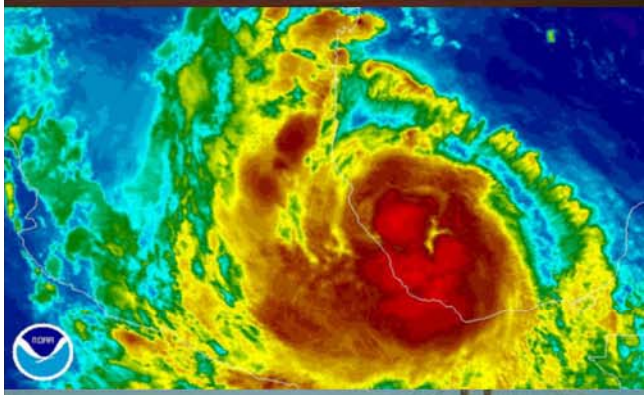
U.S. Department of Homeland Security

S&T Stakeholders West

Putting First Responders First

Los Angeles • January 14-17, 2008



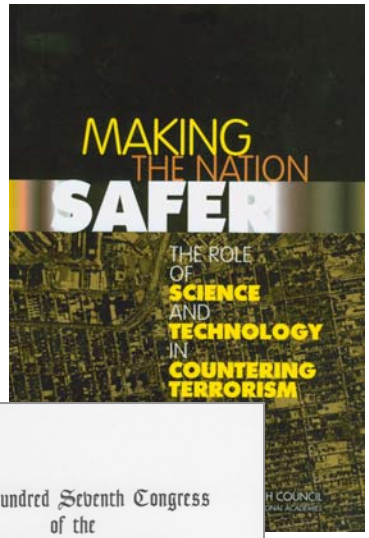
Presented by:

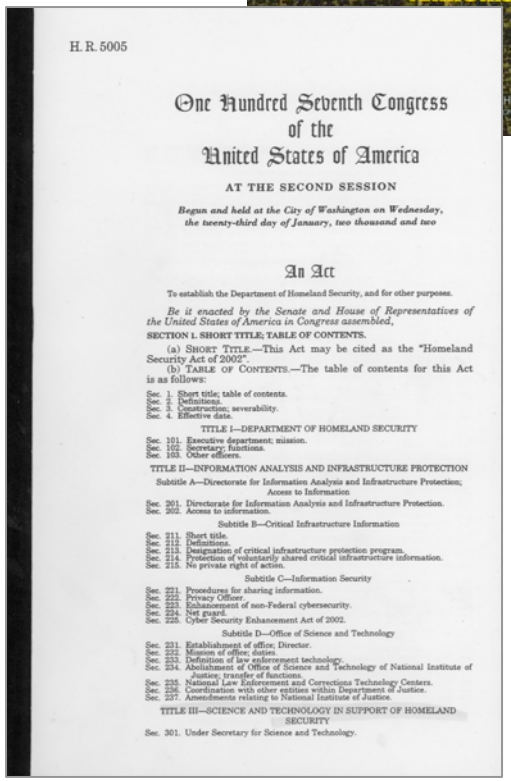
Jay M. Cohen
Under Secretary for Science and Technology
U.S. Department of Homeland Security

Homeland Security

DHS S&T Directorate in Brief

1. How We're Structured
2. What We're Facing
3. What We're Doing
4. What Can We Do Better?
4. How to Work With Us




H. R. 5005

One Hundred Seventh Congress
of the
United States of America

AT THE SECOND SESSION

Begun and held at the City of Washington on Wednesday, the twenty-third day of January, two thousand and two

An Act

To establish the Department of Homeland Security, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "Homeland Security Act of 2002".

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

Sec. 1. Short title; table of contents.
Sec. 2. Definitions.
Sec. 3. Construction; severability.
Sec. 4. Effective date.

TITLE I—DEPARTMENT OF HOMELAND SECURITY

Sec. 101. Executive department; mission.
Sec. 102. Secretary; functions.
Sec. 103. Other officers.

