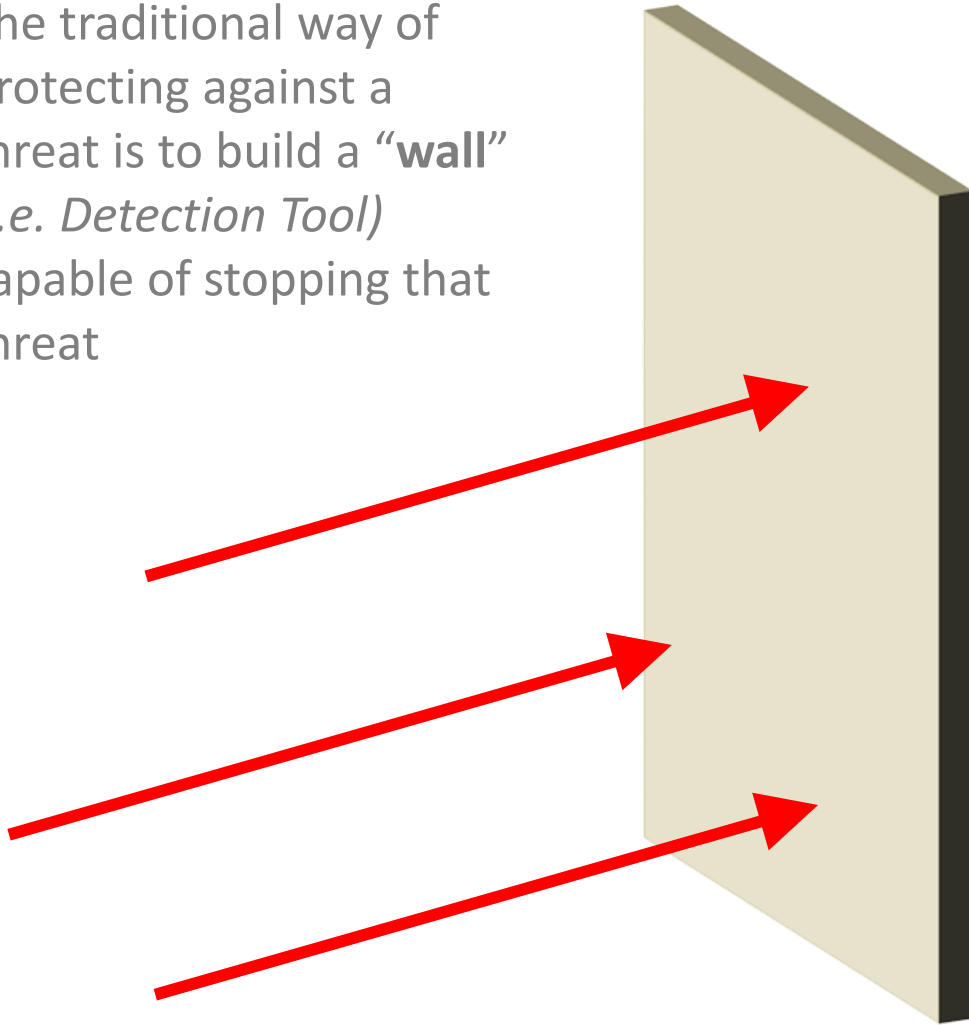 - Upgrade path to Type D and layer striping / virtual laptop removal

