Homeland Security

S&T Stakeholders Conference

S&T Thrust Area Bombs

Jim Tuttle
Explosives Division Head
Science and Technology Directorate

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PARTNERING FOR A SAFER NATION

Counter-IED
High Priority Technology Needs (EXD)

- Capability to detect domestic use vehicle-borne improvised explosive devices (VBIEDs)—In particular, technologies to provide a non-intrusive means of screening vehicles for VBIED detection
- Capability to assess, render safe, and neutralize explosive threats—In particular technologies to protect against person- and vehicle-borne explosive threats
- Capability to detect person-borne IEDs from a standoff distance—In particular, technology to enable the detection of person-borne concealed explosive threats in various high-throughput venues, at standoff distances
- Capability of inerting common explosives or making them less sensitive to initiation
- Techniques to track the origin of explosives and bomb components used in domestic IEDs—In particular, to improve forensic evidence investigations with better tools such as biometric technology, taggants, and radio-frequency identification devices (RFIDs)
- Capability to mark explosives material to improve the detection of IEDs

Counter-IED
High Priority Technology Needs (Other)

- Low-cost and practical approaches to protect urban structures and occupants from VBIED attacks
- Protective measures to reduce damage and prevent catastrophic failure of high-consequence infrastructure assets subjected to IED attacks
- Models for predicting of blast effects that take into account the diversity and variability of construction in urban settings
- Affordable blast-, fragment-, and fire-resistant materials
- Rapidly deployable blast-mitigation concepts for rapid threat response or temporary protection
- Tools to rapidly assess damaged structures
- Techniques and tools to stabilize damaged structures and prevent their collapse
- Capability to predict the threat of an IED attack
- Increased capability at vehicle or pedestrian ports of entry and border crossings to identify person born IED threats
- Enhanced capability for local officials to communicate understandable and credible IED warnings and instructions to the public

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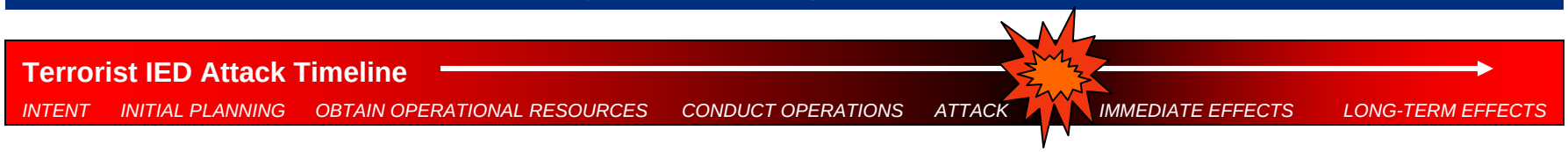
DHS S&T Counter-IED Program

DHS S&T has established a counter-IED program to leverage existing multi-agency research and investments to deter, predict, detect, defeat and mitigate the impact of IED attacks



Deter

Human Factors

- Actionable Indicators
  - Group Characteristics
  - Pre-incident Rhetoric
  - *Pre-incident Behaviors*
  - Community Characteristics
  - *Integration*
- Countermeasures
  - Comparative Counter Red/IED Strategies
  - *Strategy Impact*

Predict

Human Factors

- Predictive Screening
  - Behavior Analysis
  - Video Tracking
  - Video Identification & Alert
- *Risk Prediction*
  - *Target Prediction*
  - *Staging Area Prediction*

Detect

Explosives

- Person Borne IED Detection
- Vehicle Borne IED Detection
- *Canine/Biological*
- *Marking*

Defeat

Explosives

- Bomb Assessment/ Diagnostics
  - Type of Explosive
  - Device Triggers
- Render Safe
  - Electronic Countermeasures (IR/RF Jamming)
  - *Directed Energy*
- *Robotics*
- *Bomb Components*

Mitigate

Infrastructure

- Blast Mitigation
  - Affordable blast resistant materials
  - Rapidly stabilize damaged structure

Explosives

- *Body Armor*
- Inerting
- *Tagging (Forensics)*
- *Post Blast (Forensics)*

Cross Cutting:

- *Standards; Outreach*; Technology Demonstration/ System Integration
- Intel Data Sharing (FBI, CIA, DIA); Technology resource & Test sharing (DoJ, DoD, DoE)

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