Monday, 26 November 2018 - INDUSTRY ENGAGEMENT DAY

Opening Session

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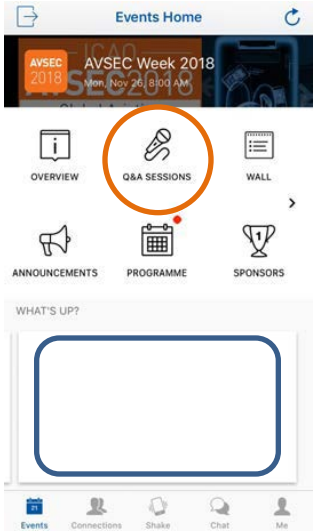
Go to the ‘**questions**’ tab to ask your questions to the panellists or to like questions

Go to the ‘**polls**’ tab to give your answer to the poll



Monday, 26 November 2018 - INDUSTRY ENGAGEMENT DAY

Opening Session

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Session 1 - The Present: Key challenges for States and Industry stakeholders in developing, adapting or deploying effective and efficient screening technologies that can combat evolving security threats to aviation

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Session 1 - The Present: Key challenges for States and Industry stakeholders in developing, adapting or deploying effective and efficient screening technologies that can combat evolving security threats to aviation

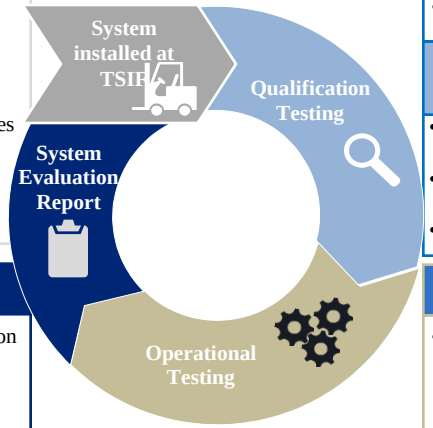
“What is the overall approach employed by TSA in certifying aviation screening technology?”

Roles and Responsibilities of TSA T&E

The T&E Division provides both formal testing and support services throughout the technology procurement lifecycle to TSA Programs, TSA field elements, and other TSA/DHS stakeholders.

T&E Operations and Infrastructure Branch

- Comprised of 3 teams to support Agency's T&E of Transportation Security Equipment (TSE) at TSIF and in the field:
  - TSA Systems Integration Facility (TSIF) Operations
  - Test Article Management (TA)
  - Configuration Management (CM)
- Creates test articles, certifies testing processes, executes facility modifications, manages equipment logistics, and supports testing activities



TSIF Test Branch,

- Supports Qualification Testing (QT) activities in addition to planning, executing, and evaluating test events in support of Developmental Testing (DT), Test Article development, and ad-hoc test requests (pop-ups)
- Conducts demonstrations to stakeholders and tours to representatives of various organizations

Transportation Security Laboratory (TSL)

- Supports DT and QT with core capabilities in explosives and weapons detection
- Focuses on detection testing of bulk and trace explosives detection systems and equipment
- Performs formal certification testing

Evaluation & Quality Assurance Branch

- Establishes effectiveness and suitability evaluation metrics for operational testing that supports acquisition decisions
- Provides comprehensive evaluations of systems' effectiveness and suitability, and documents findings in System Evaluation Reports (SER)
- Conducts "pop-up" equipment evaluations, including experiments/evaluations to support real-world emerging threats

Operational Test Branch

- Conducts planning and execution of Operational Testing (OT) events in a realistic, operational environment (airports) to independently validate the extent to which candidate systems are operationally effective and suitable for deployment
  - OT occurs once a system has successfully met DT/QT exit criteria and is conducted in support of an acquisition decision
  - OTB conducts additional field assessments that do not support an acquisition decision

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Session 1 - The Present: Key challenges for States and Industry stakeholders in developing, adapting or deploying effective and efficient screening technologies that can combat evolving security threats to aviation

"What is the overall approach employed by the European Civil Aviation Conference (ECAC) in approving aviation screening technology?"

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“What is the importance of establishing detection standards / testing methodologies specific to cargo screening?”

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“How would an ICAO global aviation detection standard impact the airport operator?”

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"What are the benefits of an ICAO global aviation detection standard to internal investments in resources and research & development?"

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"What role could IATA serve to help ICAO to drive toward minimum global performance-based requirements?"

