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S&T Stakeholders Conference

Person & Vehicle Born IED Detection Programs

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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

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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***.

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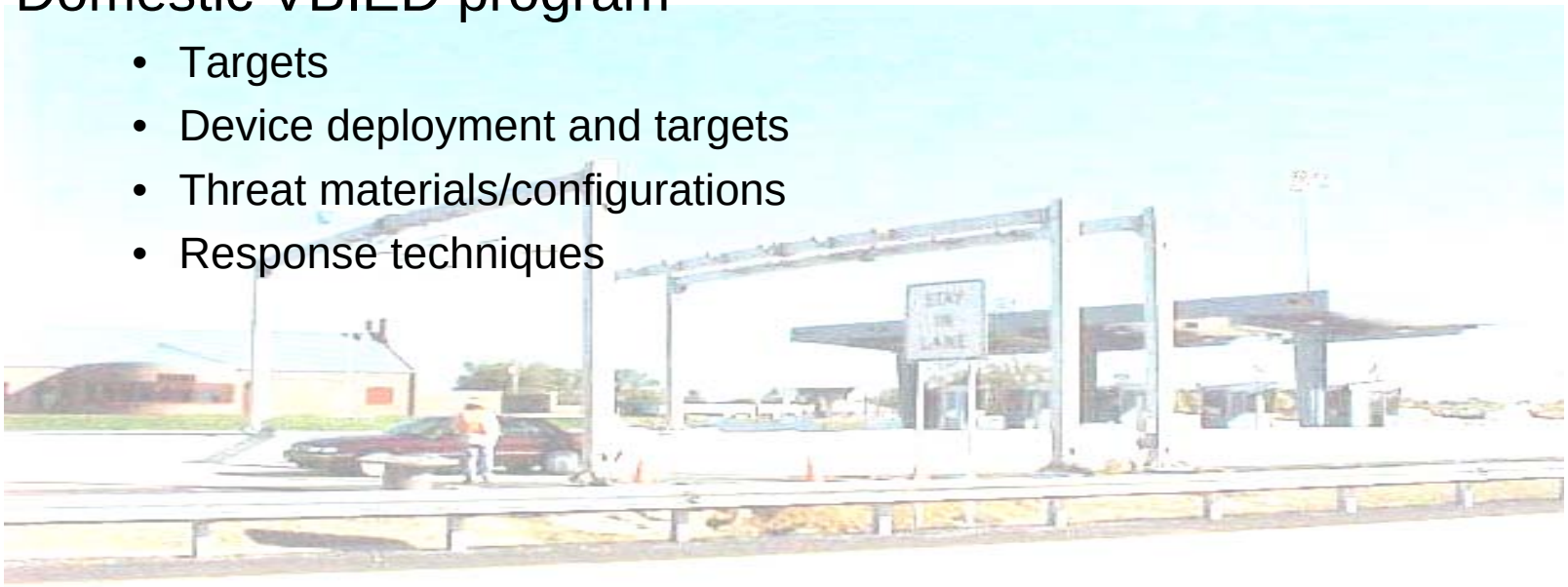
Overview of Domestic Threat—VBIEDs