TITLE II—INFORMATION ANALYSIS AND INFRASTRUCTURE PROTECTION

Subtitle A—Directorate for Information Analysis and Infrastructure Protection; Access to Information

Sec. 201. Directorate for Information Analysis and Infrastructure Protection.
Sec. 202. Access to information.

Subtitle B—Critical Infrastructure Information

Sec. 211. Short title.
Sec. 212. Definitions.
Sec. 213. Designation of critical infrastructure protection program.
Sec. 214. Protection of voluntarily shared critical infrastructure information.
Sec. 215. No private right of action.

Subtitle C—Information Security

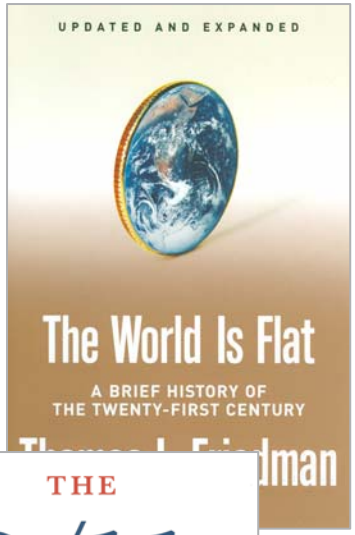
Sec. 221. Procedures for sharing information.
Sec. 222. Privacy Officer.
Sec. 223. Enhancement of non-Federal cybersecurity.
Sec. 224. Net guard.
Sec. 225. Cyber Security Enhancement Act of 2002.

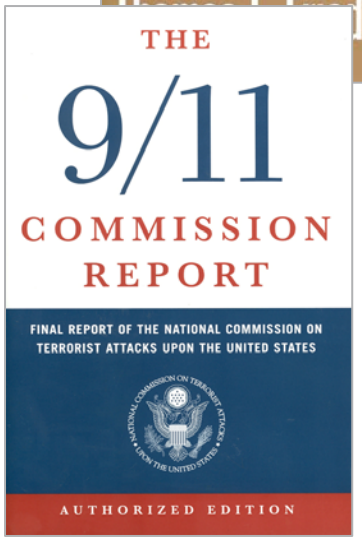
Subtitle D—Office of Science and Technology

Sec. 231. Establishment of office; Director.
Sec. 232. Mission of office; duties.
Sec. 233. Definition of law enforcement technology.
Sec. 234. Abolishment of Office of Science and Technology of National Institute of Justice; transfer of functions.
Sec. 235. National Law Enforcement and Corrections Technology Centers.
Sec. 236. Coordination with other entities within Department of Justice.
Sec. 237. Amendments relating to National Institute of Justice.

TITLE III—SCIENCE AND TECHNOLOGY IN SUPPORT OF HOMELAND SECURITY

Sec. 301. Under Secretary for Science and Technology.





Homeland Security

S&T Goals

Consistent with the Homeland Security Act of 2002

- Accelerate delivery of enhanced technological capabilities to meet requirements and fill capability gaps to support DHS Agencies in accomplishing their mission
- Establish a lean and agile GS-manned, world-class S&T management team to deliver the technological advantage necessary to ensure DHS Agency mission success and prevent technology surprise
- Provide leadership, research and educational opportunities and resources to develop the necessary intellectual basis to enable a national S&T workforce to secure the homeland

