2008 Homeland Security S&T Stakeholders Conference West

"Putting First Responders First"
Los Angeles, CA

14-16 January 2008

Agenda

Plenary Session Day 1

Secure Against Fires & Embers (SAFE), Christopher Doyle Director Infrastructure Geophysical Division Science and Technology Directorate Department of Homeland Security

Plenary Session Day 2

The DHS Science & Technology Directorate, The Honorable Jay M. Cohen, Under Secretary, Science and Technology, DHS

- Aluminum Unreinforced Windows Media Audio Video File
- Hardened Aircraft Liner Windows Media Audio Video File
- HULD (Hardened Unit Load Device) Windows Media Audio Video File
- Standard Aircraft No Liner Windows Media Audio Video File

S&T Directorate Division Heads Panel
Mr. Jim Tuttle, Explosives Division
Dr. Beth George, Chemical & Biological Division (Acting)
Dr. David Boyd, Command, Control & Interoperability Division
CAPT David Newton, USCG, Borders & Maritime Security Division (Acting)
Dr. Sharla Rausch, Human Factors Division
Mr. Christopher Doyle, Infrastructure & Geophysical Division

T&E and Standards
Mr. George Ryan, Director, Test & Evaluation and Standards, S&T Directorate, DHS

S&T Portfolio Directors Panel
Mr. Robert Hooks, Director of Transition
Dr. Roger McGinnis, Director of Innovation / HSARPA
Dr. Starnes Walker, Director of Research

Basic Research to Enable a Safer Nation
Mr. Bryan Roberts, Program Manager and Economist, University Programs, S&T Directorate, DHS
Mr. James Johnson, Director, Office of National Laboratories, S&T Directorate, DHS

Los Angeles Regional Common Operational Picture Program (LARCOPP)

Plenary Session Day 3

International Perspectives on S&T Research for Homeland Security

Sweden:
Mr. Ivar Rönnbäck, Deputy Director-General, Swedish Rescue Services Agency
NATO Scenario Windows Media player Video clip
United Kingdom:
Mr. Richard Earland, Chief Information Officer, National Police Improvement Agency, United Kingdom

Interagency Partnerships in S&T Research for Homeland Security
Panelists:

- CAPT Paul Wiedenhoeft, USCG, Sector Commander/Captain of the Port, U.S. Coast Guard Sector Los Angeles - Long Beach
- Mr. Mark Denari, Director, Aviation Security & Public Safety, San Diego County Regional Airport Authority
- Mr. Daniel Hartwig, Manager of Security Programs, Bay Area Rapid Transit (BART), San Francisco

Pre Conference Training Workshop
Monday, 14 January 2008

Training Session 3:*Better Security via Randomization: A Game Theoretic Approach and its Operationalization at the Los Angeles International Airport*
Dr. Milind Tambe Professor of Computer Science, USC

Training Session 4: *Risk Communications and Public Warnings:Briefout from the July workshop*
Moderator:
Dennis Mileti

Training Session 5: *Scholars in Homeland Security*

Mr. Will McCormick

Training Session 7: *ALLHAZ Providing a Common Operating Picture for Emergency Management*
Elizabeth J. Matlack, Director National Center for Biodefense Communications

Training Session 8: *Small and Disadvantaged Business Opportunities*
Ms. Phyllis Miriashtiani, Small Business Advocate Office of Small and Disadvantaged Business Utilization Office of Procurement Operations, DHS

Training Session 9: *Things to Remember when Doing Business in (h)omeland (s)ecurity*
Mr. David Olive, Olive Edwards & Cooper, LLC
Mr. Rich Cooper, Olive, Edwards & Cooper, LLC
David McWhorter, Olive, Edwards & Cooper, LLC

Training Session 10: Interoperability Training: An Introduction to Specific Tools for Communications Interoperability Improvement
Luke Klein-Berndt, CTO, CCI, DHS S&T (confirmed)

Training Session 15: ***Current Science & Technology Business Opportunities***
Ms. Wanda Armwood,, Associate Director Office of Procurement Operations,
Office of Procurement Operations