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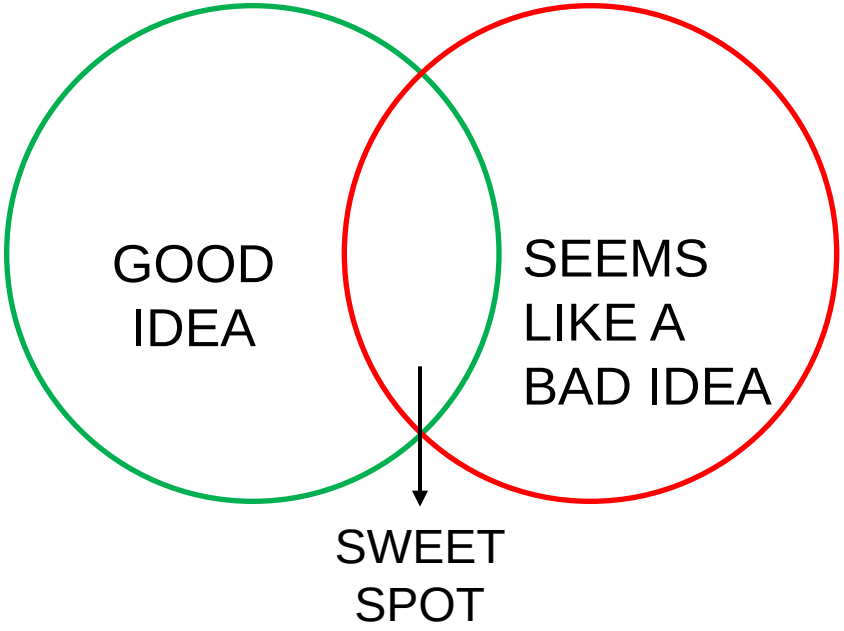
Session 2 - The Future: A need for ICAO, States, and Industry to respond more effectively to aviation threats through the use of emerging technology and processes



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Session 2 - The Future: A need for ICAO, States, and Industry to respond more effectively to aviation threats through the use of emerging technology and processes

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Session 3 – Reimagining security screening to relieve the pressure at the checkpoint

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Session 3 – Reimagining security screening to relieve the pressure at the checkpoint

"Are we able today to share information such as x-ray images with other entities? What are the advantages of having an open architecture at checkpoints?"