DHS S&T Investment Portfolio

Balance of Risk, Cost, Impact, and Time to Delivery

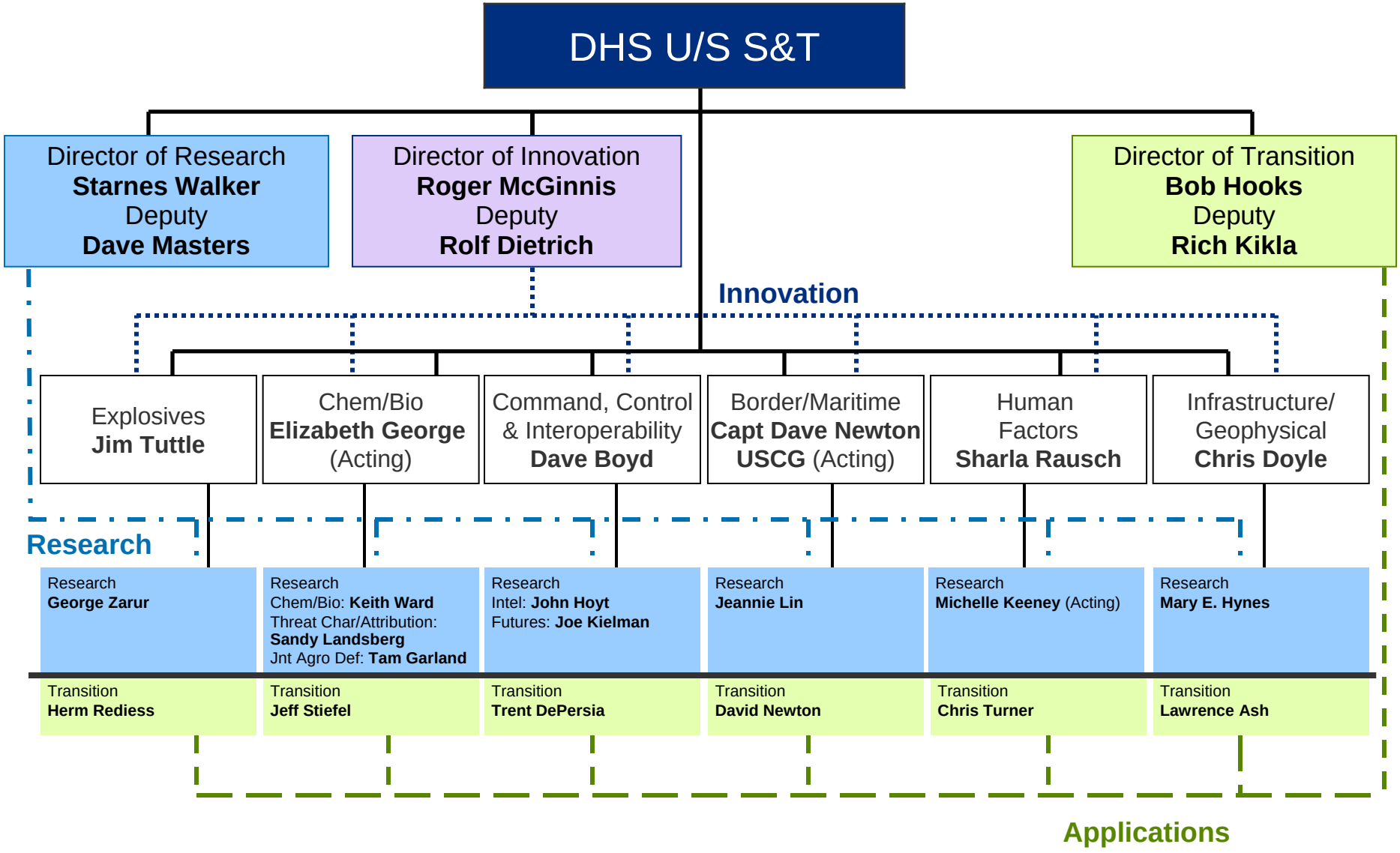
Product Transition (0-3 yrs) ▪ Focused on delivering near-term products/enhancements to acquisition ▪ Customer IPT controlled ▪ Cost, schedule, capability metrics	**Innovative Capabilities (1-5 yrs)** ▪ High-risk/High payoff ▪ "Game changer/Leap ahead" ▪ Prototype, Test and Deploy ▪ HSARPA
Basic Research (>8 yrs) ▪ Enables future paradigm changes ▪ University fundamental research ▪ Government lab discovery and invention	**Other (0-8+ yrs)** ▪ Test & Evaluation and Standards ▪ Laboratory Operations & Construction ▪ Required by Administration (HSPDs) ▪ Congressional direction/law

