

Middleton, Robert

From: [REDACTED] (b) (6)
Sent: Wednesday, July 28, 2010 7:18 AM
To: [REDACTED] (b) (6)
Cc: 'Middleton, Robert'; [REDACTED] (b) (6)
Subject: Slides
Attachments: 100728_FAST [REDACTED] (b) (4) brief.pptx

[REDACTED] (b) (6)

Here are slides in case you want them.

[REDACTED] (b) (6)

[REDACTED] (b) (6)
[REDACTED] (b) (6)

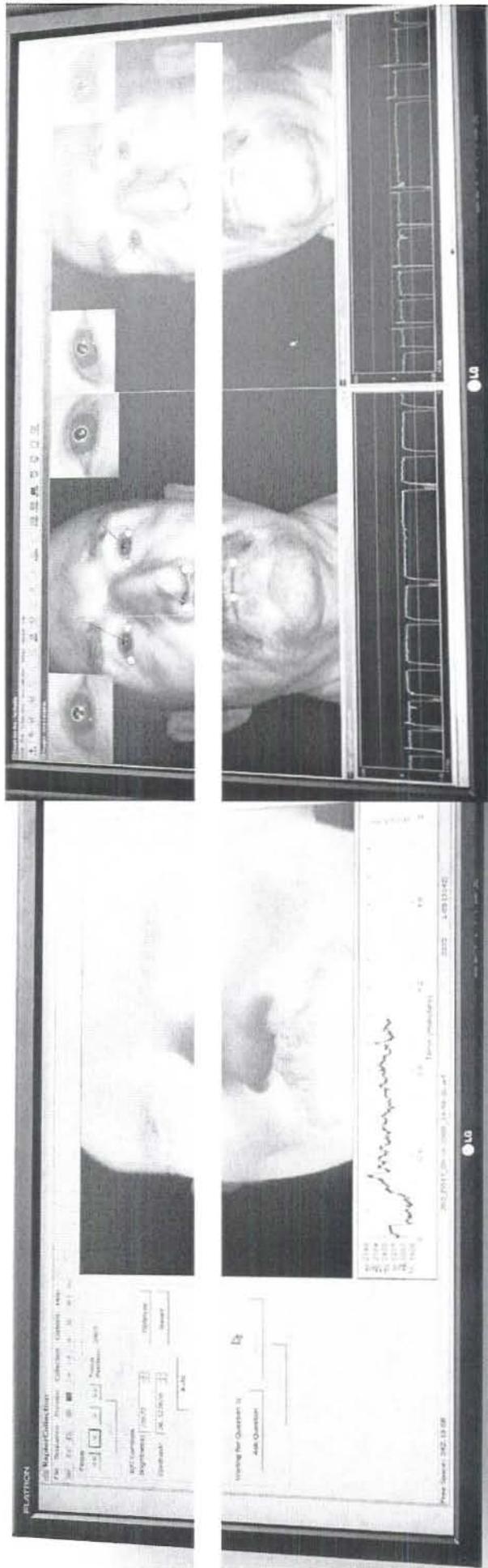
FAST

