

DHS SCIENCE AND TECHNOLOGY

Advanced Development for Security Applications (ADSA) Workshops: Past, Present and Future

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**Homeland
Security**

Science and Technology

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Office of University Programs Centers of Excellence: Focus

Centers of Excellence:

The Centers of Excellence (COEs) develop innovative, customer-driven homeland security science and technology solutions and train the next generation of homeland security experts.

- Each university-based COE is a competitively-awarded consortium
- Network of ten COEs and more than 200 partners

Minority Serving Institutions:

The OUP Minority Serving Institutions (MSI) Programs diversify the academic institutions involved in the homeland security mission and train dedicated professionals who can sustain the homeland security and technology workforce.

- Scientific Leadership Awards – institutional awards to support the development of homeland security science and engineering teaching initiatives
- Summer Research Team Program – grants supporting summer research collaborations that engage early career faculty and students with the COEs

So What? Who Cares?

- ALERT COE Co-director and S&T PM discussed how to best reach out to the Homeland Security Enterprise
- First ADSA Workshop commenced in April 2009 with ~40 people to support DHS's objective to augment the capabilities and capacities of equipment vendors with the involvement of third parties (academia, national labs, other industry)
 - Objective: learn how to involve third parties
- Results
 - Developing unclassified problems using public domain data
 - ADSA 150 attendance: > 150/ADSA, ~1000 on distribution
 - Grown into forum for brain storming and interchange
 - ~10 projects/task orders funded through ALERT
 - ~50 groups associated with ALERT transitioning technologies with vendors, TSA, DHS
- Future of ADSA and Task Orders
 - ADSAs will continue as part of ALERT funding
 - ALERT's funding after present period of performance is not guaranteed
 - Funding third parties may continue using DHS and TSA BAAs

ADSA1 – Lessons Learned

- Need unclassified & unrestricted problem statements and datasets
 - X-rays: detecting Coke in presence of Swiss cheese using scans on a medical CT scanner is a surrogate for TSA problems
 - Other modalities: use test beds, simulants and simulations
- Need to use technology foraging to find researchers/companies
 - PHDs in medical imaging do not read BAAs or speak the same language
- Subject matter expertise (SME) required during onboarding of third-parties

ALERT Task Orders

- Computed Tomography (CT)-based EDS
 - Segmentation algorithms
 - Reconstruction algorithms
 - Automated Target Recognition (ATR)
 - Adaptive ATR (AATR)
- Advanced Imaging Technology (AIT)
 - Advanced reconstruction
- Video analytics
 - Tag and track
 - Reverse flow
 - Tracking passengers and divested objects at the checkpoint
- Trace
 - Sampling improvements

ADSA – Growing Pains

- Growth
 - Safe forum for stakeholders to interact
 - Participants expanded from purely technical to include US and Foreign government, business development, airlines, airports, policy makers, etc.
- Pains
 - Difficult to satisfy all attendees all the time
 - Difficult to change scope

ADSA and Third Parties - Future

- Open discussion – DHS and ALERT want to hear from you.



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