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# S&T Stakeholders Conference

## Meeting the Nation's Transportation Challenges

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*PARTNERING FOR A SAFER NATION*

# Transportation Security

## High Priority Technology Needs

- Technologies to screen people for explosives and weapons at fixed aviation and mass-transit checkpoints—In particular, to allow high detection rates with minimal disruption to passenger flow
- Systems solution for explosives detection in checked and carried bags—In particular, automated systems to screen for conventional explosives, liquids, weapons, and homemade explosives
- Capability to detect homemade or novel explosives—In particular, characterizing potential homemade explosives for use in developing detection systems for screening at checkpoints
- Optimized canine explosives detection capability—In particular, techniques, training tools and methods to improve performance for all transportation venues
- Technologies for screening air cargo for explosives and explosive devices—In particular, technologies for screening break-bulk, palletized, and containerized air

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# The Present: Checkpoint Screening



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# Explosives Detection: Current Approach



# Checkpoint: Carry-On Bag Screening



# Clutter Carry-On Bag



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# Checkpoint: Recent Delivery

- Trace Portals
- Hardened Explosive Trace Detection Systems
- Imaging Technology and Algorithms
- Checkpoint Explosive Detection Systems
- Trace Contamination Studies: Turban, Shoes, Hands, Suicide Bombers



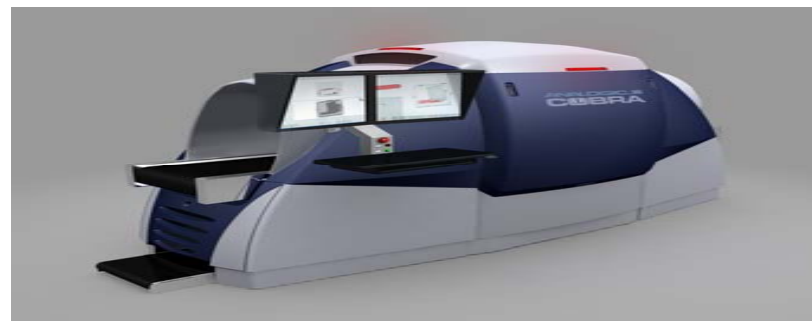
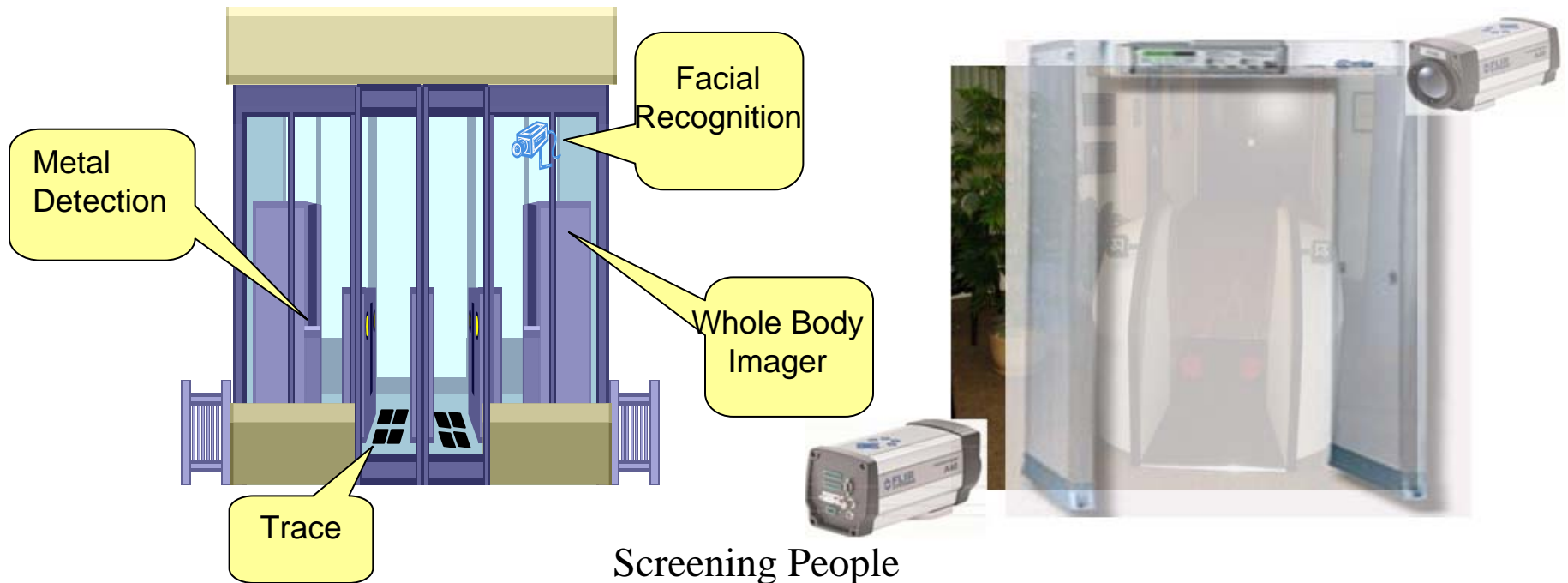
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# The Next Step: The Integrated Checkpoint