Future Attribute Screening Technology



Homeland Security

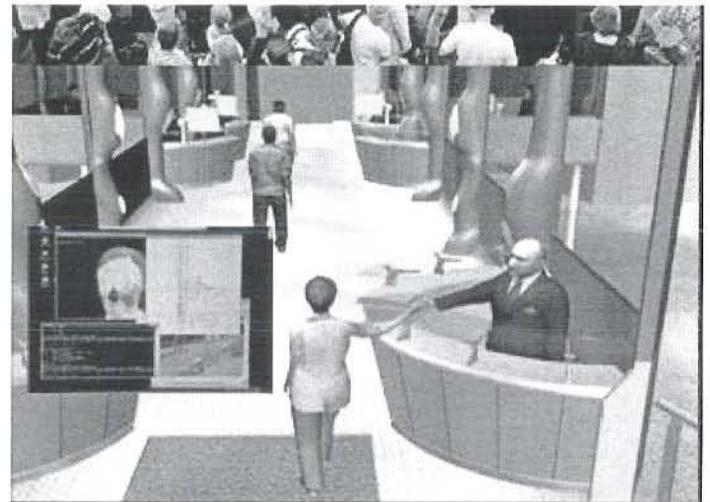
Science and Technology



July 28, 2010

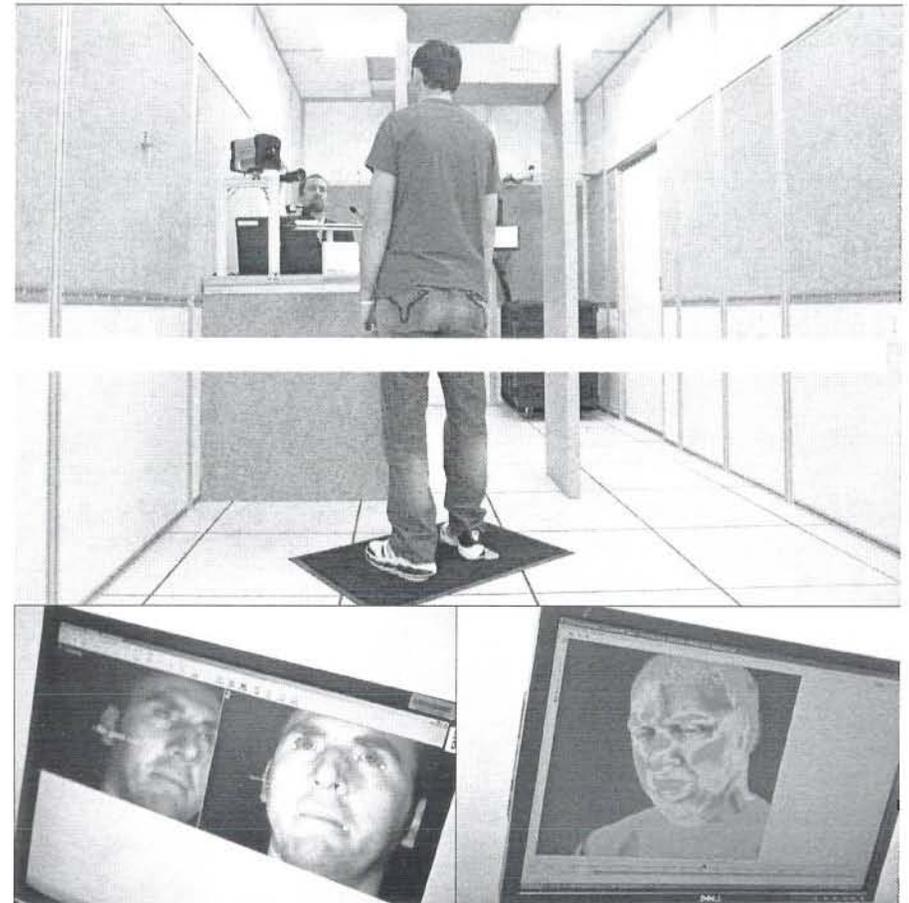
The goal of FAST is to streamline the primary screening process.

- Create a screening system to aid security officials.
- Increase throughput and minimize impact on public.
- Increase validity of referral to secondary screening.