LEDS Type C Qualified
ECAC · CEAC

ABOUT RISK-BASED SECURITY SCREENING

About Risk-Based Security Screening

The traditional way of protecting against a threat is to build a "**wall**" *(i.e. Detection Tool)* capable of stopping that threat
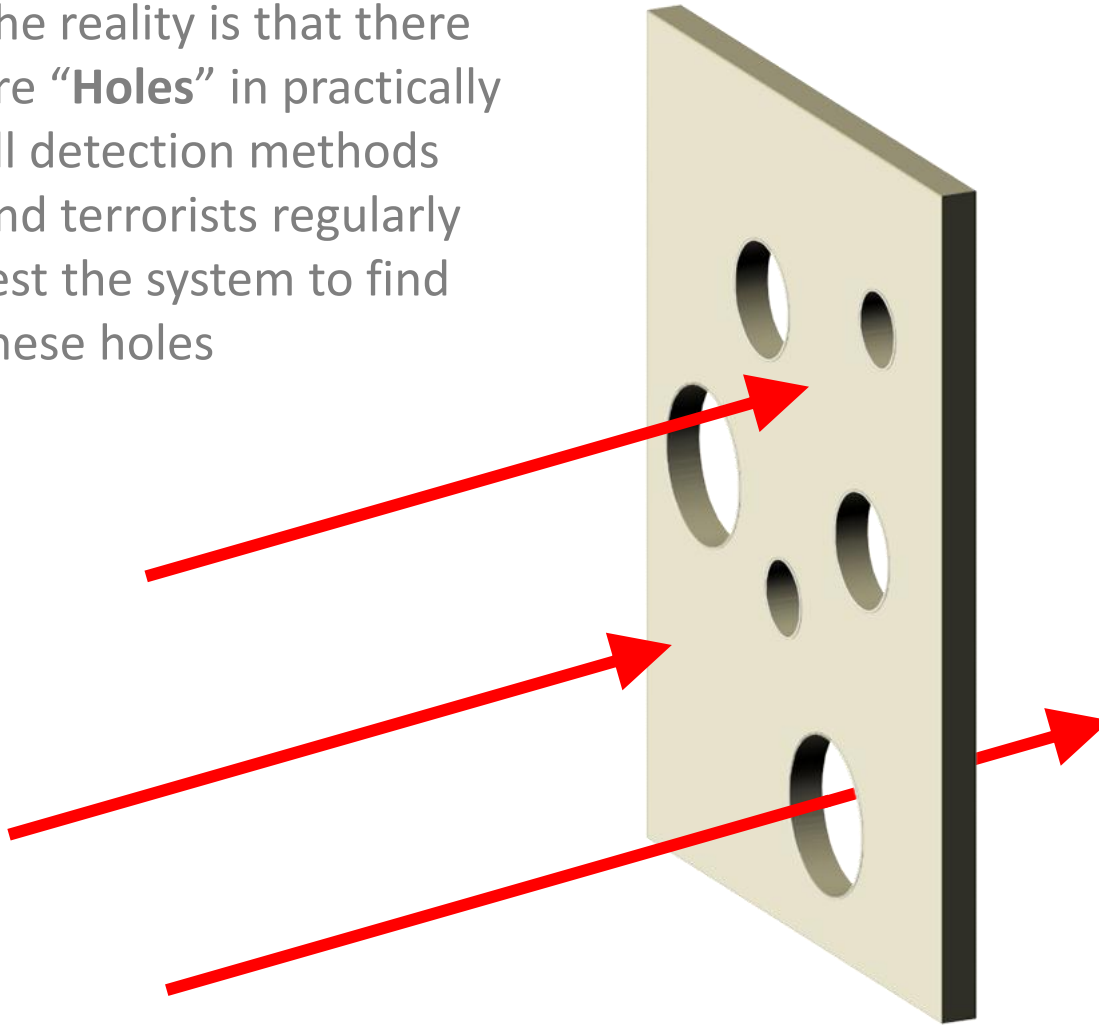
Note: Principles behind the Dutch "SURE!" program

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About Risk-Based Security Screening