Training Session 16: *What the Homeland Security Institute is and does*
Grants to Fund Your Homeland Security Projects, Michael Paddock, CEO, Grants Office LLC

Training Session 17: *Federated Simulation Based Training, Exercise, and Lessons Learned*
Jalal Mapar, Program Manager, IGD, DHS S&T

Training Session 18: *Crisis Communication 3 State Model Systems & Gaps*
Mr. Chris Logan, National, Governors Association, Program, Director for Homeland Security

Training Session 19: *Explosive Detection Technology: What Do First Responders Really Want?*
Part 1
Dr. Susan Hallowell, Director, TSL

- Plume.avi windows media player (video clip)
- 10% Back Windows media player (video clip)
- SimultaneousITMS Windows media player (mpeg movie file)
- ITI_A Windows media player (mpeg movie file)

Detection Technologies Primer, David Hernandez, Transportation Security Laboratory, S&T Directorate, US Department of Homeland Security

Training Session 21: *Workforce Development at the Frontier of DHS: Relevant Science, Technology, Engineering and Mathematics*
Moderator: Tom Kowalczyk, Office of University programs, DHS S&T

- **Panelists:**
- Dr. Mike Zyda, Director of GamePipe Lab USC (ppt)
- Dr. Isaac Maya, Research Director CREATE, USC
- Mr. Adam Jascoff, NIST, Dept. of Commerce
- Ms. Cindy Randall, FIRST (For Inspiration and Recognition of Science and Technology)

Universal Detection Technology “Using the TS-10-5 Biothreat Detection Kit”
Components of Lateral Flow

Training Session 22: *10 Reasons Why You Should Partner with DHS S&T*
Dr. Tom Cellucci, Chief Commercialization Officer DHS S&T Directorate

Training Session 28: *SBIR Tutorial*
Ms. Lisa Sobolewski, DHS S&T

Training Session 29: *Next Generation Tech Transfer: Incubation, Rapid Prototyping, Tech Scouting*

Mr. Roger London
Next Generation Technology Transfer, Kelsey Kohler, Executive Director, Watervliet Innovation Center

Training Session 30: *The Future of Wireless and First Responders*
Mr. Juan Deaton, Critical Infrastructure Protection Idaho National Laboratory

Training Session 32: *National Trends in Homeland Security Education*
Mr. Eric Frost, Co-Director, Homeland Security Master's Program, San Diego State University
Dr. Stanley Supinski, Director of Partnership Programs Naval Postgraduate School
Dr. Tracy DeWitt, Professor University of Arkansas
Dr. Hilda Blanco, University of Washington

Training Session 37: *Preparing First Responders for Food Systems Disasters*
Jerry Gillespie, DVM, PhD Director, Western Institute for Food Safety and Security

Training Session 39: *Technology Adoption & Innovation 1*
Dr. Neal Thornberry, Innovation Chair Graduate School of Business and Public Policy, Naval Postgraduate School

Training Session 41: *TechSolutions: Solutions for First Responders*
Greg Price, Director, TechSolutions DHS S&T

Training Session 42: *The SAFETY Act*
Ms. Sylvia Cabrera, Office of SAFETY Act Implementation, S&T Directorate, DHS

Training Session 44: *GIS Response to the 2007 San Diego Wildfires*
Paul Hardwick, GIS Project Manager, Center for Homeland Security, SDSU Research Foundation

Training Session 45: *Science As Diplomacy*
Panelists:

- Dr. Mayya Tokman, Professor of Applied Mathematics, University of California Merced
- Mr. Andy Perkins, Science & Innovation Officer British Consulate-General Los Angeles, CA
- Diplomatic Expert Elicitation for Intelligence, Strategy and Scientific Technology Threat, Terry O'Sullivan, PhD, Center for Risk and Economic Analysis of Terrorism Events (CREATE), University of Southern California

Training Session 48: *How Real-Time Video Distribution Changes Homeland Security Mission Profiles*

Tuesday, 15 January 2008
Science & Technology Breakout Sessions

Breakout 1: *TechSolutions: Solutions for First Responders*
Mr. Greg Price, Director, TechSolutions