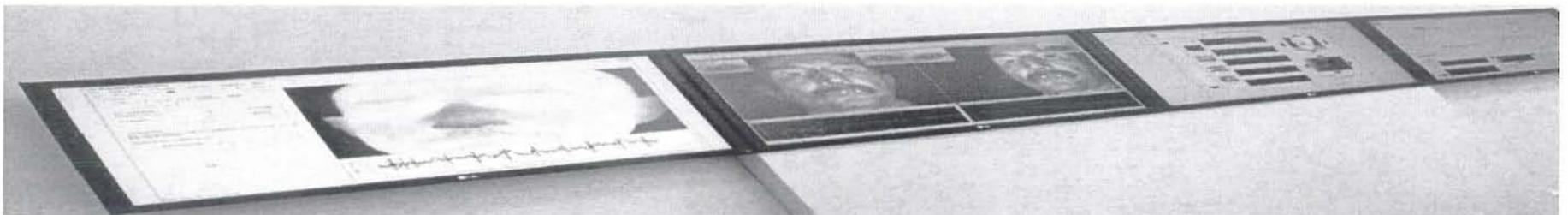
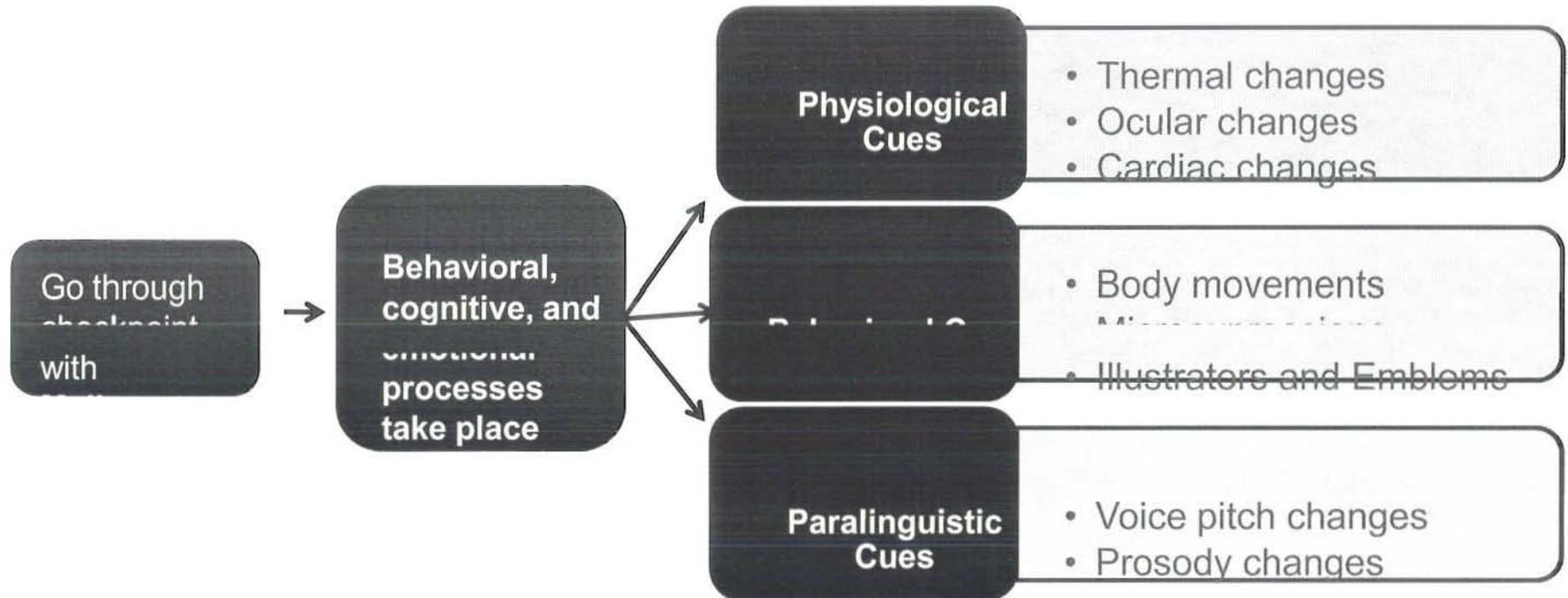


FAST vision is to identify individuals with malintent via an off-body screening system.

- Malintent: The mental state of individuals intending to cause harm to our citizens or our infrastructure
- Use non-intrusive sensors to detect physiological and behavioral cues
- Deploy a prototype system which can screen people in near real-time

