S&T Stakeholders Conference

Person & Vehicle Born IED Detection Programs

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June 2-5, 2008

PARTNERING FOR A SAFER NATION
Outline

• Overview of Domestic Threats
  • Suicide Bombers
  • Vehicle-Borne Improvised Explosive Devices

• Examples of Ongoing Efforts

• Program Plan
  • Considerations for Domestic Applications
  • Distinguish DHS and DOD Threat Areas
  • Focus on Standoff Detection
  • Development Strategy
  • Customer Base and Transition Plan

• Funding Opportunities and Priorities

• Concluding Remarks
Impact Statement

The Department of Homeland Security, Science and Technology Directorate, Counter-IED Program is developing technical capabilities to detect, interdict, and mitigate the effects of both improvised and conventional explosive threats. This program is essential to safeguard the populace, mass transit infrastructure, civil aviation, and other critical infrastructure without impeding flow of commerce.
Overview of Domestic Threat—VBIEDs

- Vehicle-Borne Improvised Explosive Device (VBIED)
  - Potentially large payload of explosives
  - All vehicle classes must be considered
  - History of domestic VBIED attacks

- Domestic VBIED program
  - Targets
  - Device deployment and targets
  - Threat materials/configurations
  - Response techniques
Overview of Domestic Threat—Person Borne IEDs

• ‘Conventional’ Suicide Bombers
  • Threat materials & configuration
    – Numerous variables (HME possible)
    – Minimal historical preface

• Domestic Suicide Bomber program
  • Targets
  • Response techniques
Ongoing Efforts

• Enhanced Sampling Efforts – Non-intrusive Trace
• Short Range Standoff – Anomaly Imaging
• Highly Selective Trace Detection
• Low ‘Dosage’ Programs
• Mechanical Property Sensing
Device Detection, Non-contact

Backscatter x-ray detection of Person Borne IEDs in motion
Explosives Detection, Multimodal

Integrated IMS –DMS - MS for highly selective trace detection in VBIED checkpoint
Program Plan—Domestic Applications

Considerations for Domestic Applications

- Safety aspects and perceptions
  - Laser safety, radiation dosage, UV exposure
- Privacy consideration and perceptions
  - Distortion algorithms, feature filters, data storage
Program Plan—Distinguishing Domestic and DOD Threats

• Threat Materials: Surplus Ordnance vs Commercial Explosives, HME, etc.
• Device Deployment: Concealed Roadside Device vs “Flow of Commerce” Camouflage
Program Plan - Focus on Standoff Detection

- Fiscal Years ’09 -’14
- Standoff and Remote Detection
  - Active & Passive
  - “Non-Intrusive”
- Integration, Automation, and Data Fusion
  - Layered security approach
- Spectroscopic techniques
Program Plan - Development Strategy
Program Plan—
Customer Base and Transition Plan

• Customers – USSS, TSA, CBP, USCG
  • Each with different CONOPS & Requirements
• IPT Model – Both director and end user levels.
Funding Priorities and Opportunities

Multiple DHS S&T Area Solicitations

• Explosives Division
• SBIR Office
• Innovation Division
• International Programs

Focal Areas

• Standoff Detection
• Portable Prototypes
• Multi-modal Detection Systems
• High Technology Readiness Levels
• Non-destructive Techniques
Concluding Remarks

• Standoff detection of suicide bombers is the top priority

• Domestic Applications
  • Safety and privacy aspects
  • Domestic threats

• Solutions Needed ASAP
  • 3-5 year program