Breakout Session 2: *Who you gonna call?*
Panelists:

- Colonel Daniel Nelan
- Major General Raymond F. Rees
- Lieutenant Colonel Jeff Smiley

Homeland Security Institute Overview

Breakout 3: *Advanced Technologies for First Responders and Incident Management Teams*
Jalal Mapar, Program Manager DHS S&T

Breakout 5: *Use of Modeling & Simulation for California's Golden Guardian Exercise 07*
Michael Mercer, Associate Program Manager Systems Solutions Group, Lawrence Livermore National, Laboratory

Breakout 6: *Innovation at the Edge - Accelerating University and National Lab Research to First/Early Responders*
Panelists:

- Dr. William Pottenger, Research Professor, Rutgers University
- Ms. Carol Maresca, Deputy Superintendent of Police/Deputy Director, Public Safety Department,
- NY&NJ Port Authority

Breakout 7: *Managing the cultural change when a common operational picture platform is implemented*
Mr. Wayne Tolosa, President and CEO, Future Concepts I.S., Inc.

Breakout 8 : *FirstResponder.gov*
Sonja Rodriguez Director Tech Clearinghouse Science and Technology Directorate
Sonja Rodriguez Director Tech Clearinghouse Science and Technology Directorate

Breakout 9: *Critical Infrastructure Inspection Management System Working in Maryland*
Moderator:

- Herb Engle, Program Manager, DHS S&T

Breakout 12: *Northwest Regional Technology Center for Homeland Security: A Model for Connecting State and Local Needs and DHS S&T's Research*

Wednesday, 16 January 2008
Science & Technology Breakout Sessions

Breakout 15: Chemical and Biological Division A
Anne Hultgren, PhD, Program Manager Chem Bio R&D BBranch

Breakout 16: *Borders and Maritime Security Division*
Fiscal Year 2008, Borders & Maritime Security Division, Science and Technology Directorate

- What Are You Thinking Windows Media player mpeg movie file
- Chopper Footage Windows Media player mpeg movie file
- Coalition Warrior Interoperability Windows Media player mpeg movie file
- Future Weapons Windows Media player mpeg movie file
- Track and Events Aug 21 Windows Media player mpeg movie file
- Boat Trap Windows Media player mpeg movie file
- BT COMMS Windows Media player mpeg movie file

Breakout 17: *Explosives Division A Explosives Division: Counter-IED Program and the First Responder*
Joe Foster, Program Manager Explosives Division S&T Directorate, DHS

Breakout 18: *IPT Process: Methods and Results*
Mr. Bob Hooks, Director of Transition, S&T Directorate

Breakout 20: *S&T Pilot Programs in California: A User Perspective*
Steve Weiss, Five-Year NIMS Training Plan: An Example of an HSI Task

Breakout 21: International B: Sweden RAKEL Sweden's new shared digital radio communication system for emergency management

- Mr. Stefan Kvarnerås, Swedish Emergency Management Agency
- Mr. Anders Åkeson, SAAB, EADS and Eltel Consortium

Breakout 23: *Mission and Goals of the Human Factors Division: Social-Behavioral Threat Analysis*
Sharla Rausch, Ph.D., Division Head, Human Factors Division: Social-Behavioral Threat Analysis,

Breakout 24: *Explosives Division B Response/Render Safe— Developing Future Requirements for the First Responder*

- Mr. Joe Foster, Program Manager Explosives Division S&T Directorate, DHS
- Kelly Bray, Explosives Division S&T Directorate, DHS

Breakout 27: *S&T Laboratories A: Environmental Measurements Laboratory Support to State & Local First Responders*

- Dr. Adam Hutter, Director, EML
- Mr. Lawrence Ruth, Director, Systems Division, EML

Breakout 28: *International C: United Kingdom National Police Improvement Agency*
Mr. Richard Earland, Chief Information Officer, National Police Improvement Agency

Breakout 29: Command, Control & Interoperability Division RDT&E for Emergency Responders.
Panelists:

- Chief Charles Werner, Charlottesville, VA Fire Department
- Mr. Dereck Orr, Program Manager for Public Safety Communication Standards, Office of Law Enforcement, Standards National Institute of Standards and Technology
- Dr. Carolyn Ford, Institute for Telecommunication Sciences, National Telecommunications and Information Administration
- Angela M. Ervin, Ph.D. Program Manager Chem Bio R&D Branch ChemBioR&DBran, Science and Technology Directorate Department of Homeland Security
    - Video Windows Media player video clip

Breakout 30: *Mission and Goals of the Human Factors Division: Human-Systems Research and Engineering*

- Sharla Rausch, Ph.D., Division Head, Human Factors Division:Human-Systems Research and Engineering/Biometrics
- Sharla Rausch, Ph. D, Division Head, S&T Human Factors Division: Overview

Breakout 33: *Technology Clearing House*
Ms. Sonja Rodriguez, Director, Tech Clearinghouse, DHS S&T

Breakout 34: The Transportation Security Laboratory
Dr. Susan Hallowell, Director, TSL

- 300 Pressurized Windows Media player mpeg movie file
- ULD seen from cargo hold Windows Media player mpeg movie file

2008 DHS Science & Technology Stakeholders Conference

Why am I losing sleep?

(Underwater, Tubes and Tunnels)

Dan Hartwig, Manager of Security Programs
(510) 464-7077
Dhartwi@bart.gov

BART/Lawrence Livermore Nat'l Lab and DHS Science & Technology Partnership

- BART approached LLNL in 2003 for help characterizing known vulnerabilities to the post 9/11 threat-space.
- LLNL worked with BART
  - to secure DHS resources
  - to bound the threat-space
  - to fully characterize the vulnerability to a terrorist threat
- LLNL assisted BART with mitigation efforts to protect vulnerable infrastructure.
- As a result of LLNL/BART efforts, LLNL is now doing similar work with other metropolitan transit systems.

Threat to vulnerable transit infrastructure is real and can be of high consequence.

BART is Public Transportation

- BART serves 100 million passengers per year.
- Passengers have open access to stations and public areas.
- During commute hours passenger trips through the Transbay Tube equal the number of vehicle trips across the Bay Bridge.
- Each 10-car train carries approximately 1,000 people.

Transbay Tube

- The 3.6 mile-long Transbay Tube is 135 feet below the surface of the San Francisco Bay.
- A catastrophic breach would flood the 4 downtown San Francisco Stations in 8-14 minutes (shared with Muni).
- During peak commute there could be more than 4,000 people in the tube (four 10-car trains) and thousands more in stations.

Transbay Tube Fire

- The most serious incident on BART to date was the 1979 fire caused by a mechanical failure.
- One firefighter died during the response.
- No passengers were harmed.

Time, Direction & Location

- Thousands of passengers use downtown stations during commute hours.
- Public stations are vulnerable to biological, chemical and other threats.
- Can we to completely secure these stations?

Operations Control Center

- The OCC is the heart of BART's operations.
- Loss of the OCC capabilities would shut down BART.

Questions? Comments?

2008 Homeland Security S&T Stakeholders Conference West

"Putting First Responders First"

Presented by NDIA with Technical Assistance from the Science & Technology Directorate, Department of Homeland Security

"All session times, topics, and speakers subject to change"