The reality is that there are "**Holes**" in practically all detection methods and terrorists regularly test the system to find these holes
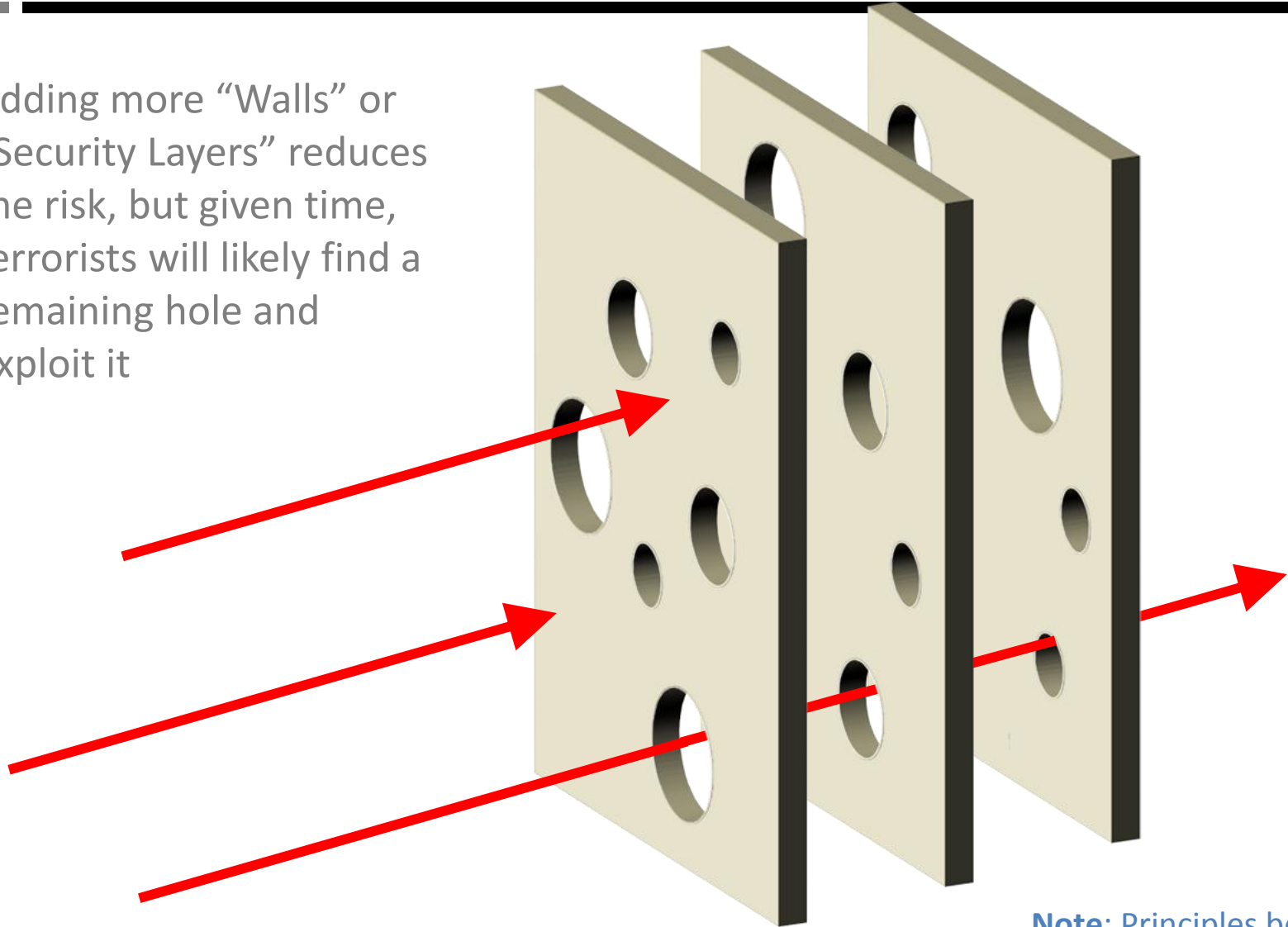

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About Risk-Based Security Screening

Adding more "Walls" or "Security Layers" reduces the risk, but given time, terrorists will likely find a remaining hole and exploit it
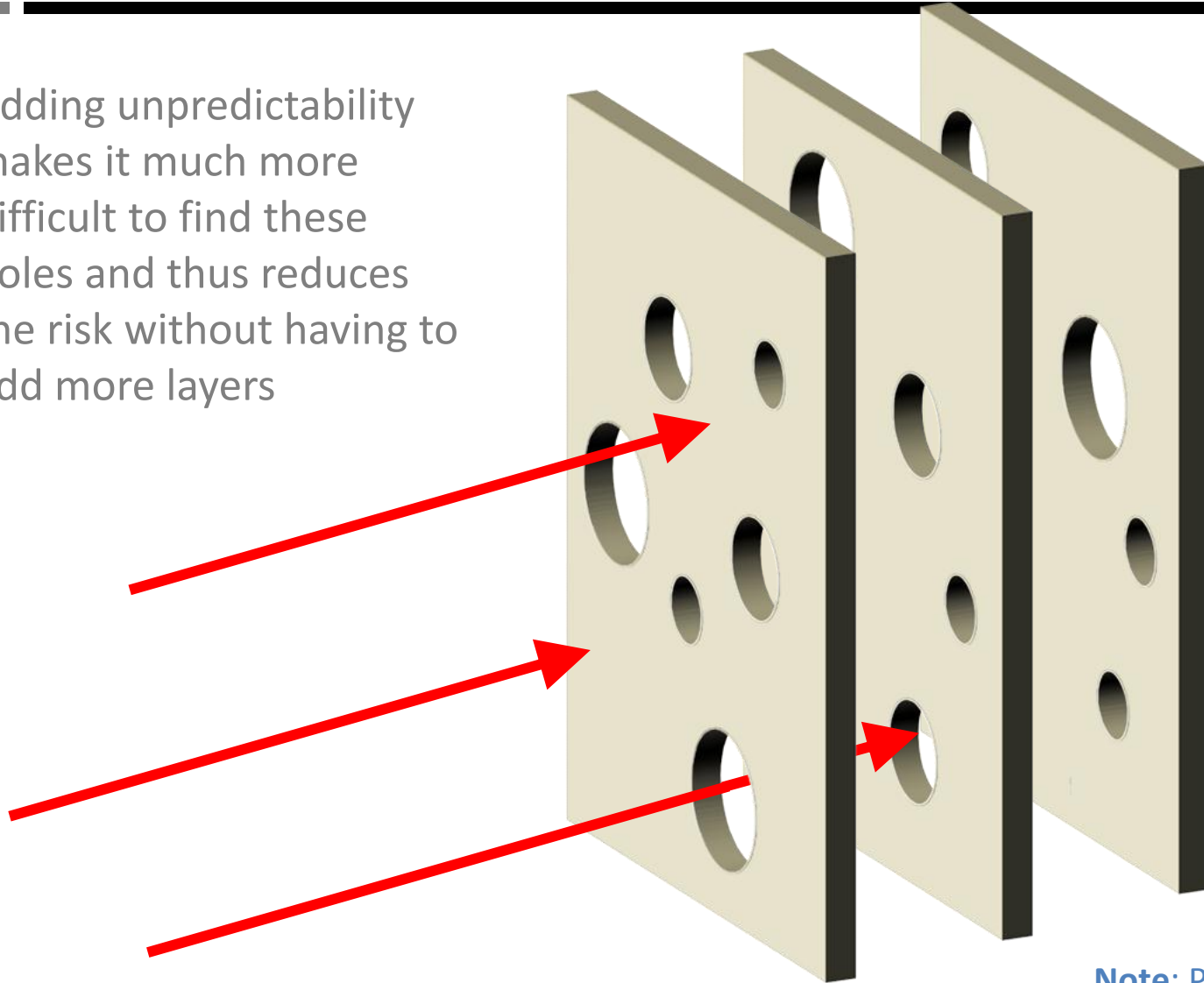
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About Risk-Based Security Screening

