

Summary and Next Steps

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Was ADSA17 Successful?

- It depends on the metrics you choose, examples include
 - TSA learning about new technologies
 - Number of
 - Attendees
 - Forming partnerships
 - Developed products
 - People working together
 - Enabled DHS sponsorship
 - Increase of DHS participation
 - Spin off of other ADSAs
 - Number of side bar conversations

What Did We Hear?

- Aviation security ecosystem
 - Many stakeholders, LEO, Airport authority, Airlines, Passengers, CBP, etc.
 - Precheck Plus? And other dedicated lanes.
- APEX screening at speed—Silicon Valley Innovation Program (SVIP)
 - Innovative funding approaches for non-traditional researchers: SBIR, grand challenges
- Deportee status—past aircraft was the risk now it is passenger risk; pass. identity
- Prediction of System Security Performance
 - How do you build blocks to connect them
- Deep Learning, Convolution & Artificial Neural Networks (CNN & ANN)
 - Weapons detection
 - Metal artifact reduction
 - We need lots of images, not clear how many is enough
 - Shaped based could be issues with items that you cannot use shape
 - Optimized approached for computational acceleration.

What Did We Hear?

- Office of University Programs COEs' need
 - to quantify ROI
 - TSA endorsement
- ALERT – ADSA
 - Academia, industry & government synergy, agency commitment,
 - Qualitative ROI for ALERT
 - Qualitative ROI for ADSA
- Vendor perspective
 - Future revenue visibility & clear procurement roadmaps
 - Lobbying
- European vs US
 - efficiency push vs. detection
 - cost models, cost share from venues
 - Certification harmonization
 - Requirements vs. non-uniform and selective testing

What Did We Hear? continued

- Deterrence, hardening & displacement
 - Anecdotal evidence that it works
 - Prevent adversary learning whether Deterrence or detection
- Passenger analytics
 - Privacy is dead?
 - Crowd behavior and modeling
 - Behavior Detection – GAO report not quite right
 - Could be extended to tracking
- Macro security
 - Silver bullets are rare
 - Data to improve current security effectiveness
- Cyber security
 - Adversary rapidly adapts we do too
- DICOS and standards
 - How to retire risk more quickly before fielded
- An CBP focused ADSA June 21 & 22, 2018
- Datasets are critical for engagement
 - Kaggle—data modeling and analysis competition platform
 - Largest machine learning community
 - New entrants
- ALERT TO3 Imatron dataset—Available to people.

What Did We Hear? continued

- Vendor introductions
 - Gilardoni—Source & security systems
 - Need to consider from an entrepreneurial point of view
 - Synapse Technology—CNN for weapons
 - TiaLinx—3D CNN recursive error minimization
- Trace sampling advances
- Sparse-sample mid-infrared-spectral imaging
- Multi-spectral IR micro-sensors
- Standoff detection using quantum cascade lasers for IR and hyperspectral

What we need to hear more about

- How to leverage CBP with TSA and vice versa
- Quantitative ROI for ALERT
- Use of biometrics, privacy
- Use of social media and how to vet and make actionable unfiltered and unbounded content
- Tradeoff between security and passenger satisfaction
- More effective tools to empower the operator (augmented reality, etc.)
- Low- vs. high-risk passengers
- Operational testing and suitability for the field
- How to invest limited resources
- How to reintroduce proper behavior detection

What we did not hear?

- Still not clear what DHS S&T and TSA needs
- How to quantify deterrence
- How well a screener performs
- CNN detection of explosives
- Why didn't we know that the Vegas shooter bought so many weapons and become a suspect

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Collection and use of passenger and other data for improving Aviation Security Systems

- What data
 - Is useful
 - Should the government supply
 - Are people willing to disclose
- How should the data be used
- How to
 - collect
 - disseminate
 - handle privacy and legal issues

Comparison of different funding methods

Kaggle passenger screening competition results

Non-public competitions?

Panel on Cybersecurity

- How to secure the data
- Impact of breaches, Denial of Service, Updating, Silent Failures, Subversion, Resiliency, Detection, Separation, Best Practices, Operational Viability, Residual Risk

Panel on Standards for Security

- What do we need? Barriers to development, participation, adoption?
- How to overcome? Moonshot?