Monday January 14, 2008		**Pre-Conference Training Workshop**					
Time		***Event Title*** *(Location)*					
8:00a -5:00p		**On-Site Conference Registration**					
9:00a -4:45p		**Training Sessions** ("LES" = Law Enforcement Sensitive - separate registration required)					
9:00a-9:45a		Training Workshop Track 1 & 2 **Training Session 1-2** **Overview: Doing Business with DHS S&T** Ms. Soraya Correa, Director, Office of Procurement Operations, DHS *(confirmed)*	Training Workshop Track 3 **Training Session 3** *Science & Technology for First Responders* **Better Security via Randomization: A Game Theoretic Approach and its Operationalization at the Los Angeles International Airport** Dr. Milind Tambe Professor of Computer Science, USC *(confirmed)*	Training Workshop Track 4 **Training Session 4** *Science & Technology Training for First Responders* ***Crisis Communication 1*** **Risk Communications and Public Warnings: Briefout from the July workshop** **Moderator:** Dennis Mileti *(confirmed)*	Training Workshop Track 5 **Training Session 5** **Scholars in Homeland Security** Mr. Will McCormick SDSU	Training Workshop Track 6 **Training Session 6** *Science & Technology Training for First Responders* **IED Training for First Responders** (LES) **IED 101** **IED Lessons Learned from Iraq** Lt. Col. Max Velte, US Army	Training Workshop Track 7 **Training Session 7** *Science & Technology Training for First Responders* **ALLHAZ Providing a Common Operating Picture for Emergency Management** Elizabeth J. Matlack Director National Center for Biodefense Communications *(confirmed)*
9:45a-10:00a		**Transition Break**					
10:00a-10:45a		Training Workshop Track 1 **Training Session 8** *Doing Business with DHS S&T* **Small and Disadvantaged Business Opportunities** Ms. Phyllis Miriashtiani Small Business Advocate Office of Small and Disadvantaged Business Utilization Office of Procurement Operations, DHS *(confirmed)*	Training Workshop Track 2 **Training Session 9** **Things to Remember when Doing Business in (h)omeland (s)ecurity** Mr. David Olive Olive Edwards & Cooper, LLC *(confirmed)* Mr. Rich Cooper Olive, Edwards & Cooper, LLC *(confirmed)* David McWhorter Olive, Edwards & Cooper, LLC *(confirmed)*	Training Workshop Track 3 **Training Session 10** *Science & Technology Training for First Responders* **Interoperability Training: An Introduction to Specific Tools for Communications Interoperability Improvement** Luke Klein-Berndt CTO, CCI, DHS S&T *(confirmed)* Michael Skena, Touchstone Consulting *(confirmed)* Jeff Phaneuf, Touchstone Consulting *(confirmed)*	Training Workshop Track 4 **Training Session 11** *Science & Technology Training for First Responders* ***Crisis Communication 2*** **Risk Communications and the New Media** **Moderator:** Lynn Goldman PACER *(confirmed)* **Panelists:** Mr. Jay Alan Deputy Director for Communications, California Office of Homeland Security *(confirmed)* Mr. Michael Bustamante former Press Secretary for Governor of California	Training Workshop Track 5 **Training Session 12** *Science & Technology Training for First Responders* **IED 101** TBA National Protection & Programs Directorate, DHS	Training Workshop Track 6 **Training Session 13** **IED Training for First Responders** (LES) ***Incident Response to Terrorist Bombings 1*** EMRTC, New Mexico Tech	Training Workshop Track 7 **Training Session 14** *Science & Technology Training for First Responders* **Homeland Defense Operational Planning System (HOPS)** John Crandley Training Director, HOPS Lawrence Livermore National Laboratory *(confirmed)*