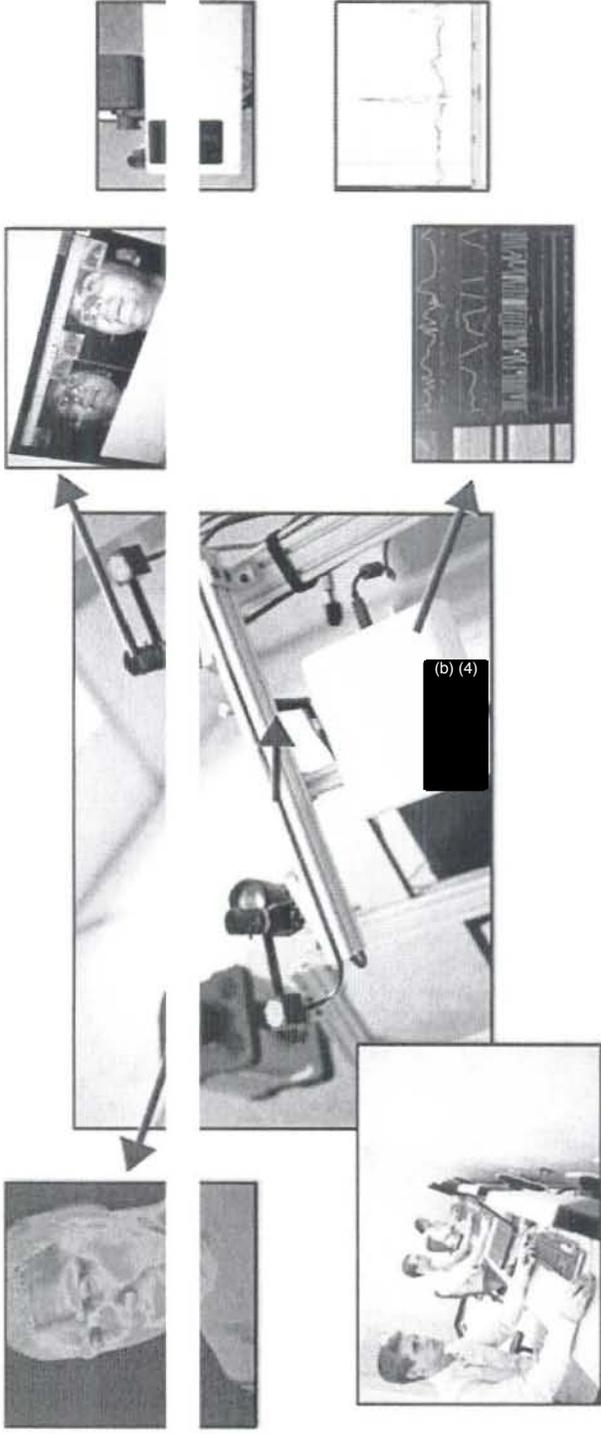


Malintent theory assumes three types of processes exhibited via three types of cues.



Currently, the sensor suite is focused on physiological malintent cues.