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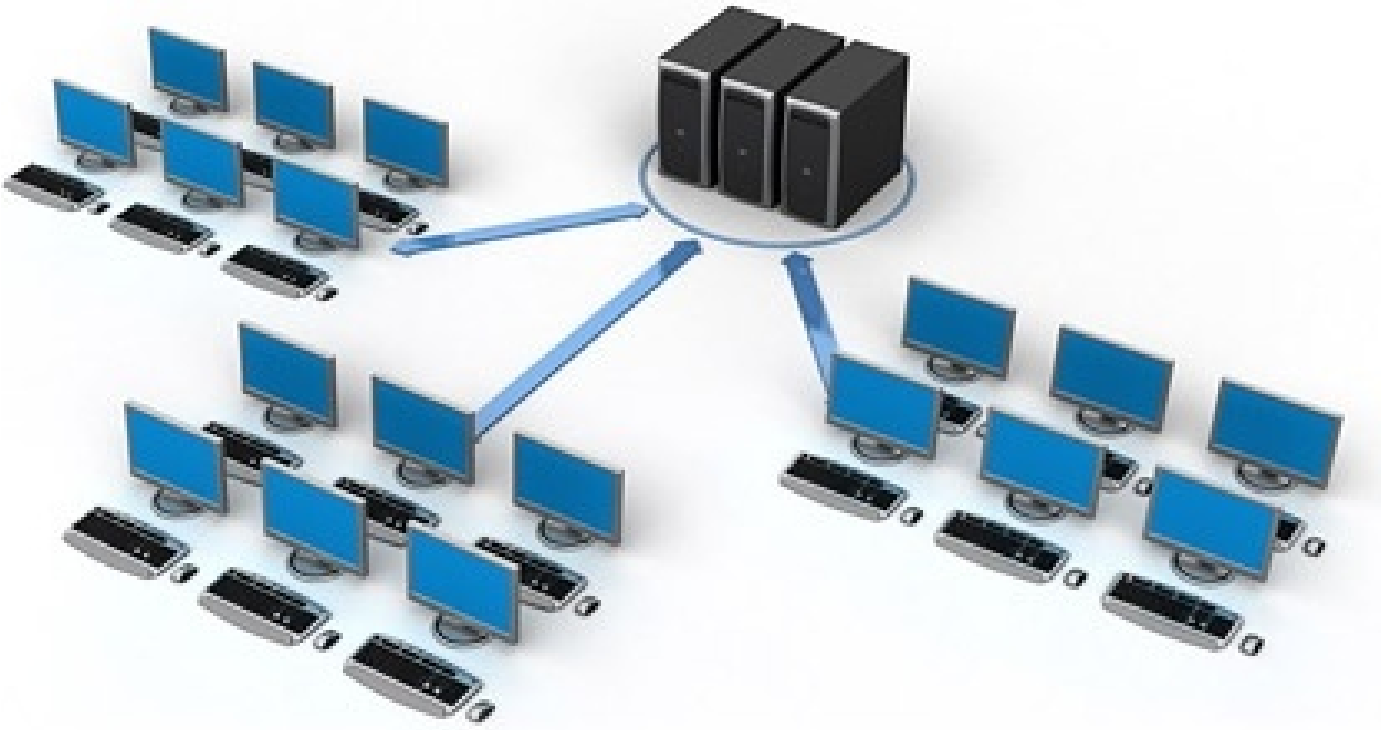
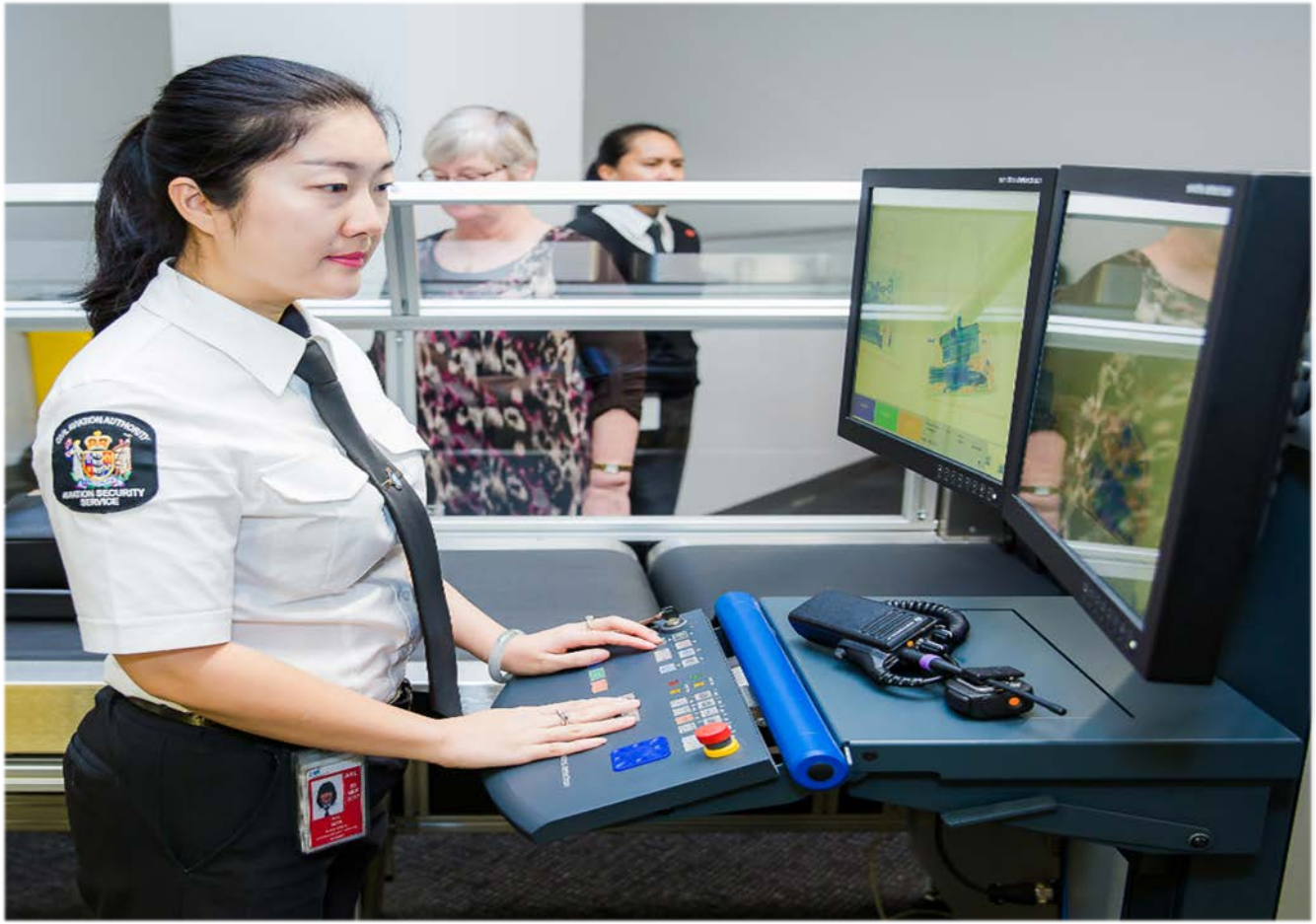
Session 3 – Reimagining security screening to relieve the pressure at the checkpoint