- 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



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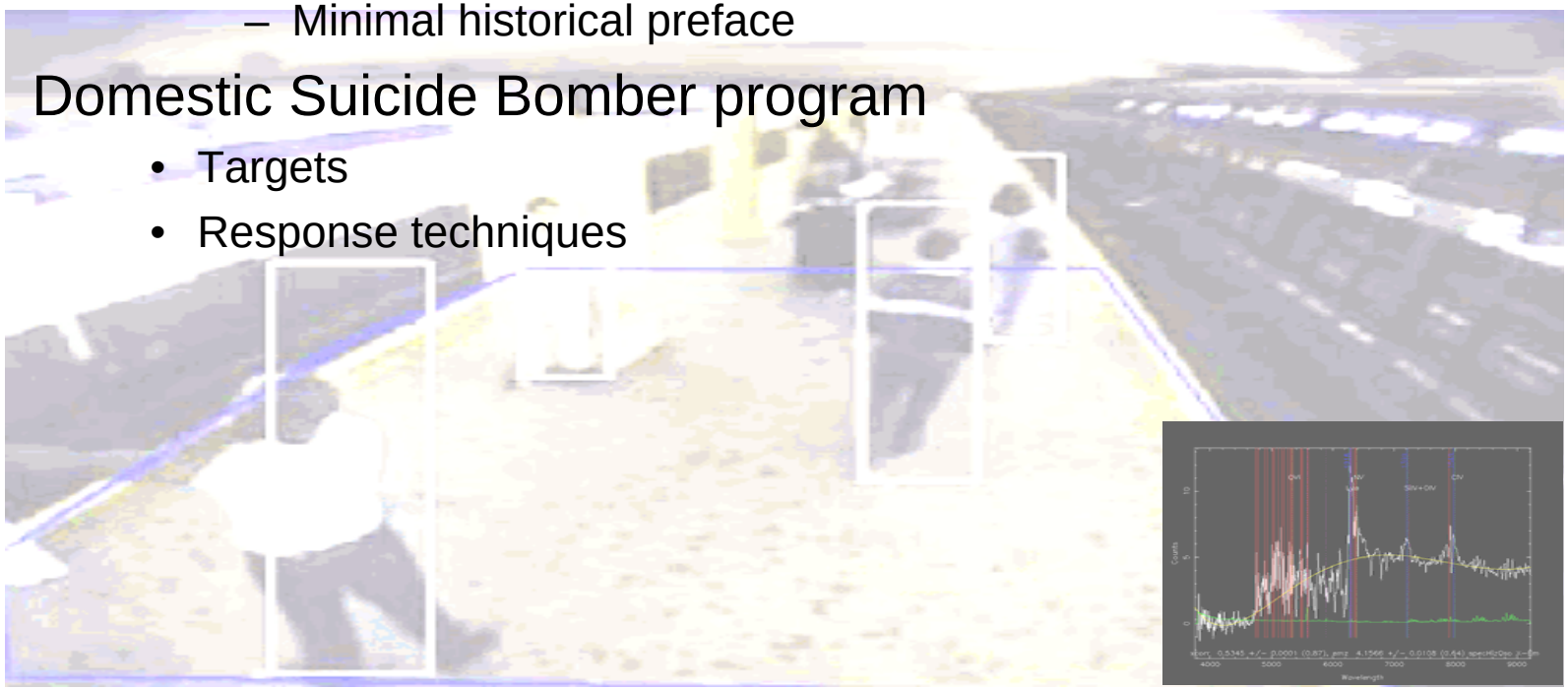
Overview of Domestic Threat—Person Borne IEDs

- ‘Conventional’ Suicide Bombers
  - Threat materials & configuration
    - Numerous variables (HME possible)
    - Minimal historical preface
- Domestic Suicide Bomber program
  - Targets
  - Response techniques



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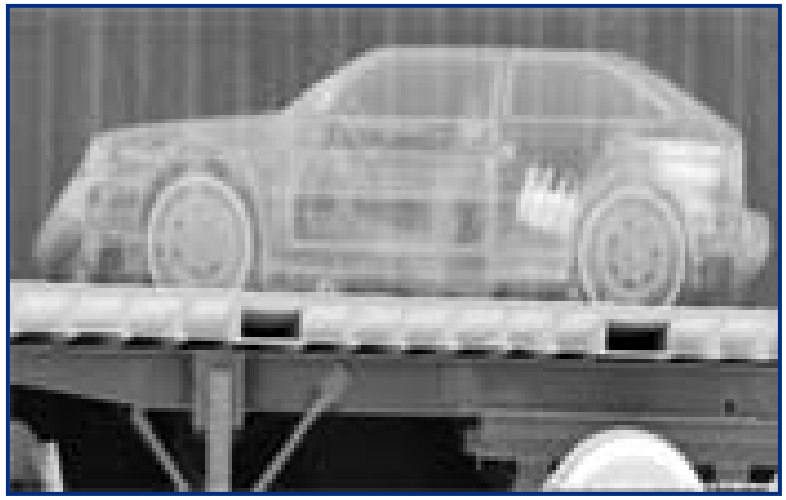
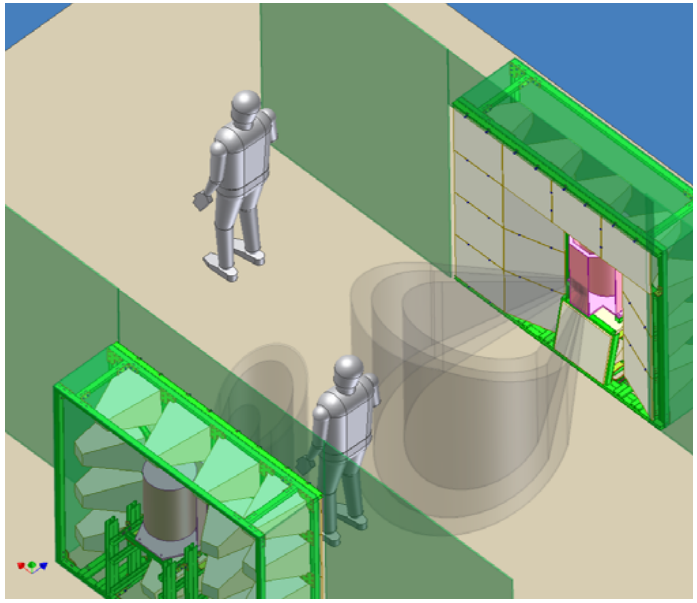
Ongoing Efforts