					(confirmed) Mr. Jeff Macedo, Deputy Press Secretary Governor of California *(confirmed)* TBA			
10:45a-11:00a		**Networking Coffee Break** *(TBD)*						
11:00a-11:45a		Training Workshop Track 1 **Training Session 15** *Doing Business with DHS S&T* **Current Science & Technology Business Opportunities** Ms. Wanda Armwood, Associate Director Office of Procurement Operations, DHS *(confirmed)*	Training Workshop Track 2 **Training Session 16** **What the Homeland Security Institute is and does** Mr. Phil Anderson Director HSI *(confirmed)*	Training Workshop Track 3 **Training Session 17** *Science & Technology Training for First Responders* **Federated Simulation Based Training, Exercise, and Lessons Learned** Jalal Mapar, Program Manager, IGD, DHS S&T *(confirmed)*	Training Workshop Track 4 **Training Session 18** *Science & Technology Training for First Responders* ***Crisis Communication 3*** **State Model Systems & Gaps** **Moderator:** Lynn Goldman PACER **Panelists:** Mr. Chris Logan, National Governors Association, Program Director for Homeland Security *(confirmed)*	Training Workshop Track 5 **Training Session 19** *Science & Technology Training for First Responders* **Explosive Detection Technology: What Do First Responders Really Want? Part 1** Dr. Susan Hallowell Director, TSL *(confirmed)*	Training Workshop Track 6 **Training Session 20** **IED Training for First Responders** (LES) ***Incident Response to Terrorist Bombings 2*** EMRTC, New Mexico Tech	Training Workshop Track 7 **Training Session 21** **Workforce Development at the Frontier of DHS: Relevant Science, Technology, Engineering and Mathematics** **Moderator:** Tom Kowalczyk, Office of University programs, DHS S&T *(confirmed)* **Panelists:** Dr. Mike Zyda Director of GamePipe Lab USC Dr. Isaac Maya Research Director CREATE, USC *(confirmed)* Mr. Daniel Wendel Teacher Education Program MIT *(confirmed)* Mr. Adam Jascoff NIST, Dept. of Commerce *(confirmed)* Mr. Justin Wolf, PNNL *(confirmed)* Ms. Cindy Randall FIRST (For Inspiration and Recognition of Science and Technology) *(confirmed)*
11:45a-12:00 p.		**Transition Break**						
12:00p-12:45 p		Training Workshop Track 1 **Training Session 22** *Doing Business with DHS S&T* **10 Reasons Why You Should Partner with DHS S&T** Dr. Tom Cellucci Chief Commercialization Officer DHS S&T Directorate *(confirmed)*	Training Workshop Track 2 **Training Session 23** **Homeland Security Institute** **TBA**	Training Workshop Track 3 **Training Session 24** *Science & Technology Training for First Responders* **U.S. Secret Service Escape Hood Technology** Mr. Tony Chapa Deputy Assistant Director United States Secret Service *(confirmed)*	Training Workshop Track 4 **Training Session 25** *Science & Technology Training for First Responders* ***Crisis Communication 4*** **Local Viewpoints** **Moderator:** Lynn Goldman PACER **Panelists:** Mr. Jay Alan Deputy Director for Communications, California Office of Homeland Security *(confirmed)* Mr. Ron Lane, San Diego County Emergency Services Director *(confirmed)* Ms. Ladona Harvey, Morning News Anchor KOGO 600 AM Radio San Diego, CA *(confirmed)*	Training Workshop Track 5 **Training Session 26** *Science & Technology Training for First Responders* **Explosive Detection Technology: What Do First Responders Really Want? Part 2** Dr. Susan Hallowell Director, TSL *(confirmed)*	Training Workshop Track 6 **Training Session 27** **IED Training for First Responders** (LES) ***Incident Response to Terrorist Bombings 3*** EMRTC, New Mexico Tech	
12:45p-2:00p		**No-Host Networking Lunch in Convention Center Food Court**						