Customer Focused, Output Oriented

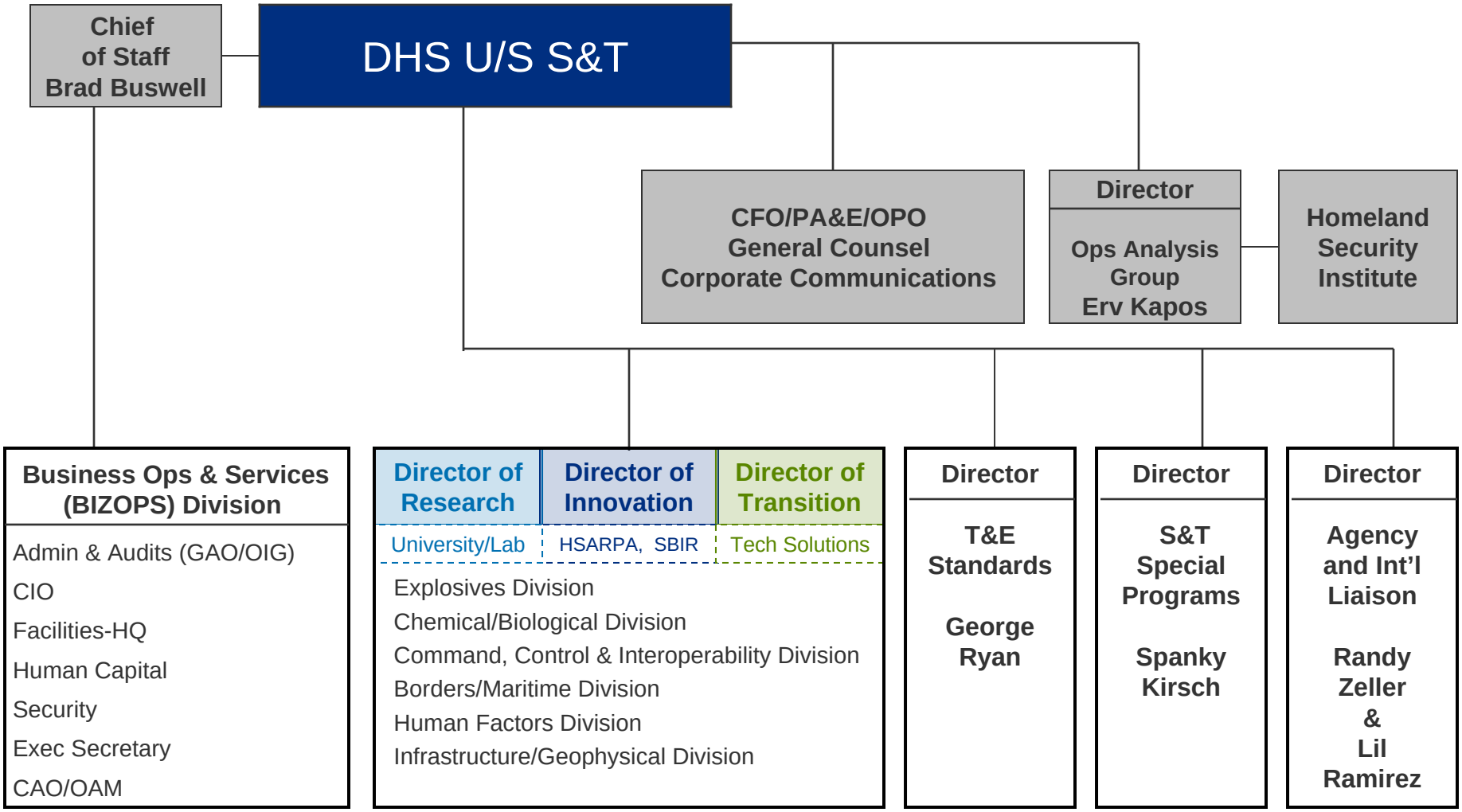
Homeland Security

Bombs – Borders – Bugs – Business

S&T Organization



DHS S&T Directorate

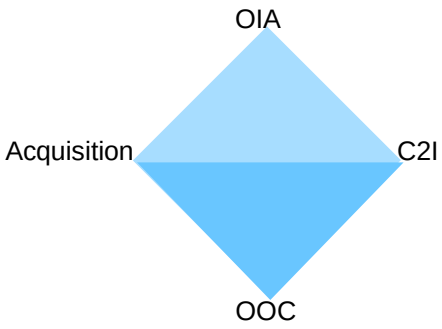


Homeland Security

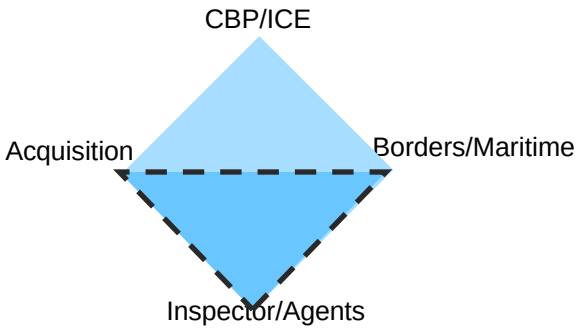
DHS Requirements/Capability Capstone Integrated Product Teams

DHS S&T Product – "Enabling Homeland Capabilities"