Adding unpredictability makes it much more difficult to find these holes and thus reduces the risk without having to add more layers
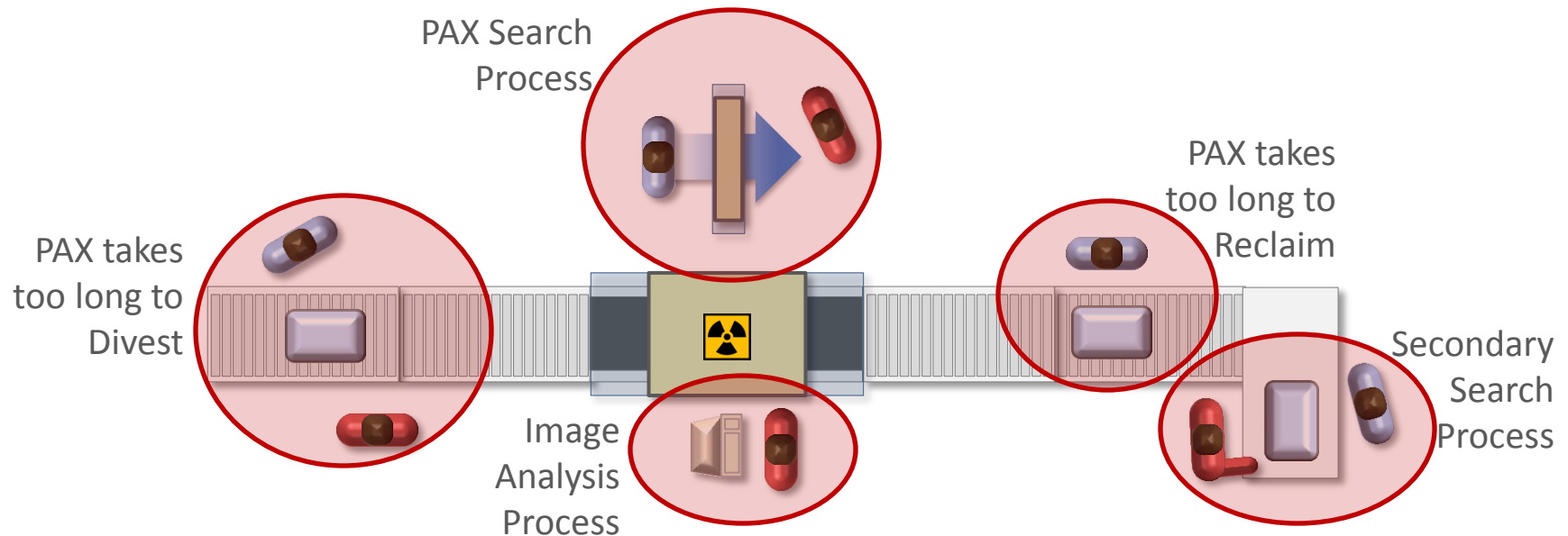

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Typical PBS Process

- **There are several bottle necks in today's process**

- **This is a serial process:**

  - **If one step is stopped, the whole lane is often stopped!**

PAX Search Process

PAX takes too long to Divest

Image Analysis Process

PAX takes too long to Reclaim

Secondary Search Process

Basic Remote Screening Concept

- What if we could operate the X-ray remotely?