FAST Sensor Suite



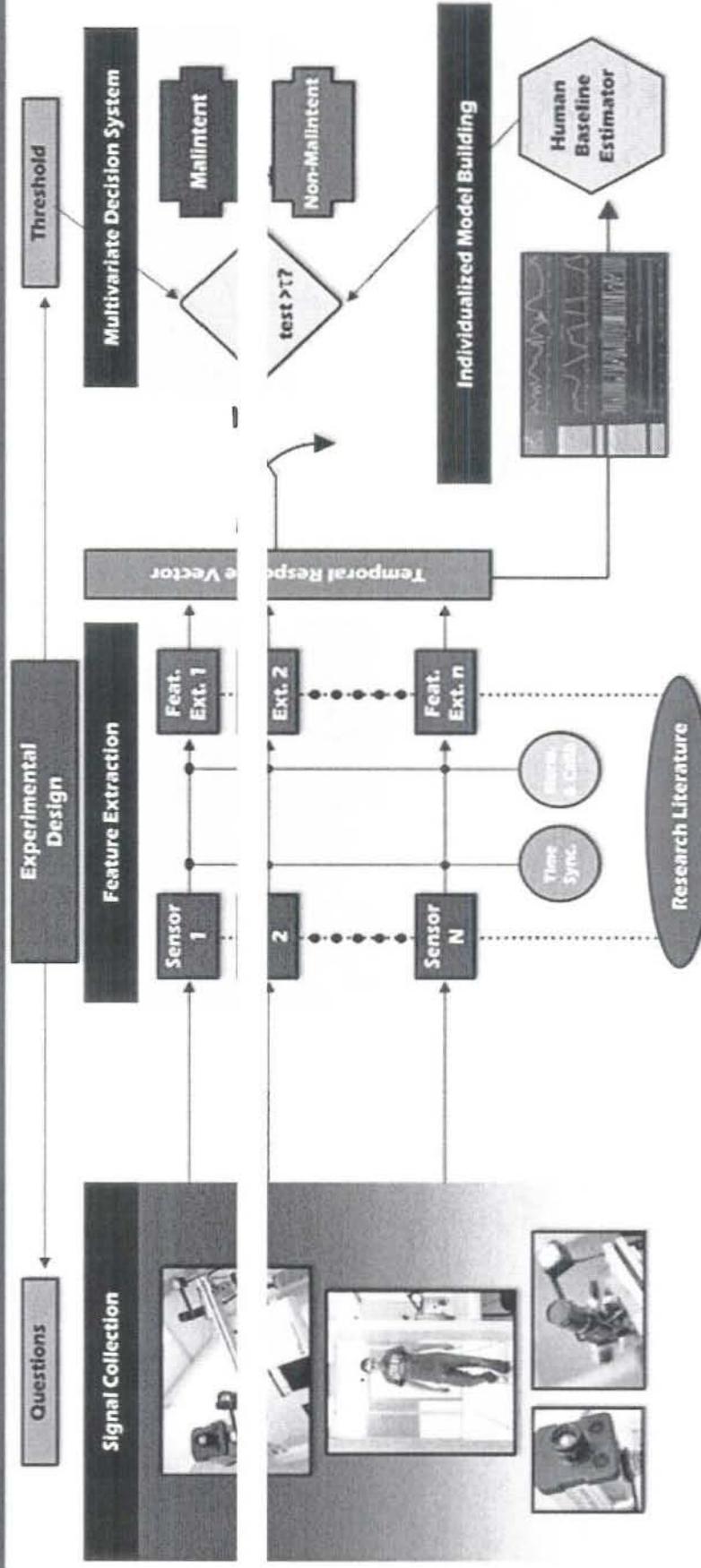
Unclassified

FAST Sensor Fusion Architecture



Homeland Security

Science and Technology

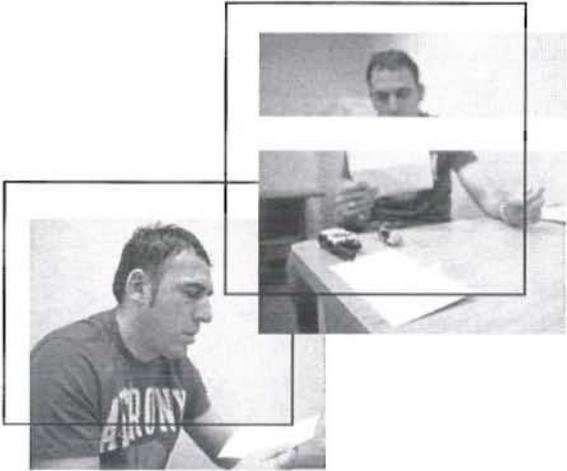


A new paradigm was developed to validate the theory of malintent.



and agreeing to participate, individuals receive instructions and take a breathalyzer test.

Determinations are made based on participants' intentions.



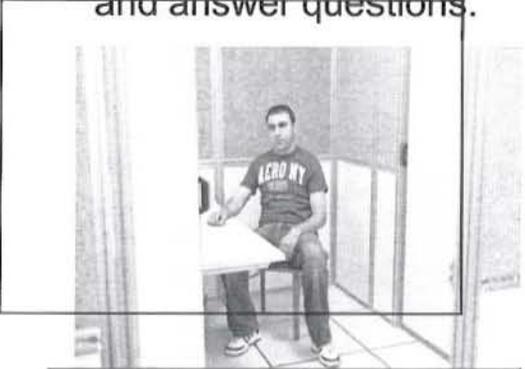
Participants are assigned to the No Malintent or Malintent conditions



All participants proceed to Guard #1 and present their ID.



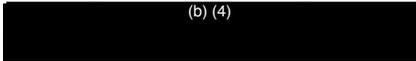
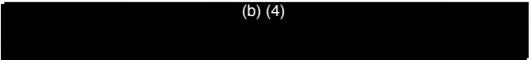
All participants enter screening and answer questions.



Based on algorithm, participants may be sent to secondary screening.