"How can networking of images help optimize resources at smaller airports and streamline border control checks?"

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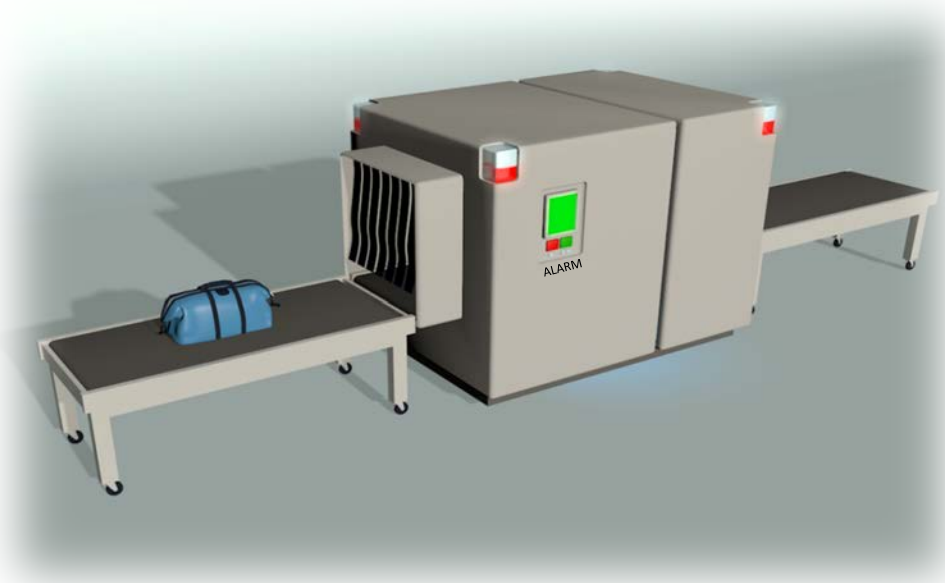
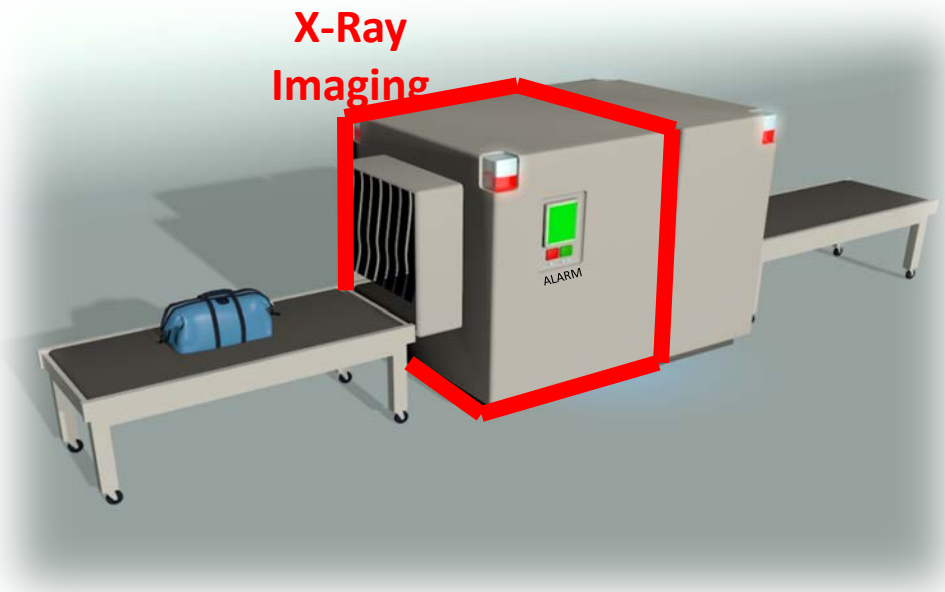
Session 3 – Reimagining security screening to relieve the pressure at the checkpoint

“How can we make sure that the requirement to detect explosives does not impede passenger flow through the passenger screening checkpoints?”

