

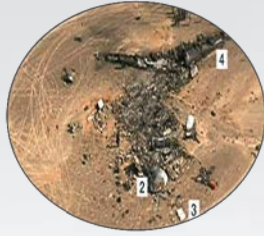
Enhancing Checkpoint Detection Capability & Passenger Experience

Daniel Goh
Assistant President

Constantly Evolving Threats



2006
Transatlantic
Aircraft Plot of
Liquid
Explosives



2017
IED Hidden In
PED
Plot



20XX
What is
NEXT?

2001
Shoe
Bomb Attempt



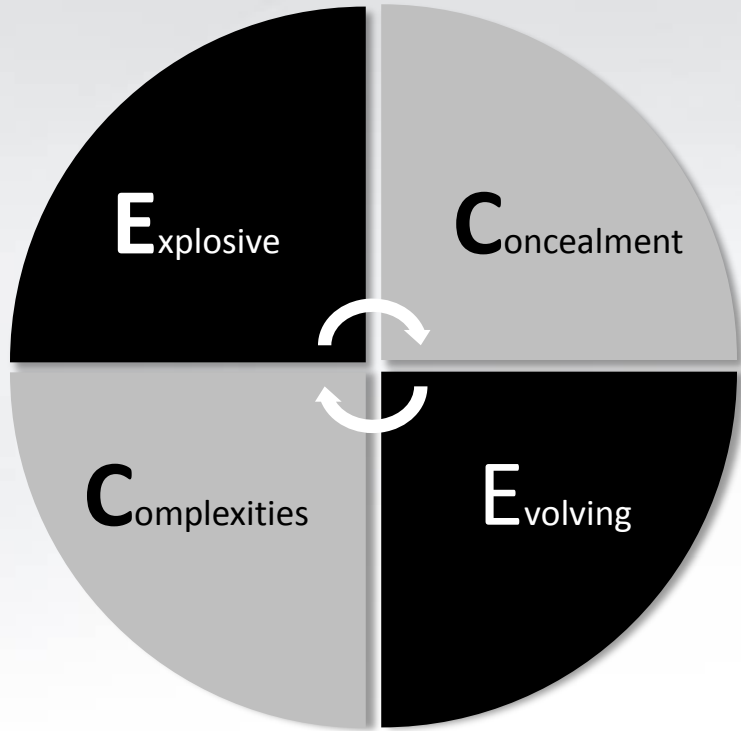
2015
Russian
Aircraft A321
IED
bombing



2017
Poison Gas
and **HME**
Plot



Challenges



Terrorists' Access to Innovative Explosive



Concealment Methods Constantly Evolving



Evolving Threats



Increasing Complexities of Cabin Luggage

General Screening

PREMIUM SCREENING
←

General Screening

 **2**
Security
Checkpoint

 to all Gates
A, B, C, D, N & S Gates

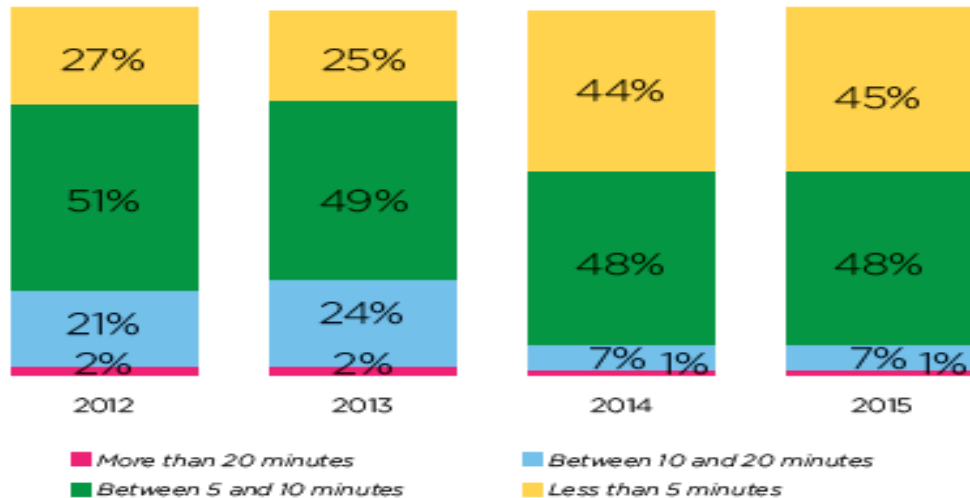


Travel Advisory

<input type="checkbox"/> Prohibited or restricted items	<input type="checkbox"/> Not permitted beyond the gate
<input type="checkbox"/> 3-1-1 rule	<input type="checkbox"/> 3.1 Liquids
<input type="checkbox"/> 3.1.1 Liquids	<input type="checkbox"/> 3.1.2 Powders
<input type="checkbox"/> 3.1.3 Sharp Objects	<input type="checkbox"/> 3.1.4 Firearms
<input type="checkbox"/> 3.1.5 Tools	<input type="checkbox"/> 3.1.6 Sporting Equipment