	Training Workshop Track 1 **Training Session 28**	Training Workshop Track 2 **Training Session 29**	Training Workshop Track 3 **Training Session 30**	Training Workshop Track 4 **Training Session 31**	Training Workshop Track 5 **Training Session 32**	Training Workshop Track 6 **Training Session 33**	Training Workshop Track 7 **Training Session 34**
2:00p-2:45p	*Doing Business with DHS S&T* **SBIR Tutorial** Ms. Lisa Sobolewski DHS S&T *(confirmed)*	**Next Generation Tech Transfer: Incubation, Rapid Prototyping, Tech Scouting** Mr. Roger London, *(confirmed)*	*Science & Technology Training for First Responders* **The Future of Wireless and First Responders** Mr. Juan Deaton Critical Infrastructure Protection Idaho National Laboratory *(confirmed)*	*Science & Technology Training for First Responders* ***Crisis Communication 5*** **How Do You Communicate During a Crisis?** ***A live broadcast on the "Homeland Security Inside & Out" radio program*** **Moderator:** Dr. David McIntyre, Texas A&M University; Director, Integrative Center for Homeland Security at Texas A&M University, Co-Host, "*Homeland Security Inside & Out*" **Media Panelists:** Allison Barrie, FOX News TBA	**National Trends in Homeland Security Education** Mr. Eric Frost Co-Director, Homeland Security Master's Program San Diego State University *(confirmed)* Dr. Stanley Supinski Director of Partnership Programs Naval Postgraduate School *(confirmed)* Dr. Tracy DeWitt Professor University of Arkansas *(confirmed)* Dr. Hilda Blanco University of Washington *(confirmed)*	**IED Training for First Responders** (LES) ***Incident Response to Terrorist Bombings 4*** EMRTC, New Mexico Tech	**SIGMA: Science Fiction in the National Interest** **Moderator:** Dr. Arlan Andrews, Sr. **Panelists:** Greg Bear David Brin Michael Cassutt Larry Niven Jerry Pournelle Walter Jon Williams
2:45p-3:00p	**Networking Coffee Break** *(TBD)*						
	Training Workshop Track 1 **Training Session 35**	Training Workshop Track 2 **Training Session 36**	Training Workshop Track 3 **Training Session 37**	Training Workshop Track 4 **Training Session 38**	Training Workshop Track 5 **Training Session 39**	Training Workshop Track 6 **Training Session 40**	Training Workshop Track 7 **Training Session 41**
3:00p-3:45p	*Doing Business with DHS S&T* **Raising Capital Panel: Harnessing Global Security Opportunities** **Moderator:** Mr. Tom Cellucci Chief Commercialization Officer DHS S&T Directorate *(confirmed)* **Panelists:** Matt McCooe Managing Partner Chart Venture Partners Ms. Kelsey Kohler Executive Director Watervliet Innovation Center	**Best Practices In Leveraging The DHS Consolidated Acquisition Strategy** Mr. Sean Burke President, Govplace *(confirmed)*	*Science & Technology Training for First Responders* **Preparing First Responders for Food Systems Disasters** Jerry Gillespie, DVM, PhD Director, Western Institute for Food Safety and Security Paul Friedrich DHS Agroterrorism Preparedness Curriculum Coordinator Western Institute for Food Safety and Security	**Blogging for Technology: Science and the New Media** **Moderator:** Mr. Matt Armstrong Publisher www.mountainrunner.us *(confirmed)* **Panelists:** Allison Barrie, FOX News *(confirmed)* TBA	**Technology Adoption & Innovation 1** Dr. Neal Thornberry Innovation Chair Graduate School of Business and Public Policy Naval Postgraduate School Dr. Anita Salem Research Associate Center for Defense Management Reform Graduate School of Business and Public Policy Naval Postgraduate School	**IED Training for First Responders** (LES) ***Incident Response to Terrorist Bombings 5*** EMRTC, New Mexico Tech	*Science & Technology Training for First Responders* **TechSolutions*:* Solutions for First Responders** Greg Price Director, TechSolutions DHS S&T *(confirmed)*
3:45p-4:00p	**Transition Break**						

		Training Workshop Track 1	Training Workshop Track 2	Training Workshop Track 3	Training Workshop Track 4	Training Workshop Track 5	Training Workshop Track 6	Training Workshop Track 7
		Training Session 42	**Training Session 43**	**Training Session 44**	**Training Session 45**	**Training Session 46**	**Training Session 47**	**Training Session 48**
4:00p-4:45p		*Doing Business with DHS S&T* **The SAFETY Act** Ms. Sylvia Cabrera Office of SAFETY Act Implementation S&T Directorate, DHS *(confirmed)*	**The American Security Challenge** Mr. Roger London *(confirmed)*	*Science & Technology Training for First Responders* **GIS Response to the 2007 San Diego Wildfires** Paul Hardwick GIS Project Manager Center for Homeland Security, SDSU Research Foundation *(confirmed)*	**Science As Diplomacy** **Moderator:** Mr. Matt Armstrong Publisher www.mountainrunner.us *(confirmed)* **Panelists:** Dr. Mayya Tokman Professor of Applied Mathematics University of California Merced Mr. Andy Perkins Science & Innovation Officer British Consulate-General Los Angeles, CA	**Technology Adoption & Innovation 2** Dr. Neal Thornberry Innovation Chair Graduate School of Business and Public Policy Naval Postgraduate School *(confirmed)* Dr. Anita Salem Research Associate Center for Defense Management Reform Graduate School of Business and Public Policy Naval Postgraduate School *(confirmed)*	**IED Training for First Responders** (LES) ***Incident Response to Terrorist Bombings 6*** EMRTC, New Mexico Tech	**How Real-Time Video Distribution Changes Homeland Security Mission Profiles**
4:45p-5:00p		**Transition Break**						
5:00p		**Exhibit Hall Ribbon Cutting**						
5:00p-7:00p		**"Salute to Law Enforcement" Welcome Reception in Exhibit Hall**						
7:00p		**Exhibit Hall closes**						