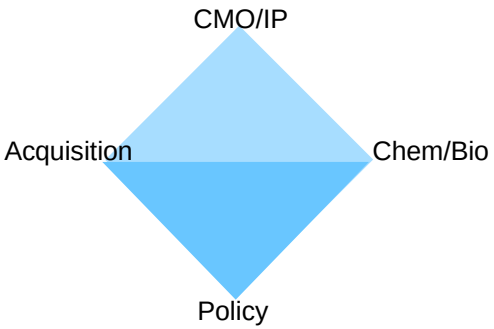
Information Sharing/Mgmt



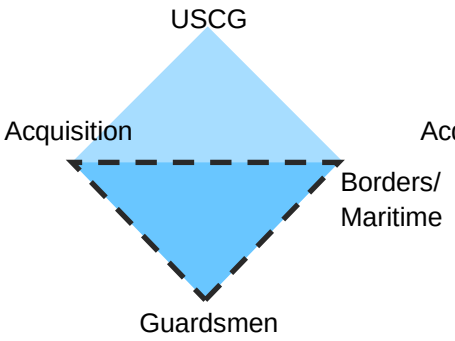
Border Security



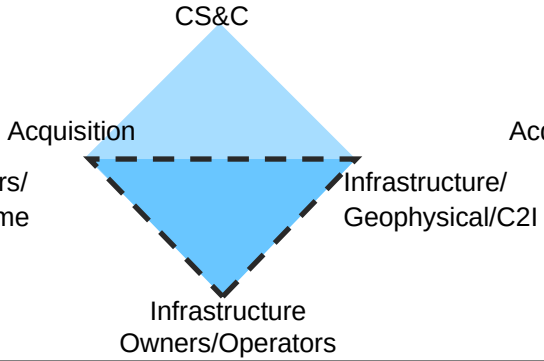
Chem/Bio Defense



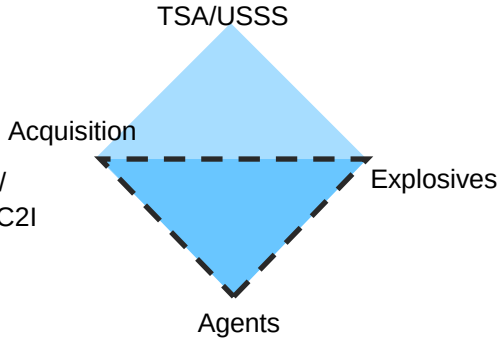
Maritime Security



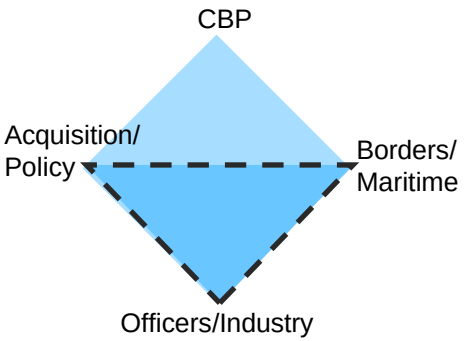
Cyber Security



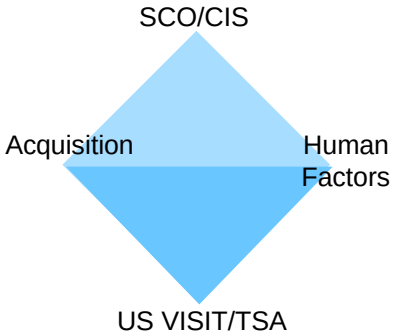
Explosive Prevention



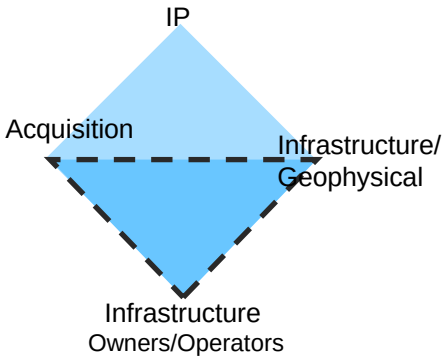
Cargo Security



People Screening

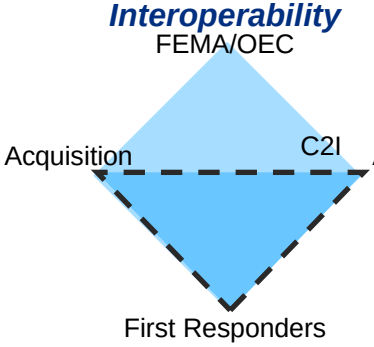


Infrastructure Protection

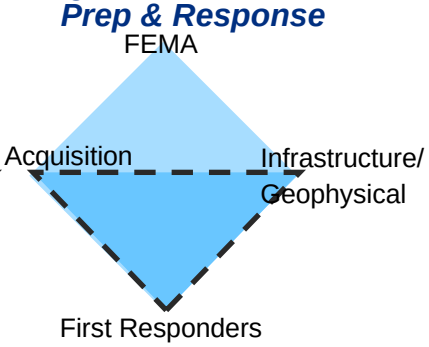


Incident Management

Interoperability



Prep & Response



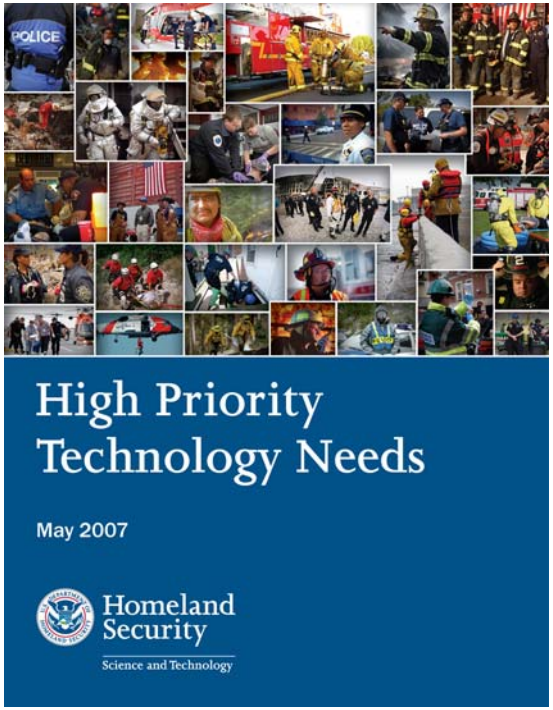
Integrated Product Team (IPT) Initial Outcome

High Priority Technology Needs

- 11 Capstone IPTs have identified 77 High Priority Technology Needs for DHS components and their customers
- Posted at www.hsarpabaa.com
- Baseline established for conducting an iterative, dynamic IPT process on an annual cycle aligned with DHS funding and acquisition processes

IPT Next Steps:

- Focus on delivering product to customers
- Detail proposed technology solutions
- Clarify deliverable and transition plans
- Develop Technology Transition Agreements to establish customer requirements and technical specifications



Customer Focused…Output Oriented

HIPS and HITS

Homeland Innovative Prototypical Solutions (HIPS) are designed to deliver *prototype-level demonstrations* of game-changing technologies in two to five years. Projects are moderate to high risk, with high payoff

High Impact Technology Solutions (HITS) are designed to provide *proof-of-concept* answers within one to three years that could result in high-payoff technology breakthroughs. While these projects are at considerable risk for failure, they offer the potential for significant gains in capability