<input type="checkbox"/> 3.1.7 Other Prohibited Items	<input type="checkbox"/> 3.1.8 Prohibited Items
<input type="checkbox"/> 3.1.9 Prohibited Items	<input type="checkbox"/> 3.1.10 Prohibited Items
<input type="checkbox"/> 3.1.11 Prohibited Items	<input type="checkbox"/> 3.1.12 Prohibited Items
<input type="checkbox"/> 3.1.13 Prohibited Items	<input type="checkbox"/> 3.1.14 Prohibited Items
<input type="checkbox"/> 3.1.15 Prohibited Items	<input type="checkbox"/> 3.1.16 Prohibited Items
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<input type="checkbox"/> 3.1.47 Prohibited Items	<input type="checkbox"/> 3.1.48 Prohibited Items
<input type="checkbox"/> 3.1.49 Prohibited Items	<input type="checkbox"/> 3.1.50 Prohibited Items

Passenger's Expectation

Acceptable queuing time at security checks



(Source: IATA Global Passenger Survey 2015 & 2016)



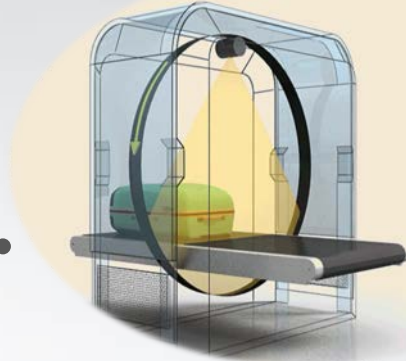
Nuctech's "Key-Line" Checkpoint Solution



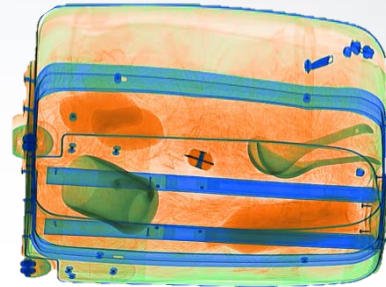
Hand Luggage Screening Solution



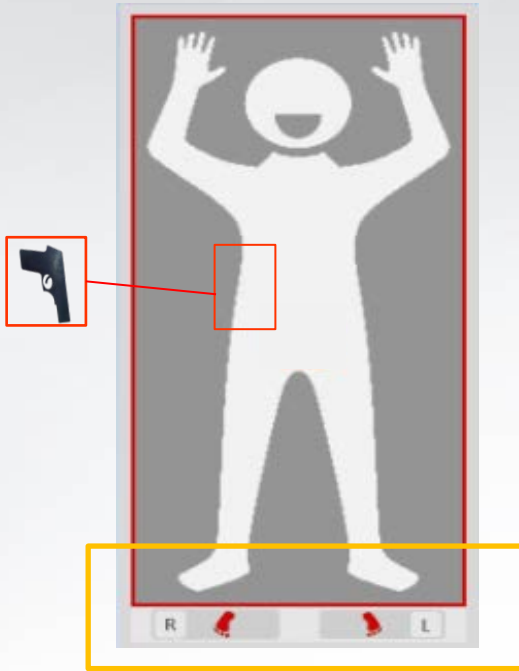
High Resolution Dual
Energy 3D Image
- Explosives,
Flammables