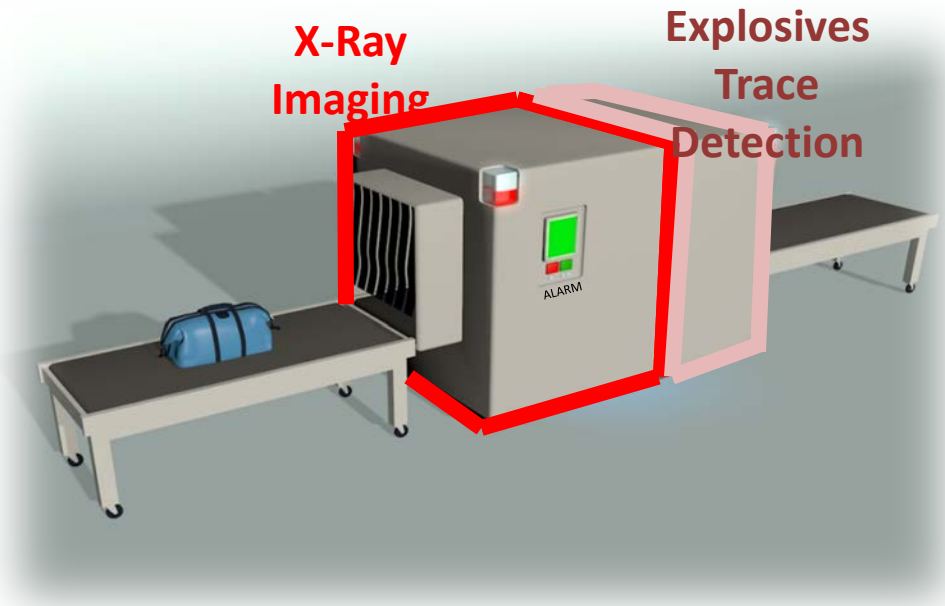
Re-Imagining Security Screening



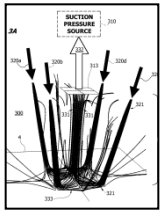
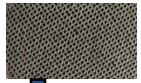
Re-Imagining Security Screening



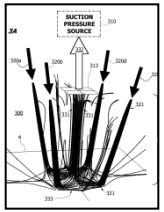
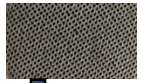
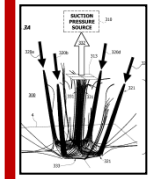
Re-Imagining Security Screening



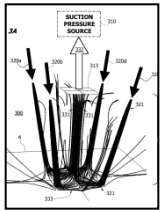
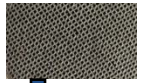
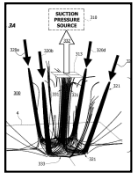
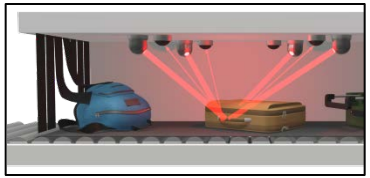
Explosive Trace Detection Primary Screening Options

	Option 1
Current Proof of Concept	***Surface Swipe to Collect Sample***
Use in Future Checkpoint	***Use Air Jet to Collect Sample***  U.S. Patent 8307723 B2 TRAP  RELEASE

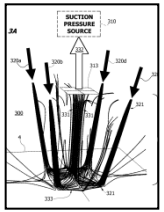
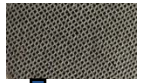
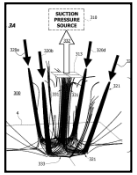
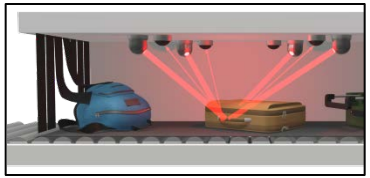
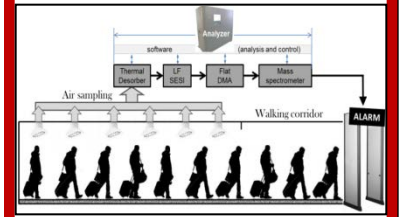
Explosive Trace Detection Primary Screening Options