Overview

- Previous studies: Screening for Technology Expo
- Current working concept:  screening
- Have modified the malintent paradigm to evaluate the FAST system for 
- Moving forward
 - Study 204: On site at Draper
 - Study 205: Conduct study at  with research participants
 - Study 206: Prepare for Limited User Evaluation (Test system with )
 - Limited User Evaluation: (Use system with )

Study 204 Cover Story

- Testing a new screening system for (b) (4) staff employees
 - Recruit participants with experience in the food service industry
 - Recruit participants with matched demographic to End User population (e.g., Caucasian, Hispanic, African American, similar educational and socioeconomic backgrounds, some ESL)
- Recruiting participants to work as (b) (4) staff for special event
 - Screening is necessary due to VIPs attending event
 - Screening may take a while; they will have to arrive early and wait

Study 204 Possible Conditions

- No Malintent
- Malintent Without Device
- Malintent Smuggle
 - Smuggle a recording device (i.e., camera) into the facility

Study 204 Increasing Ecological Validity



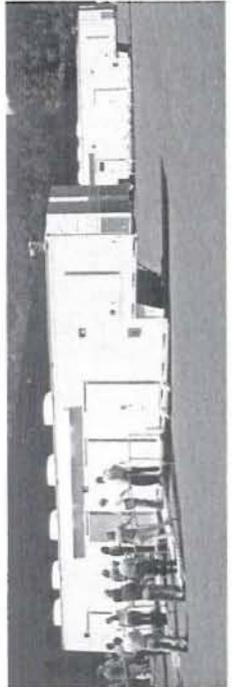
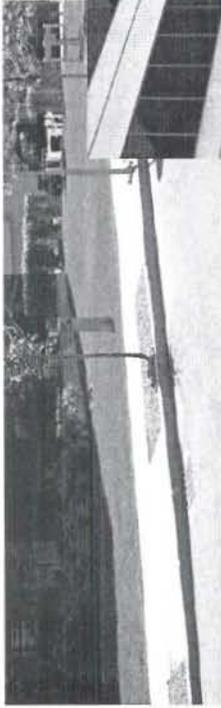
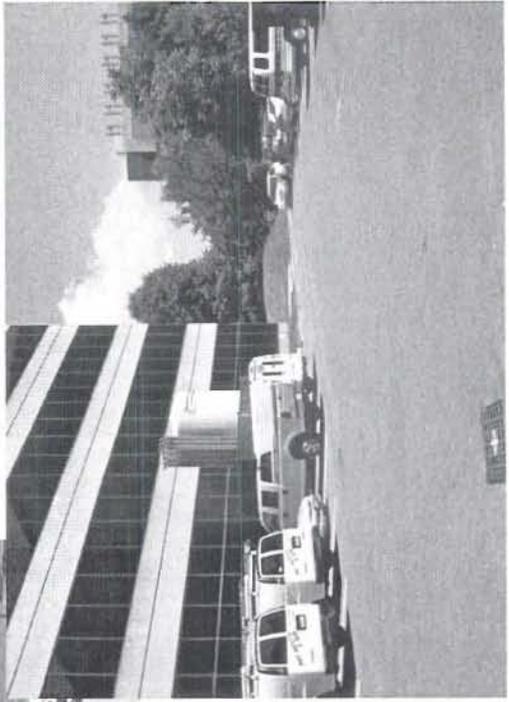
- Using mobile modules
 - All noncontact sensors
 - Walking around to rear of building
 - Signs indicating special event will be taking place
 - Signs indicating (b) (4) staff entrance
 - waiting in line; actors in place; stations; overhead covering
 - Real guards
- Partners
 - Confederates with matching affiliation
- Markers of intent
 - Making ear plugs available
 - After secondary, going towards the exit or (b) (4) staff entrance

Study 204 Motivation and Punishment

- Motivation
 - Bonus for passing through screening
 - Partner with matching affiliation (via pre-testing on α)
 - Allow participants to imagine additional benefits (e.g., possibility of selling pictures)
- Punishment
 - Loss of funds
 - Time detention