Independent Dual
Energy 2D Image
-Wire Resolution,
Metals



People Screening Solution



Millimeter Wave
Screening



Metal Detection
for Shoes



Combination Technology Approach

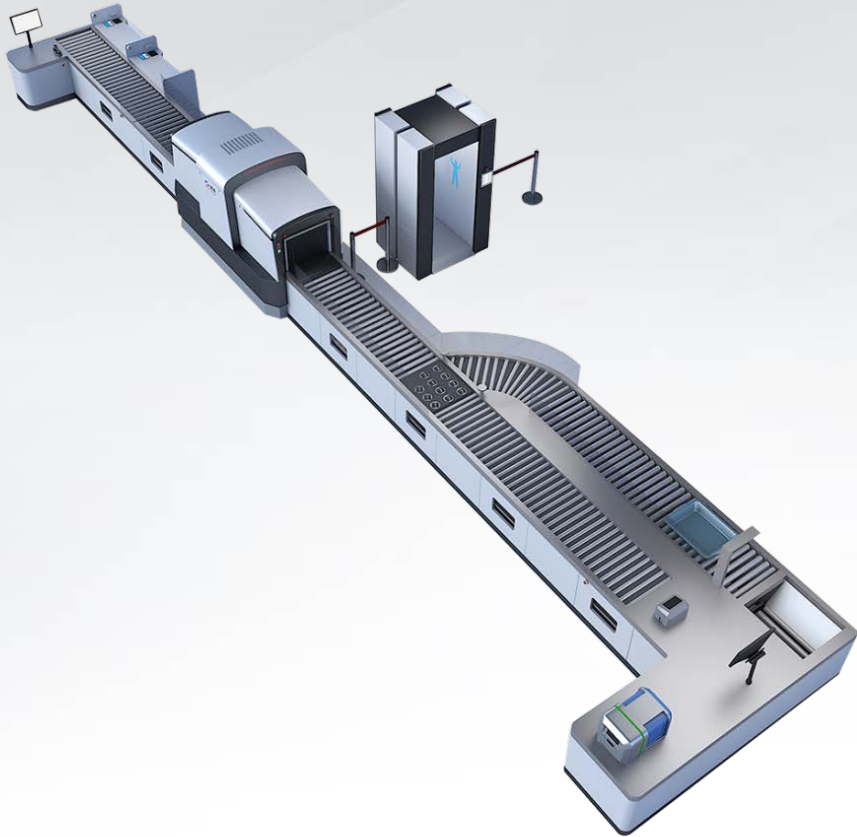


“No Technology Can Singlehandedly Solve Today’s Threat Detection Challenges ... Every Technology Has Its Own Strengths & Limitations”

- Improves Detection Capability
- Flexibility to Deal with Future Threats
- Reduces False Alarm
- Improves Overall Efficiency
(reduced divestments)



Key-Line Checkpoint Solution



- ✓ Enhanced Threat Detection
- ✓ Future Proofing (Adjustable Detection Algorithm)
- ✓ High Throughput (up to 520 Pax Per Hour)
- ✓ Automated Tray Return System
- ✓ Modular Design
- ✓ Reduces Divestment
- ✓ Improved Overall Cost of Ownership