	Option 1	Option 2
Current Proof of Concept	***Surface Swipe to Collect Sample*** 	***Environmental Research*** Research-Grade Aerosol Analyzer http://www.aerodyne.com/products/aerosol-mass-spectrometer
Use in Future Checkpoint	***Use Air Jet to Collect Sample***  TRAP  RELEASE U.S. Patent 8307723 B2	***Compact Aerosol Analyzer***  DIRECT Tactical Aerosol Analyzer Aggarwal et al., https://doi.org/10.1063/1.4984226

Explosive Trace Detection Primary Screening Options

	Option 1	Option 2	Option 3
Current Proof of Concept	***Surface Swipe to Collect Sample*** 	***Environmental Research*** **Research-Grade Aerosol Analyzer** **http://www.aerodyne.com/products/aerosol-mass-spectrometer**	***Forensic Microscope***
Use in Future Checkpoint	***Use Air Jet to Collect Sample***  **TRAP**  **RELEASE** **U.S. Patent 8307723 B2**	***Compact Aerosol Analyzer***  **DIRECT** **Tactical Aerosol Analyzer** **Aggarwal et al., https://doi.org/10.1063/1.4984226**	***Standoff Chemical Imaging***  ***Under Development***

Explosive Trace Detection Primary Screening Options

	Option 1	Option 2	Option 3	Option 4
Current Proof of Concept	***Surface Swipe to Collect Sample***	***Environmental Research*** Research-Grade Aerosol Analyzer http://www.aerodyne.com/products/aerosol-mass-spectrometer	***Forensic Microscope***	***Canines***
Use in Future Checkpoint	***Use Air Jet to Collect Sample***  TRAP  RELEASE U.S. Patent 8307723 B2	***Compact Aerosol Analyzer***  DIRECT Tactical Aerosol Analyzer Aggarwal et al., https://doi.org/10.1063/1.4984226	***Standoff Chemical Imaging***  ***Under Development***	***Ultra-Trace Vapor Analysis***  https://www.seadm.com/products/vapour-analysisdetection/