1 Data Acquisition *(X-ray + Video)*

2 Data Repository and Queuing

Repository

4 Assisted Alarm Resolution

3 Centralized Multiplexed Remote Image Analysis

More Efficient Configuration
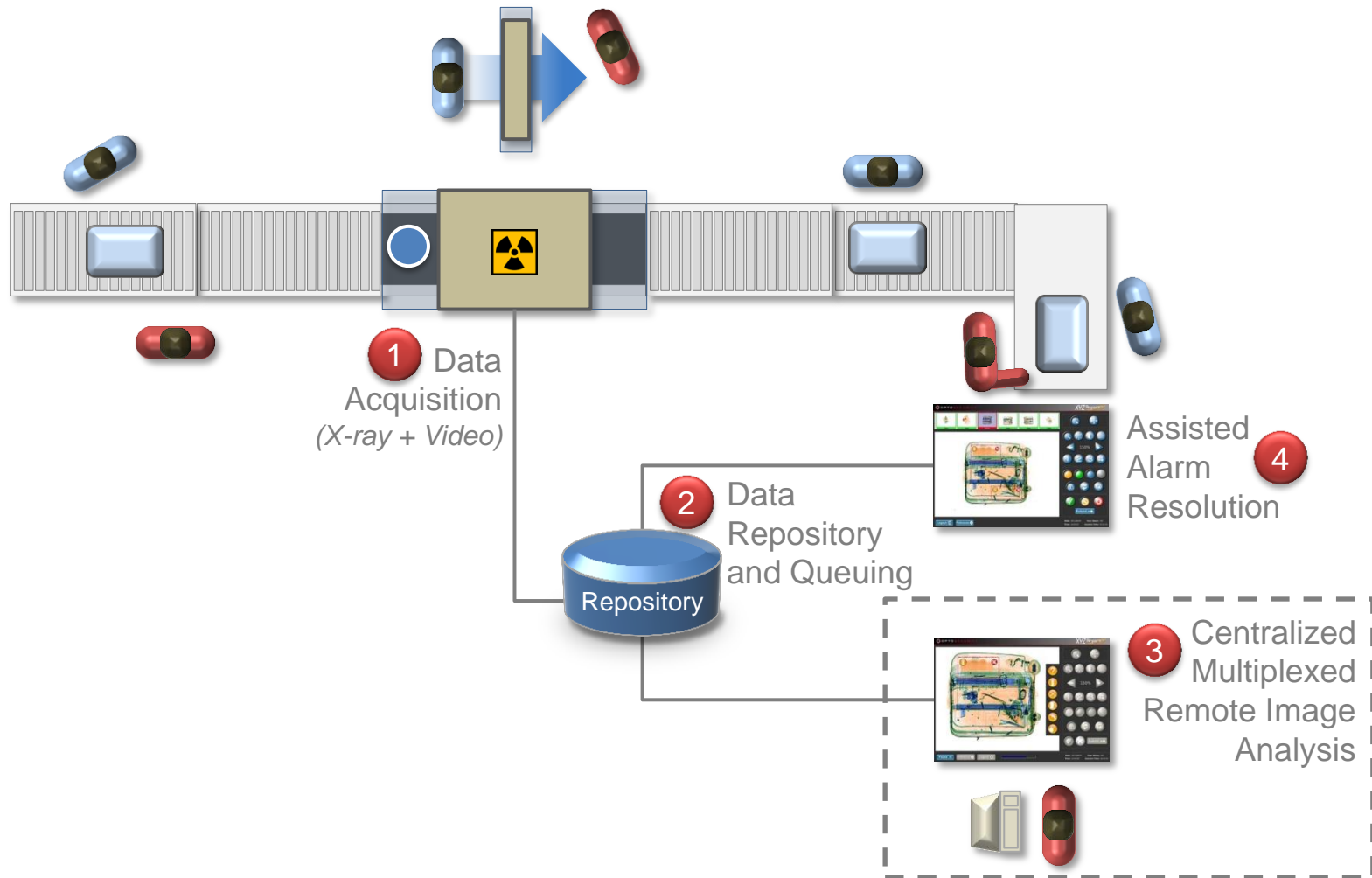
- To take full advantage of Remote Screening, a few key elements should be added...