Study 204 Secondary Screening

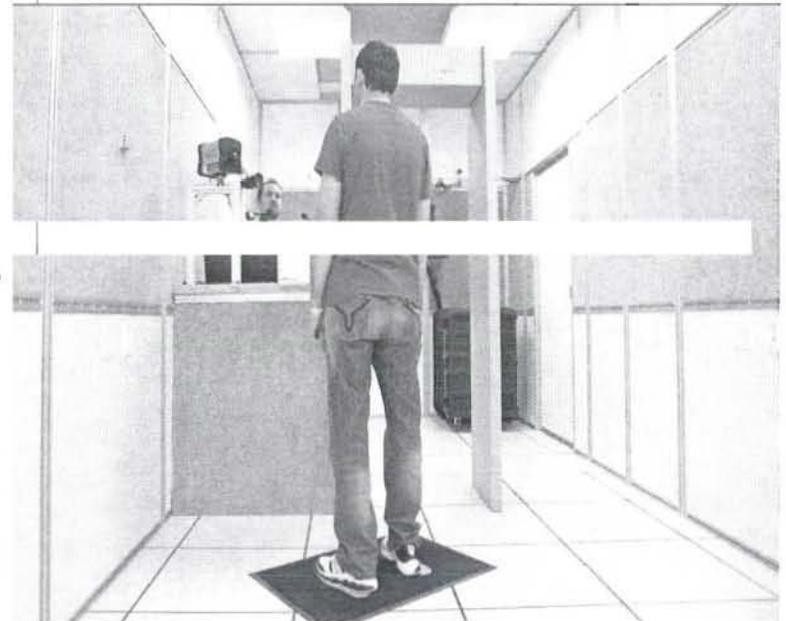
- Examine various interview techniques to elicit maximum amount of information about intent within a limited time period
- Three interview conditions
 - Direct questioning (comparison)
 - Accusatory approach
 - Cognitive load approach
- Outcome Measures
 - Guard evaluations of malintent
 - Secondary raters
 - System decision of malintent vs. secondary guard decision



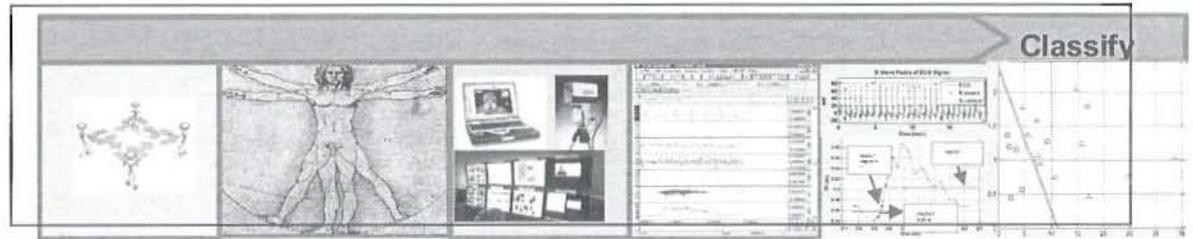
Individuals must serve as their own baseline.

Current state of the program is to use the (b) (4) Paradigm.

- Neutral (Control)
 - Minimal response expected from anyone.
 - Are you in Boston today?
- Relevant 1
 - Similar response expected from everyone.
 - Are you planning to take pictures at the Tech Expo today?
- Relevant 2
 - Response expected from everyone, but exaggerated response expected from individuals with malintent.
 - Are you planning to cause a disturbance at the Tech Expo today?