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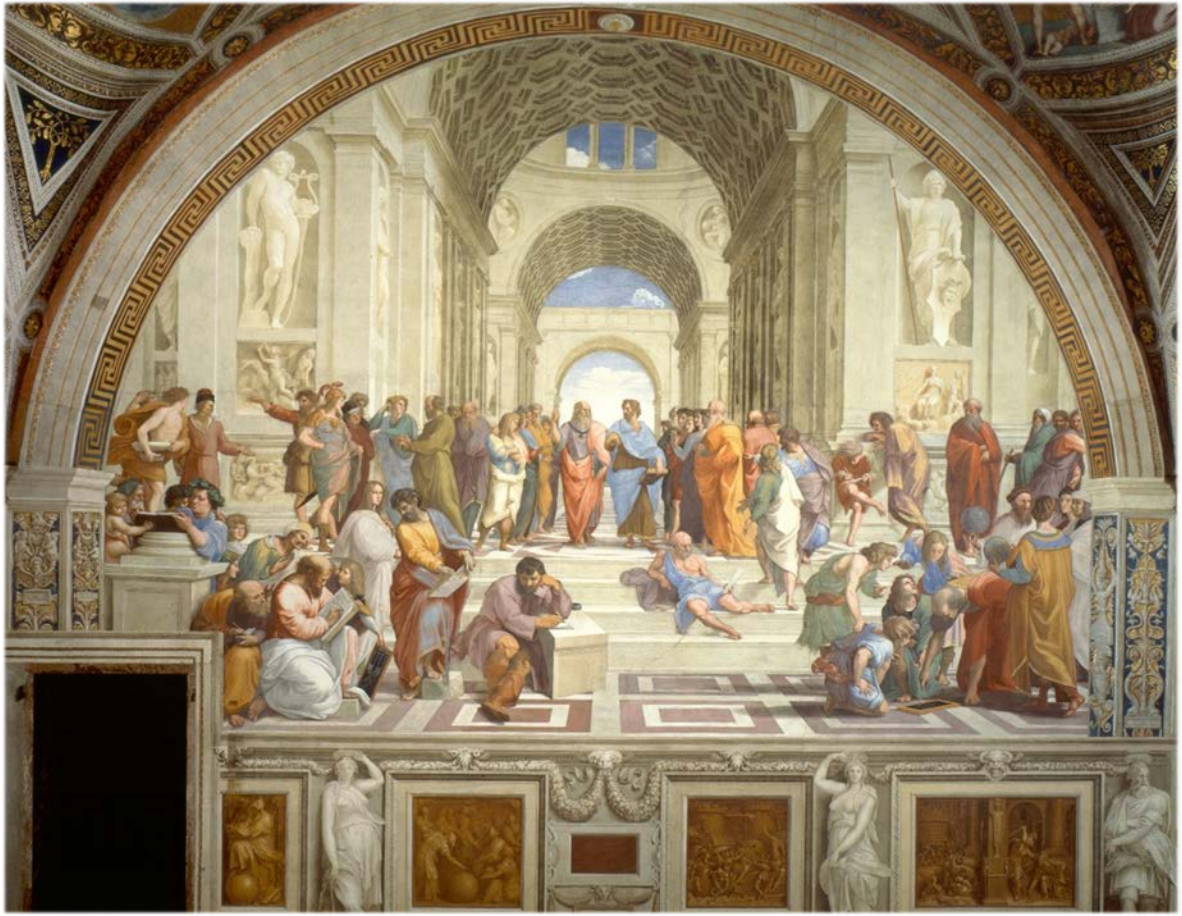
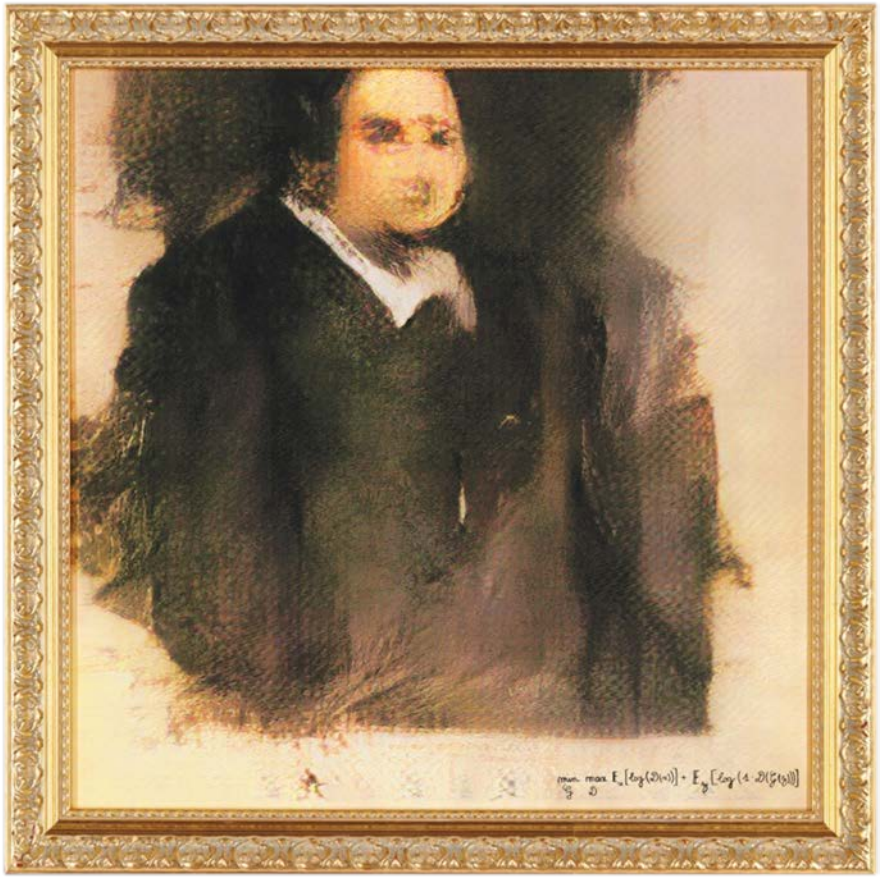
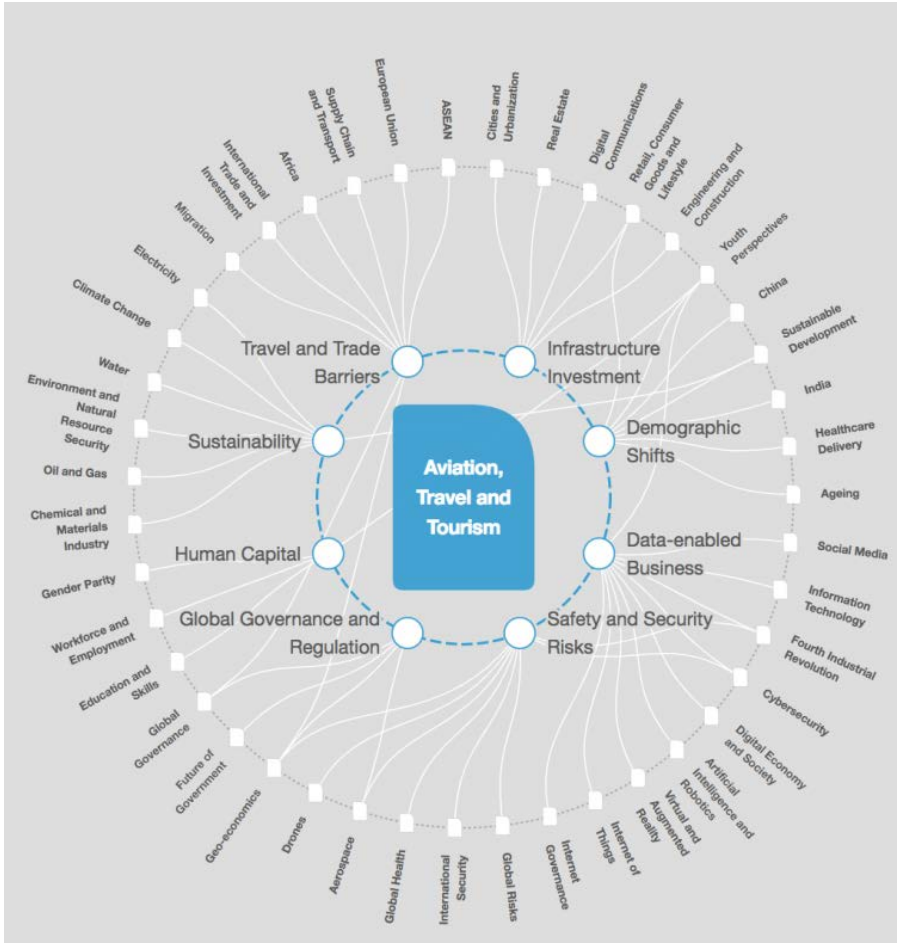
Session 3 – Reimagining security screening to relieve the pressure at the checkpoint