Key-Line Checkpoint Solution

C1视频



Use Of Simulation Modelling

- Simulation Video

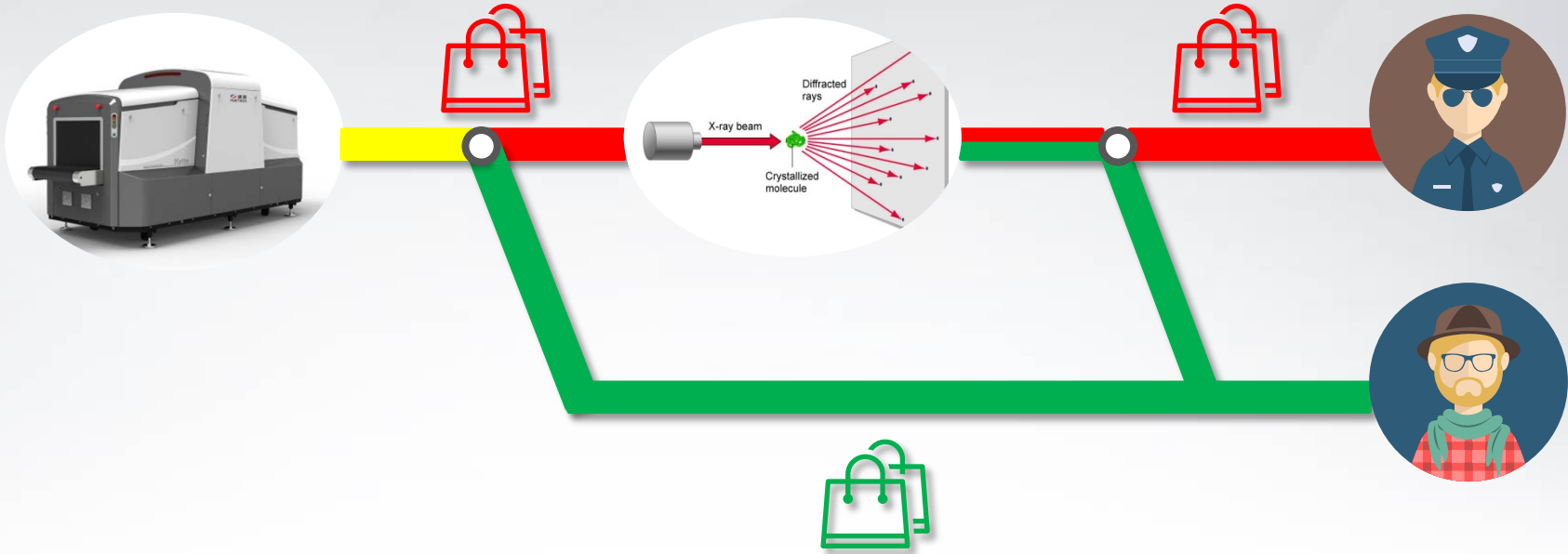




Future Checkpoint Technologies and Solutions



Hand Luggage : Computed Tomography (CT) + Diffraction X-Ray



People Screening : Millimeter Wave + Metal Detection + Tera Hertz In A “Walk Through Portal”



- Augmented by Risk-Based Screening Approach
- Possible Solution For Landside Security

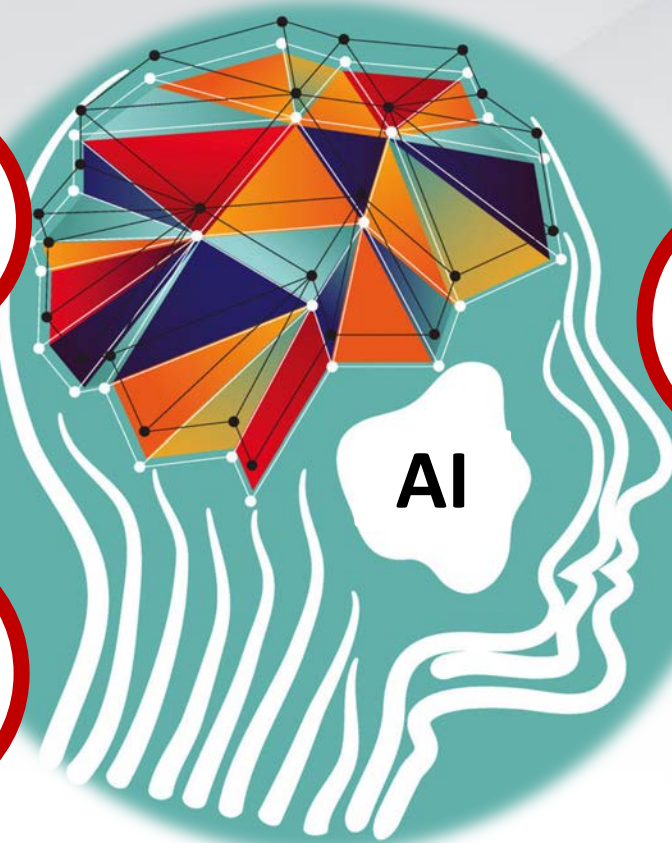
Biometrics



- ✓ Enables Risk-Based Screening
- ✓ Sharing Of Intelligence/Information
- ✓ Improves Overall Checkpoint Efficiency



Artificial Intelligence



Big Data & Block Chain

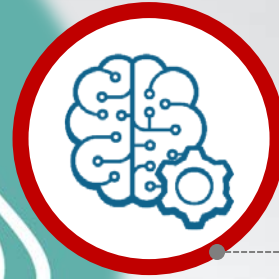


- Data Sharing
- Mass Data Analysis

No Security Staff?



- Infinite Possibilities



Deep Learning

- Shape Recognition (Eg. Lithium Battery)
- Material Discrimination



Future Checkpoint Solution

C3视频



Conclusion

Future Integrated Checkpoint

- Reduces Divestments (Laptop, LAGs stay in luggage)
- Better Utilization of Checkpoint Security Personnel



Combination Technology

- Improves Detection
- Future Proofing (esp Homemade Explosives)
- Reduces False Alarm

The Advent of Biometrics & Artificial Intelligence

- Complements Checkpoint Technologies & Solutions

Passenger Experience

- Checkpoint, Not Chokepoint



THANK YOU

Please Visit Us @ Booth 18



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