Forced Bag Separation

Extended Exit Conveyor

Bag Diverter

(5)

(6)

(7)

(1) Data Acquisition *(X-ray + Video)*

(8) Automated Detection

(2) Data Repository and Queuing

Repository

Assisted Alarm Resolution

(4)

(3) Centralized Multiplexed Remote Image Analysis
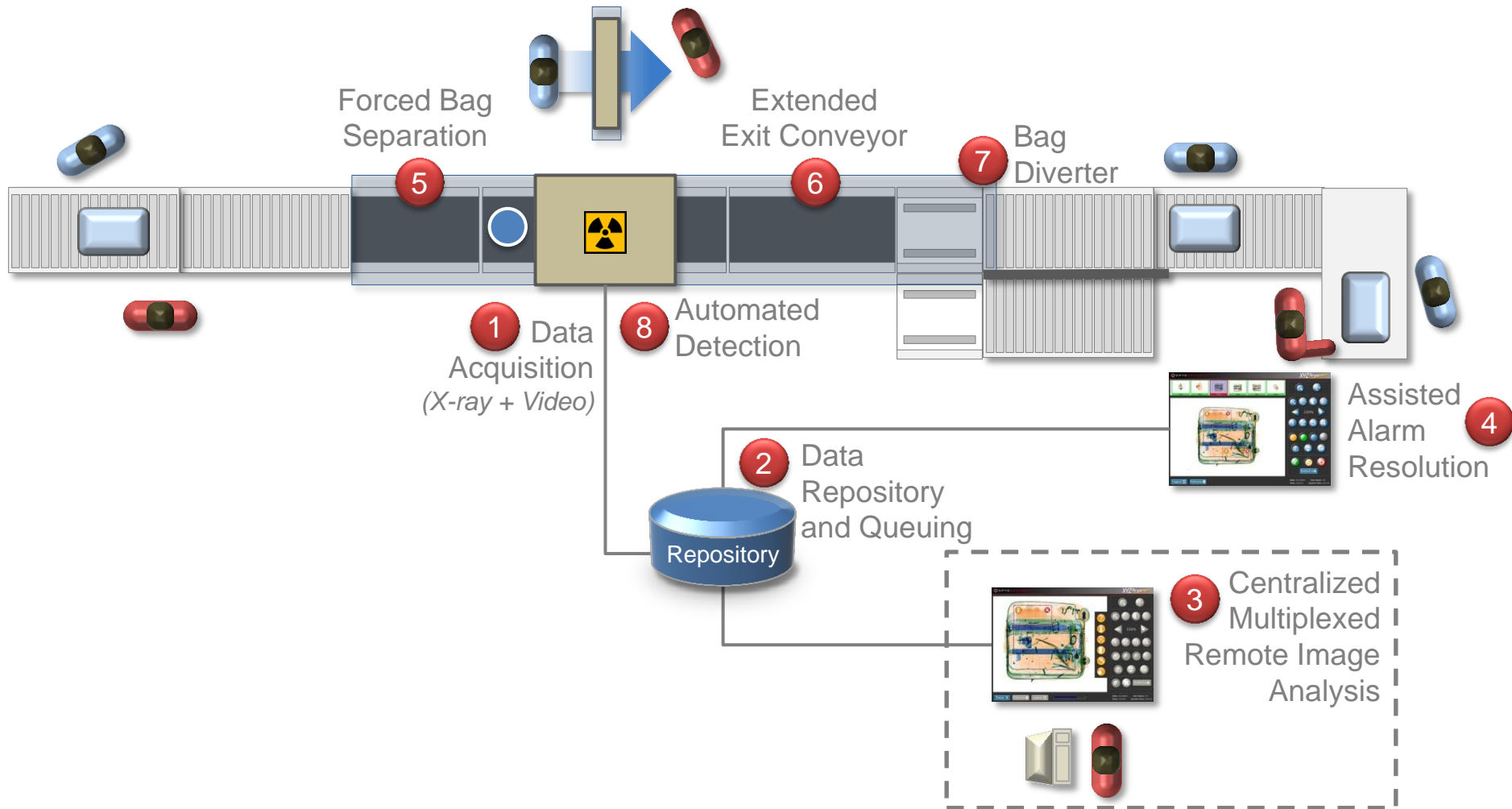
What is "Clear Bag"?