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





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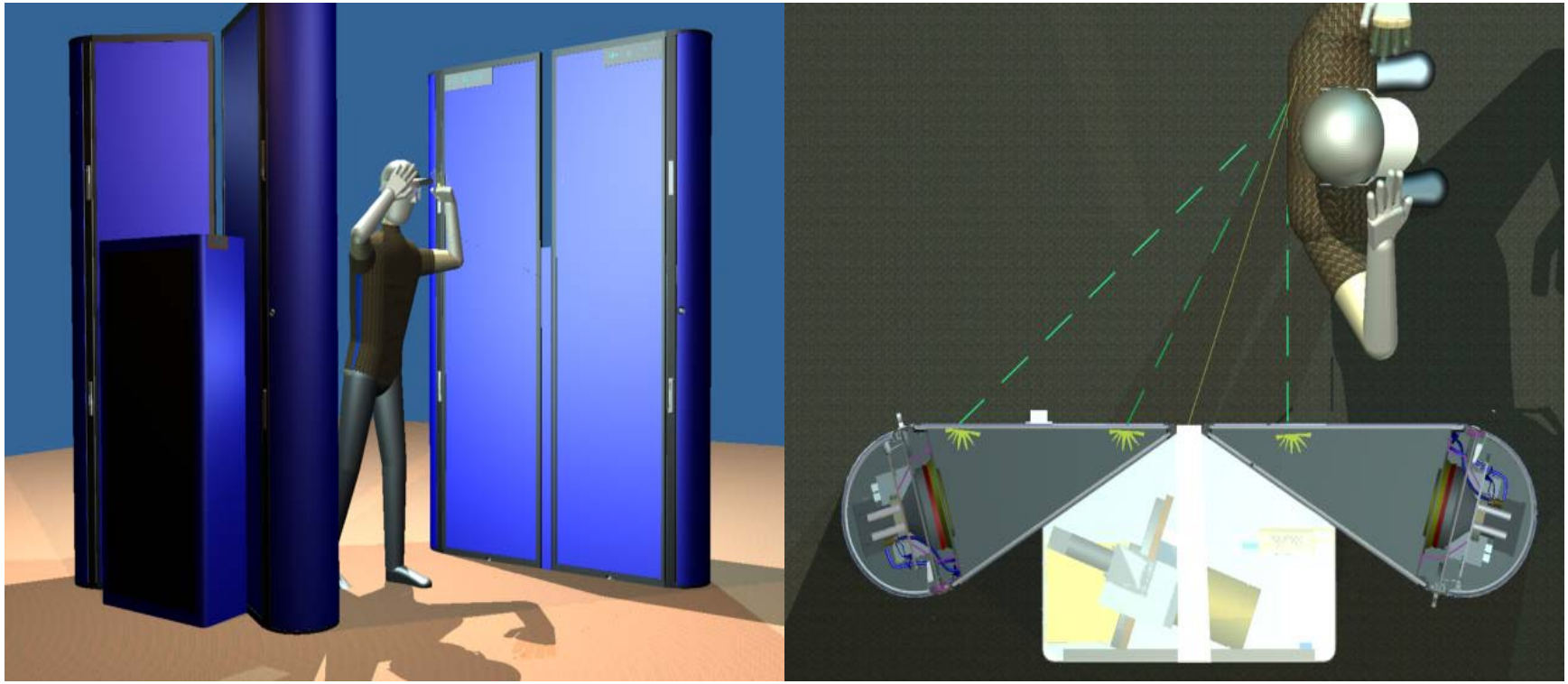
Device Detection, Non-contact