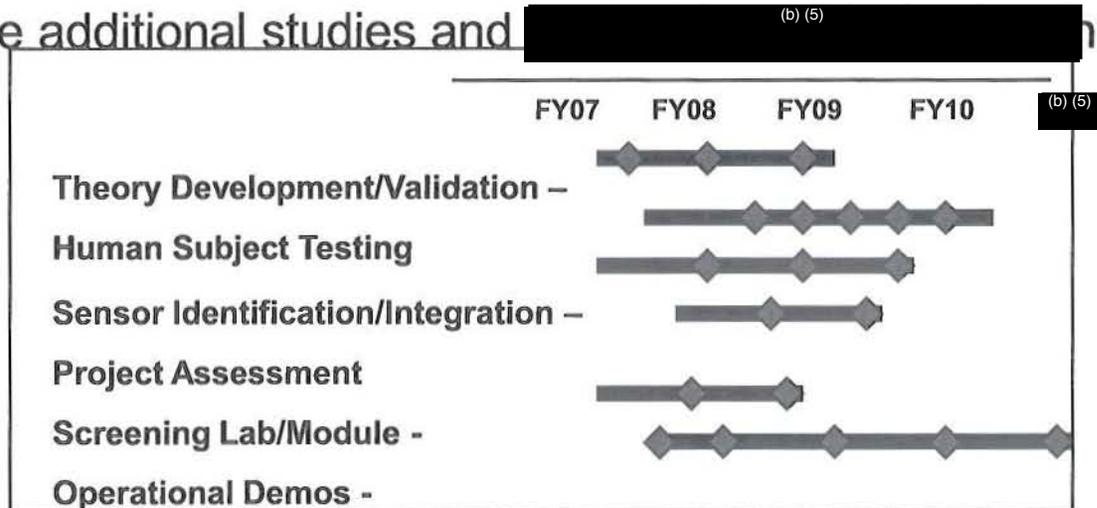
Summary



Activities and Demonstrations

- The FAST program has been created in response to a variety of threats with the goals of increasing throughput and minimizing impact on the public.
- The FAST sensor suite is designed to detect malintent cues and identify individuals *intending* to cause harm.
- Results to date are promising with about 80% classification accuracy. Continuing to validate theory; sensory technology currently being improved.
- Future plans include additional studies and [REDACTED]

[REDACTED]



Unclassified



Homeland Security

Middleton, Robert

From: (b) (6)
Sent: Wednesday, July 14, 2010 12:33 PM
To: (b) (6)
Cc: Middleton, Robert; (b) (6)
Subject: RE: (b) (4) Site Visit

Sounds good. Please send the teleconference #. Thanks

From: (b) (6)
Sent: Tuesday, July 13, 2010 9:02 AM
To: (b) (6)
Cc: Middleton, Robert; (b) (6)
Subject: RE: (b) (4) Site Visit

(b) (6),

We can definitely talk on July 27 to finalize the plans for our meeting the next day. Would 2:30 pm work with your schedule? I can provide a teleconference number. Thanks,

(b) (6)
(b) (6)
(b) (6)

From: (b) (6)
Sent: Tuesday, July 06, 2010 11:41 AM
To: (b) (6)
Cc: Middleton, Robert; (b) (6)
Subject: RE: (b) (4) Site Visit

Works for us. Same entry point (b) (4) lobby – where they will call for us). Let's touch base on 7/27 if you want to go over logistics.

Thanks,
(b) (6)

From: (b) (6)
Sent: Tuesday, July 06, 2010 9:36 AM
To: (b) (6)
Cc: Middleton, Robert; (b) (6)
Subject: RE: (b) (4) Site Visit

(b) (6)

It looks like July 28th would work best for us. Could we meet you at 1:00 pm? My phone numbers are in the signature below. Please send me your phone number, just in case we need to get in touch with you. Also, where in the (b) (4) should we meet you? Thanks for taking the time to meet with us.

(b) (6)

(b) (6)

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From: (b) (6)
Sent: Thursday, July 01, 2010 2:35 PM
To: (b) (6)
Cc: Middleton, Robert; (b) (6)
Subject: RE: (b) (4) Site Visit

(b) (6)

July 27th or 28th works from our side. Let us know if one of those days works for you.

Thanks,

(b) (6)

From: (b) (6)
Sent: Thursday, June 24, 2010 11:33 AM
To: (b) (6)
Cc: Middleton, Robert; (b) (6)
Subject: (b) (4) Site Visit

(b) (6)

Thanks for taking the time to discuss the opportunity to use the (b) (4) as a test bed for the Department of Homeland Security's FAST System. As I mentioned on the call yesterday, I am responsible for the two trailers, or Mobile Modules, that are used to operate the FAST System during field evaluations. I'd like to visit the (b) (4) to take a look at the candidate sites and begin planning for moving the mobile modules into place. Would the week of July 26th be convenient for you to meet and discuss our options.

Thanks again,

(b) (6)

(b) (6)

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