Homeland Security

Science and Technology

FY-08 Planned Demonstration Timeline

Homeland Innovative Prototypical Solutions (HIPS)

HURRICANE & STORM SURGE MITIGATION

FY08 4Q – Storm surge mitigation system concept demonstration at the Army Corps of Engineers, Vicksburg, MS

LEVEE STRENGTHENING

FY08 4Q – New survey methods demonstration using a variety of geophysical sensors on multiple platforms and address weak levees at the Army Corps of Engineers, Vicksburg, MS

MagViz

FY08 4Q – Liquid explosives field demonstration of a screening prototype for TSA 3-1-1 bags in a coin size tub at Los Alamos National Laboratory, NM

REG

FY08 2&4Q – Laboratory demonstrations of fault limiting superconducting cable at Oak Ridge National Laboratory, TN

FAST M2

FY08 1Q – Non-invasive sensor demonstration, validation and metrics at MIT Draper Laboratory

CHLOE

FY08 1Q – Live-Fire Counter-Manpads Detection demonstration at White Sands Missile Range

High Impact Technology Solutions (HITS)

RESILIENT TUNNEL

FY08 3Q – Trial prototype inflatable plug device at the West Virginia Memorial Tunnel

TUNNEL DETECT

FY08 3Q – Field experiments for improved airborne wide area surveillance system to increase the accuracy of detection

CRITICAL INFRASTRUCTURE CHANGE DETECTION

FY08 1Q – Examine technical characteristics of a new ultra high resolution optical sensor in lower Manhattan in coordination with the New York Police Department

Science & Technology
Innovation Portfolio
HSARPA

DHS / DOE Laboratory Alignment

	S&T DIVISIONS					
	Explosives	Chemical/Biological	Command, Control & Interoperability	Borders/Maritime	Human Factors	Infrastructure/ Geophysical
DOE	LANL PNNL SNL NTS INL	LLNL SNL ANL LANL PNNL LBNL SRNL	LANL LLNL PNNL ORNL NTS INL LBNL	LLNL SRNL BNL	ANL BNL ORNL SNL	ORNL ANL INL BNL LBNL
DHS		PIADC NBACC				
NASA			NASA	NASA	NASA	

Homeland Security

TSL / EML

Centers of Excellence Alignment

S&T DIVISIONS

Explosives	Chemical/Biological	Command, Control & Interoperability	Borders/Maritime	Human Factors	Infrastructure/ Geophysical
NEW *National Center for Explosives Detection & Counter-measures*	National Center for Food Protection and Defense — A Homeland Security Center of Excellence FAZD Center — National Center for Foreign Animal and Zoonotic Disease Defense CAMRA — Center for Advancing Microbial Risk Assessment *Consolidated Chem/Bio Center*	IDS-UACs RVACs *Consolidated CCI Center*	**NEW** *National Center for Border Security & Immigration* **NEW** *National Center for Maritime Domain Awareness and Island & Remote/Extreme Environment*	START	PACER (Basic Research, Applied Science, Preparedness & Response, Education) **NEW** *National Center for Gulf Coast Natural Disaster & Port Security*

Operations & Analysis

Risk Sciences Branch & HSI Risk Determination

Homeland Security

CREATE Homeland Security Center

S&T Outreach

2008 Schedule

- *S&T Stakeholders West* Los Angeles, January 14-17
- *Chemical and Biological R&D Technologies Conference*, San Antonio, TX, January 28-February 1
- *Second Annual DHS University Network Summit*, Washington, DC, March 19-21
- *Stakeholders East*, Washington, DC, June 2-5
- *PacAsia S&T Conference*, Hawaii, Fall 2008