Backscatter x-ray detection of Person Borne IEDs in motion

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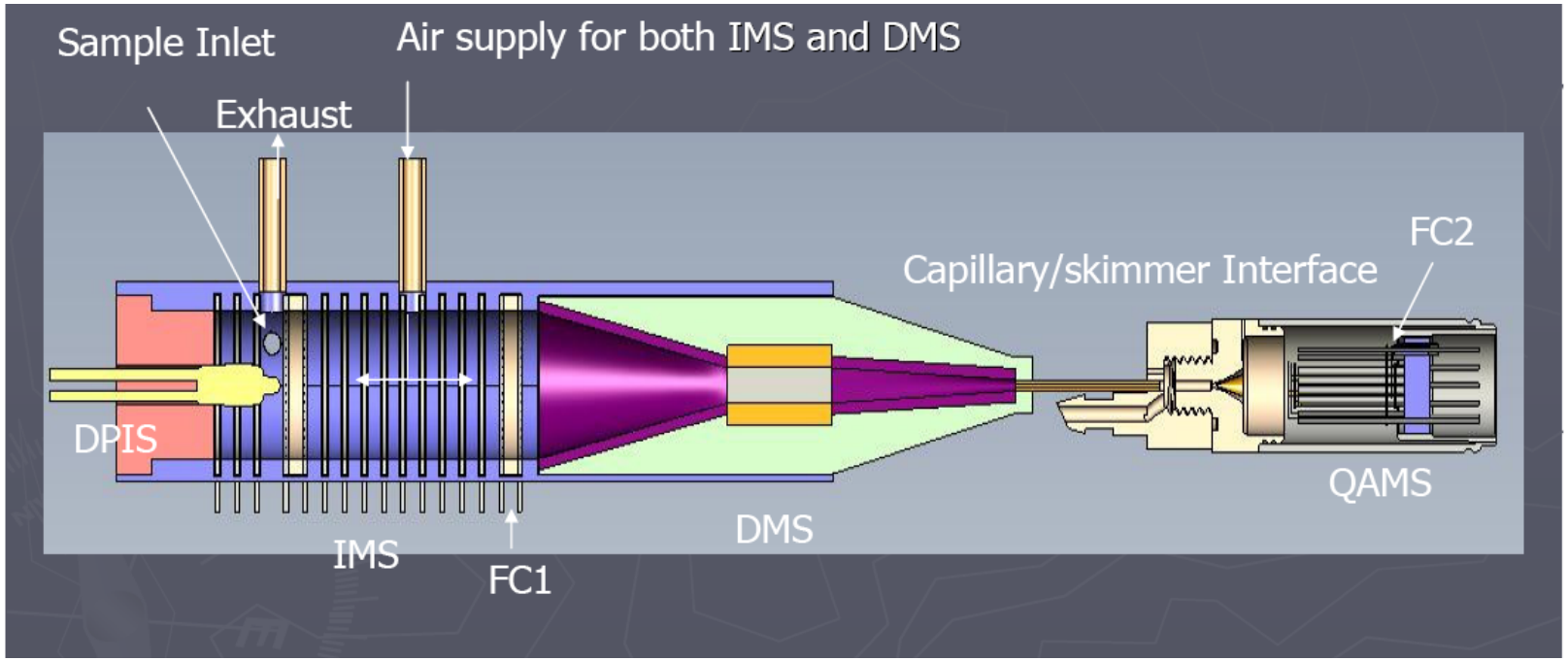
Explosives Detection, Multimodal



Integrated IMS –DMS - MS for highly selective trace detection in VBIED checkpoint

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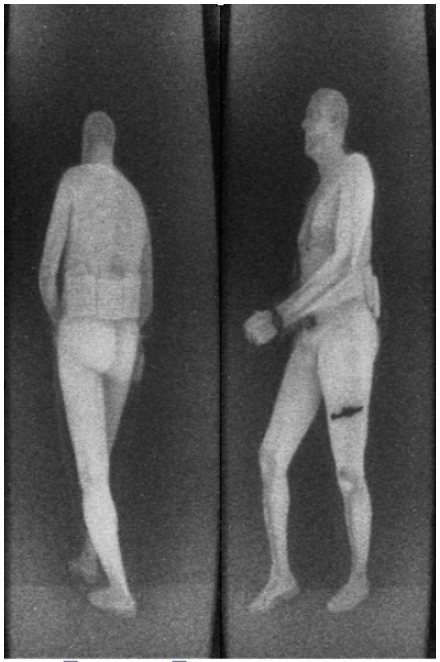
Program Plan—Domestic Applications