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# Next Generation Checkpoint Prototypes



Screening Items



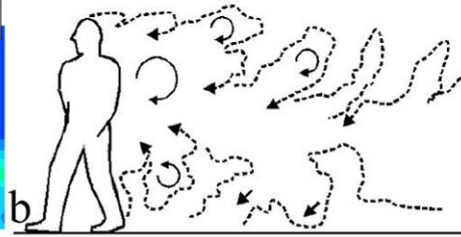
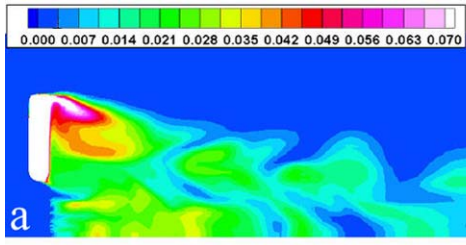
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# The Future: Standoff Detection



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# Integrated Screening Systems



Explosive Mechanism Detected

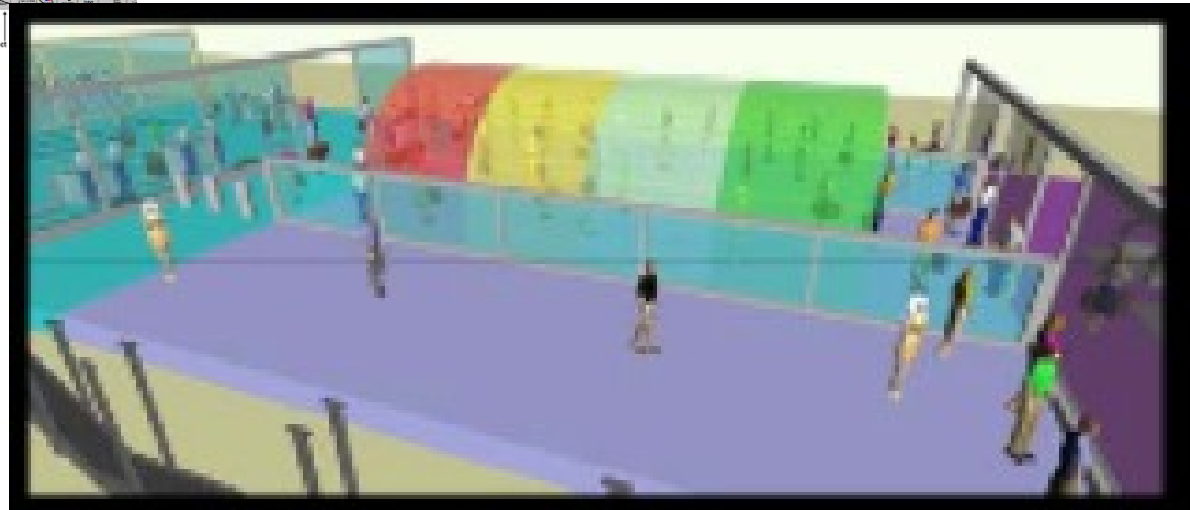
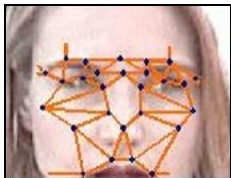
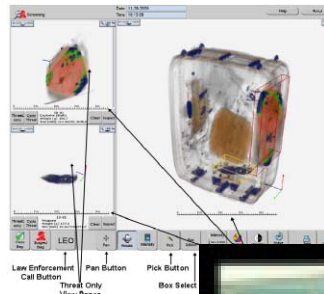
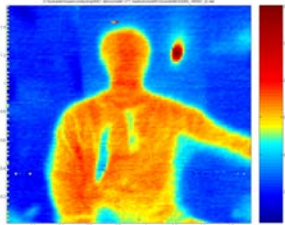
Firearm Detected