2009 Plans

- *Pacific Rim Conference*, Early 2009, TBA

2007 Highlights

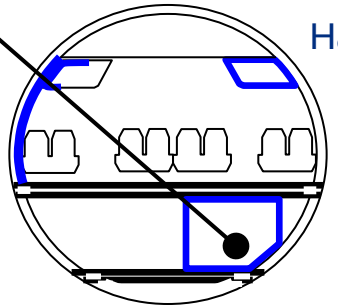
- *First Annual DHS University Network Summit*, Washington, DC, March 14
- *Homeland Security Technology Solutions Demonstrations Event*, Washington, DC, March 16
- *Industry Day*, Washington, DC, March 18
- *S&T Stakeholders Conference*, Washington, DC, May 21-24
- *Technologies for Critical Incident Preparedness Conference*, November 6-8
- *SAFETY Act Workshop*, November 16
- *International Security National Resilience Conference*, December 3-5, London

Homeland Security

Blast Mitigation: Luggage Cargo Hardening

Standard Aluminum Container

video



Hardened Unit Load Device (HULD)

video

Homeland Security

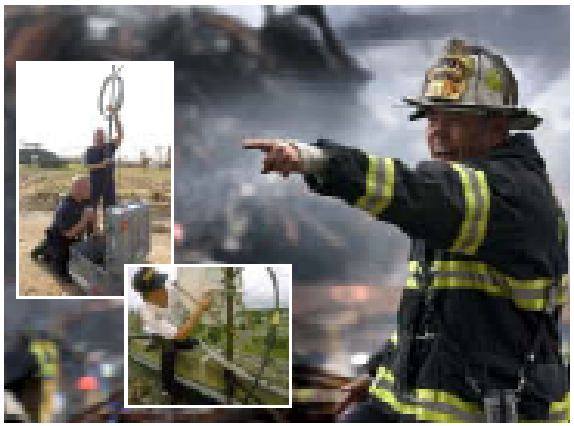
Homeland Security

FROM SCIENCE...SECURITY

Explosives

Chemical/Biological

Command, Control, & Interoperability



Borders/Maritime

Human Factors

Infrastructure/Geophysical

FROM TECHNOLOGY...TRUST

Back-Up Slides

Homeland Security

Homeland Security Act of 2002

HSARPA will….

“Support basic and applied homeland Security research to promote *revolutionary* changes in technologies; advance the development, testing and evaluation, and deployment of critical homeland security technologies; and accelerate the prototyping and deployment of technologies that would address homeland security vulnerabilities.”

Homeland Security

TECHSOLUTIONS

- Mission: rapidly address technology gaps identified by Federal, State, Local, and Tribal first responders
- Field prototypical solutions in 12 months
- Cost commensurate with proposal but less than $1M per project
- Solution should meet 80% of identified requirements
- Provide a web-based mechanism for Emergency Responders to relay their capability gaps (www.dhs.gov/techsolutions)
- Gaps addressed with existing technology, spiral development, rapid prototyping
- Emergency Responders partner with DHS from start to finish

Rapid Technology Development

Target: Solutions Fielded within 1 year, at ~<$1M

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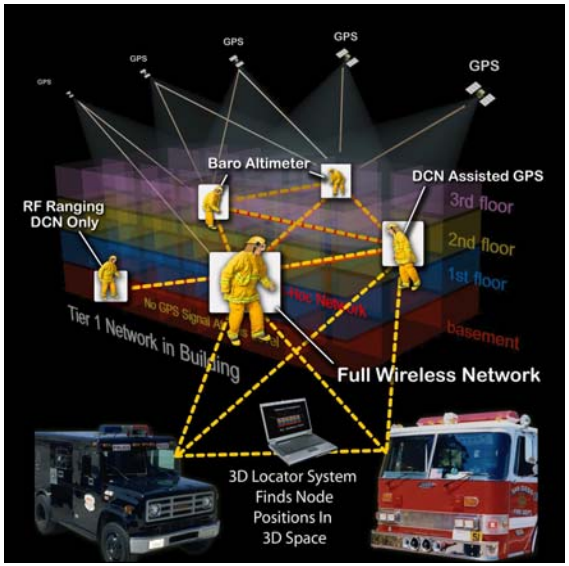
TechSolutions Investments

3-D Locator



Ocular Scanning
Nerve Agents/Toxic Gases

Next Generation
Breathing Apparatus

Carrizo Cane – Bio Agent

Biometric Identification

Fire Ground Compass