Considerations for Domestic Applications

- Safety aspects and perceptions
  - Laser safety, radiation dosage, UV exposure
- Privacy consideration and perceptions
  - Distortion algorithms, feature filters, data storage



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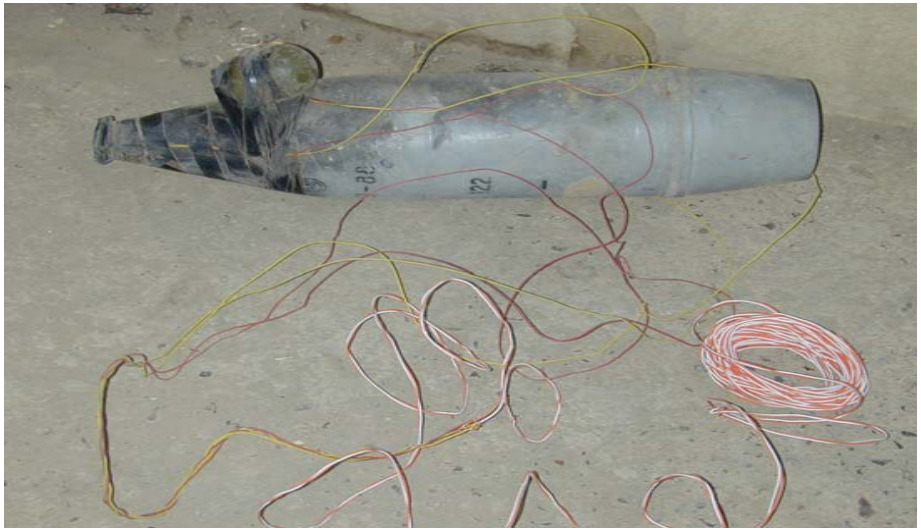
Program Plan—Distinguishing Domestic and DOD Threats

- Threat Materials: Surplus Ordnance vs Commercial Explosives, HME, etc.
- Device Deployment: Concealed Roadside Device vs “Flow of Commerce” Camouflage



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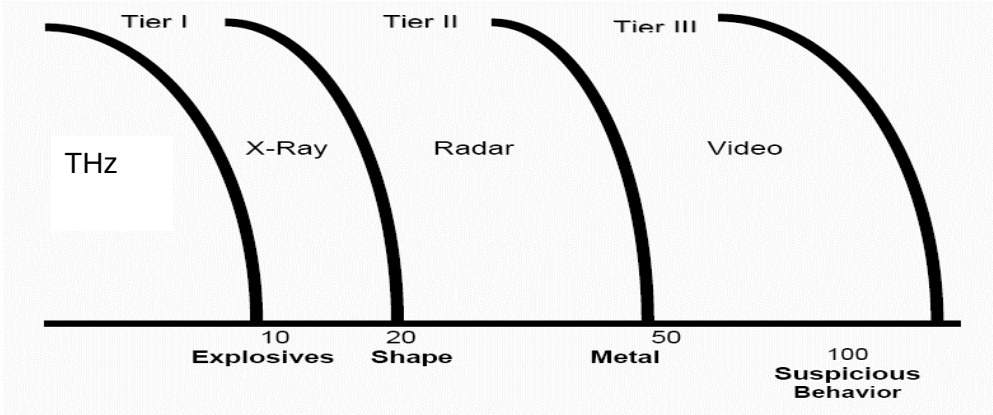
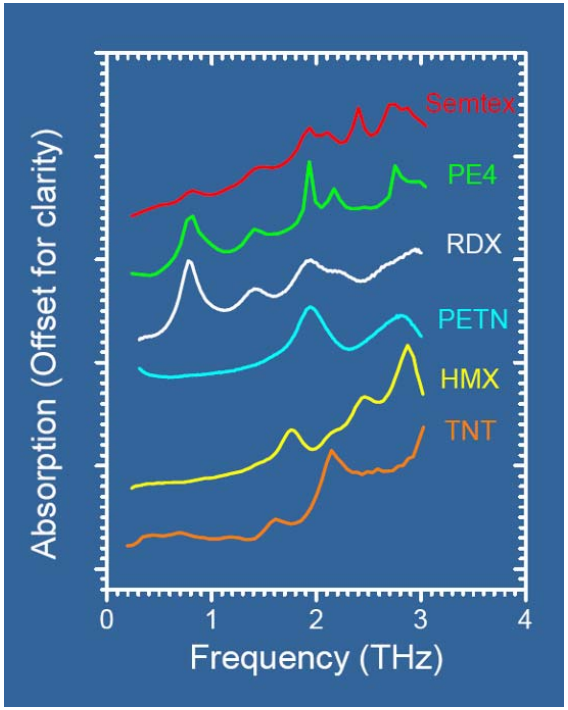
Program Plan - Focus on Standoff Detection