"Will we see a fully automated checkpoint in the future, where artificial intelligence can pick up threat items on its own? What role will humans play in that future?"




$\min_G \max_D E_x[\log(D(x))] + E_z[\log(1 - D(G(z)))]$

1 NO POVERTY
2 NO HUNGER
3 GOOD HEALTH
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 RENEWABLE ENERGY
8 GOOD JOBS AND ECONOMIC GROWTH
9 INNOVATION AND INFRASTRUCTURE
010 011
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE AND JUSTICE
17 PARTNERSHIPS FOR THE GOALS
THE GLOBAL GOALS
For Sustainable Development


Aviation, Travel and Tourism
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Demographic Shifts
Human Capital
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Engineering and Construction
Youth Perspectives
China
Sustainable Development
India
Healthcare Delivery
Ageing
Social Media
Information Technology
Fourth Industrial Revolution
Cybersecurity
Digital Economy and Society
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Session 4 – Digital Leadership Plenary: Technology Innovations in Transportation

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Session 4 – Digital Leadership Plenary: Technology Innovations in Transportation

"What does cyber security mean to you and to the future of aviation security?"

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Session 4 – Digital Leadership Plenary: Technology Innovations in Transportation

"How does the accelerating pace of social and economic change, coupled with the blurring of the physical and digital worlds, influence your thinking about aviation security?"

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Session 4 – Digital Leadership Plenary: Technology Innovations in Transportation

"What are the major threats and opportunities faced by the aviation industry, within your personal sphere of influence, and globally?"

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Session 4 – Digital Leadership Plenary: Technology Innovations in Transportation

"In a world characterised by rising protectionism and weakening of multilateralism, how can we move forward and address cyber security in the aviation industry holistically across industry ecosystems and geographies?"

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Session 4 – Digital Leadership Plenary: Technology Innovations in Transportation

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