Explosive Mechanism Detected

Knife Detected

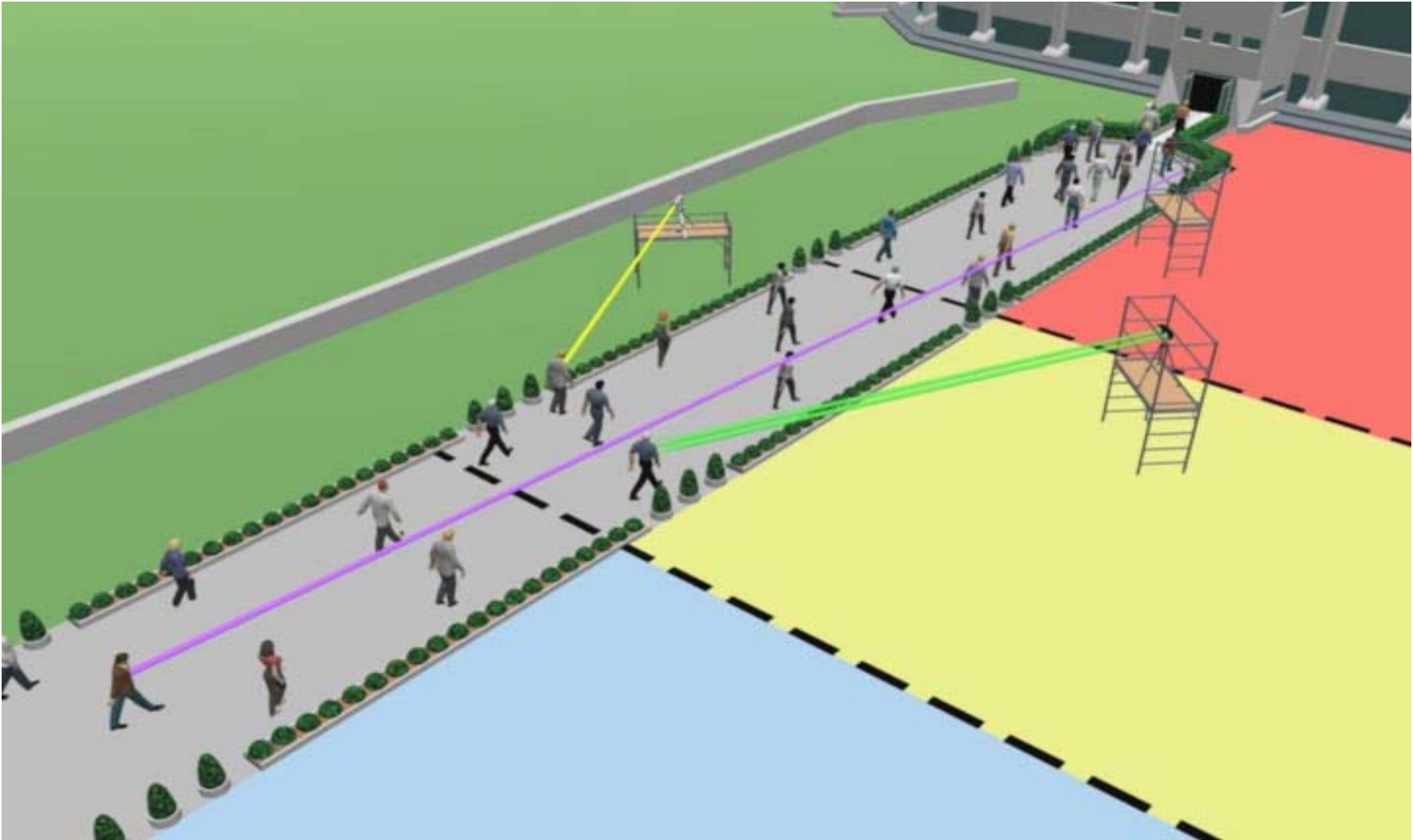
Passenger Modified Data

Passenger	Threats	Screening Data
Passenger Demographics	Threats Purchased 00210006	Screening Data



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# The Future of Screening



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