- Fiscal Years ’09 -’14
- Standoff and Remote Detection
  - Active & Passive
  - “Non-Intrusive”
- Integration, Automation, and Data Fusion
  - Layered security approach
- Spectroscopic techniques





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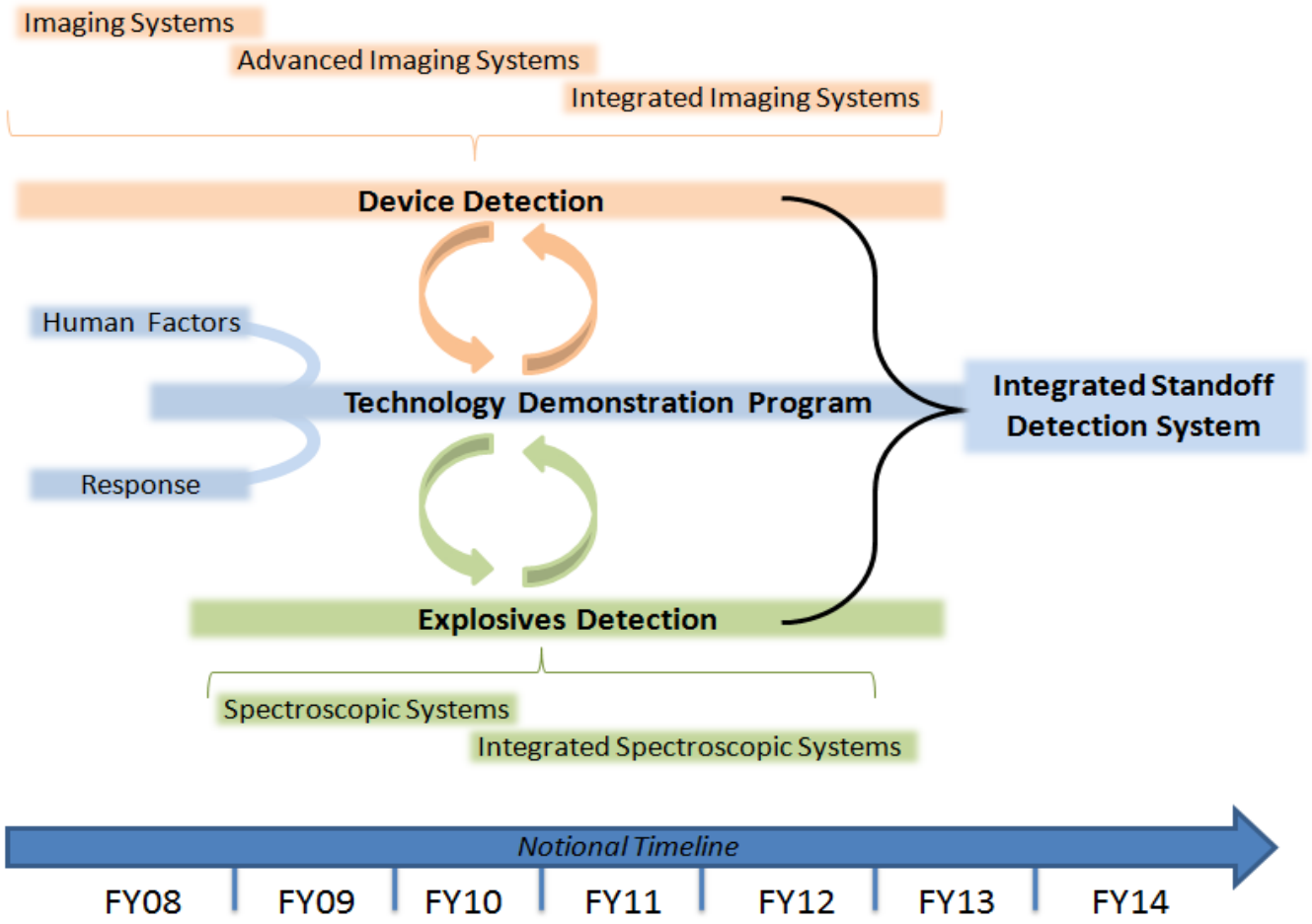
Program Plan - Development Strategy



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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.

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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

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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

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