- **Using ATR to automatically clear simple content with very low probability of posing a threat**

  - Not too different from 1st level automated screening for HBS

  - Significantly reduce screener workload

- **Instead of looking for a threat, we look for the absence of a threat**

  - Safe Content gets automatically cleared

  - If we are not sure (i.e. too complex to determine), we pass it on to the screener
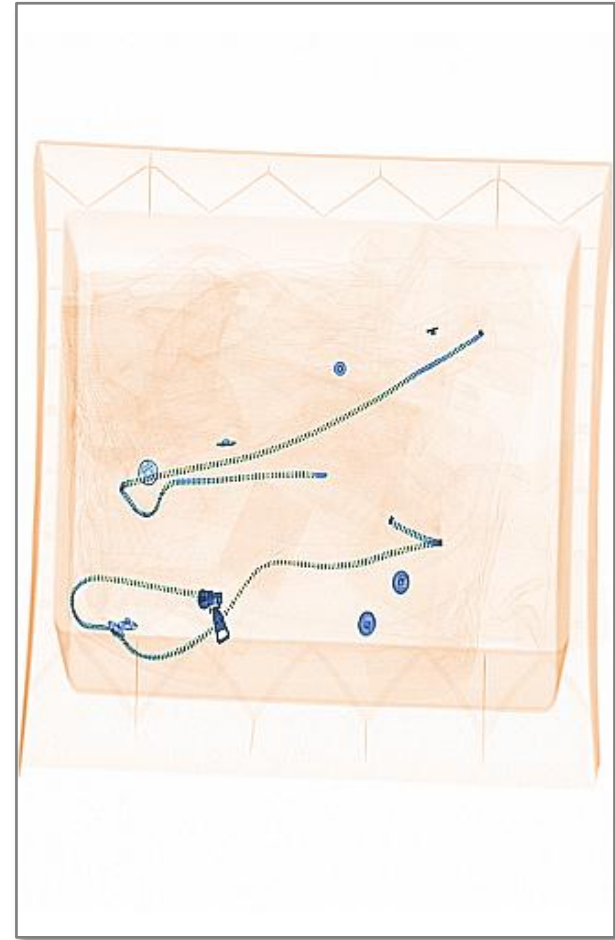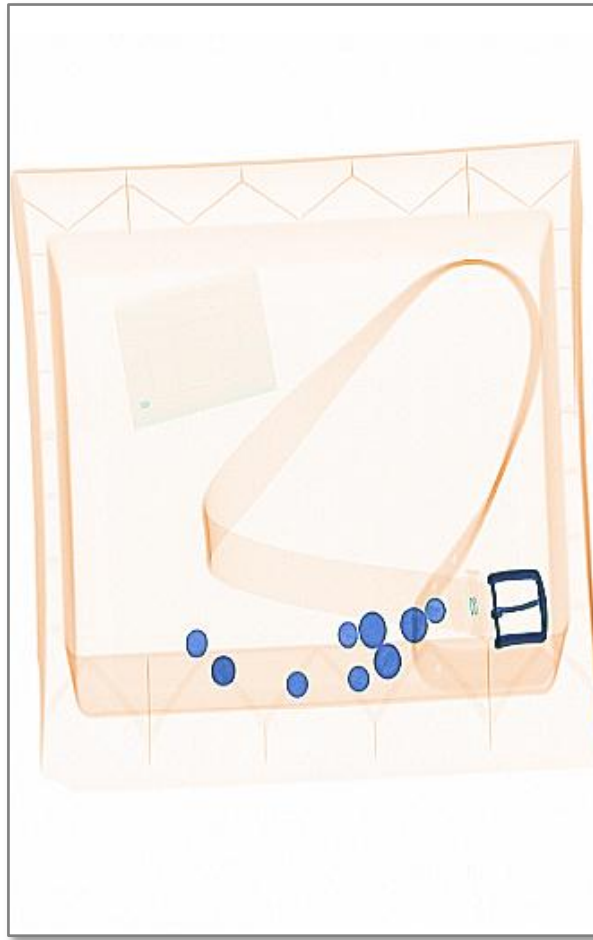
Clear Bag Detection

- We estimate that 5 – 15% of content is simple enough to be automatically be cleared by automated detection algorithms

- **Significant productivity gain** (Higher throughput and/or Reduced Screening Costs)
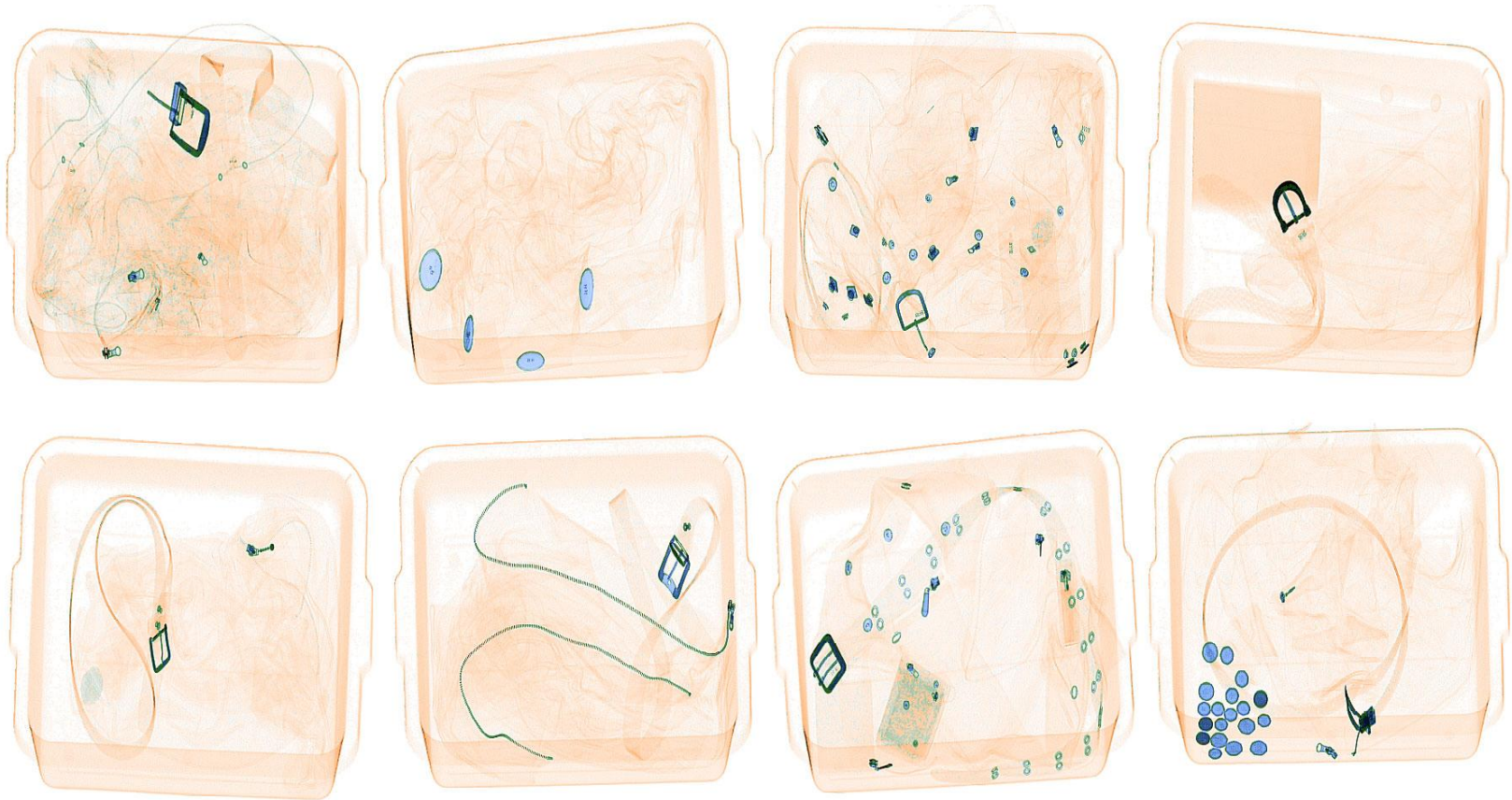
Main Challenge: What is safe content?

- We need to go beyond low density filtering…

Paradigm Shift in Checkpoint Security Screening

- Basic "Clear Bag" module has already been integrated into eVelocity suite

- Off-Line Testing with real images from Schiphol has shown an average of 7% auto-clear
  - Based on approximately 20000 images from multiple checkpoints

- Qualification testing currently in progress at TNO
  - Formal Test Methodology developed by Dutch Regulators

- First operational deployment in Staff Checkpoint being planned for December

What else can we do?

Integrated View leads to Situation Awareness

Metal Detector Data Acquisition

AIT Data Acquisition

Trace Detector Data Acquisition

RT Monitoring & Reporting

Flight Data Acquisition

Real Time (RT) Queue Management

RT Equipment Demand

RT Staffing Demand

RT Service & Maintenance

OVERVIEW

CURRENT

CHECKPOINT A

ALERTS & INCIDENTS

PASSENGER THROUGHPUT   **WAIT TIME**

28   8:23

LUGGAGE THROUGHPUT   **OPEN LANES**

28   11

LANE UTILIZATION

68%

BELT DOWNTIME   **IMAGE FACTOR**   **PROCESS TIME**

28%   2.6   1:18

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