Tuesday January 15, 2008		**2008 Homeland Security S&T Stakeholders Conference West** ***"Putting First Responders First"*** **Day 1 - Morning Session**
Time		***Event Title*** *(Location)*
7:00a-5:00p		**On-Site Conference Registration & Information**
8:00a-9:00a		**Continental Breakfast**
9:00a-6:00p		**Exhibit Hall Open**
9:00a-4:00p *(In parallel with other activities)*		**Innovation Gateway Marketplace Networking** *(By appointment only – abstract submittal in advance required)* **SAFETY Act Pre-Application Consulting** *(By appointment only in SAFETY Act Booth)*
8:30a-9:00a		**nTag Training Session and Audience Surveys**

9:00a-9:10a		**Opening Ceremony** **Conference Overview & General Info** Maj. Gen. Barry Bates, USA (Ret.), Director of Operations, NDIA *(confirmed)*
9:10a-9:20a		**Conference Host Welcome** TBA **Welcome & Introduction of Under Secretary for Science & Technology** Mr. Matthew Bettenhausen, Executive Director, State of California/Governor's Office of Homeland Security *(confirmed)*
9:20a-9:30a		**Opening Remarks and Introduction of Keynote Speaker** The Honorable Jay M. Cohen, Under Secretary, Science and Technology, DHS *(confirmed)*
9:30a-9:50a		**Keynote Speaker** TBA
9:50a-10:10a		**Science & Technology Directorate Keynote** The Honorable Jay M. Cohen, Under Secretary, Science and Technology, DHS *(confirmed)*
10:10a-10:40a		**Networking Coffee Break** *(TBD)*
10:40a-11:00a		**Keynote Speaker** Mr. Erroll G. Southers, Chief of Intelligence and Counter-Terrorism, Los Angeles World Airports Police Department *(confirmed)*
11:00a-11:45p		**S&T Challenges Affecting the States** *(TBD)* **Moderator:** Ms. Linda Vasta , Director, West Coast Operations, Interagency Coordination Office, S&T Directorate, DHS *(confirmed)* **Panelists:** Mr. Matthew Bettenhausen, Executive Director, State of California/Governor's Office of Homeland Security *(confirmed)* Mr. Kerry Sleeper, Commissioner, Vermont Department of Public Safety *(confirmed)* BG Mike McDaniel, Homeland Security Advisor, Michigan Department of Military & Veterans Affairs *(confirmed)* Ms. Annzell Loufas, Director, California Council on S&T *(invited)*
11:45a-12:30p		**S&T Challenges Affecting First Responders** *(TBD)* **Moderator:** Mr. Glenn Cannon, Director, Response Division, FEMA *(confirmed)* **Panelists:** Chief Robert Ingram, Branch Chief for WMD, Fire Department, City of New York *(confirmed)* Mr. James T. Butts, Jr., Deputy Executive Director, Airport Law Enforcement and Protective Services, Los Angeles World Airports *(confirmed)* Mr. John Powell, Chairman, California Statewide Interoperability Executive Committee (CALSIEC) *(invited)* Commander Bob Sedita, County of Los Angeles Sheriff's Department *(confirmed)* Mr. Richard Earland, Chief Information Officer, National Police Improvement Agency, United Kingdom *(confirmed)* Captain Jeff Winn, Commander, Research and Planning, New Orleans Police Department *(invited)*
12:30p-2:00p		**Networking Lunch in Exhibit Hall**

Tuesday ***January 15, 2008***		**2008 Homeland Security S&T Stakeholders Conference West** ***"Putting First Responders First"*** **Day 1 - Afternoon Session**
Time		***Event Title*** *(Location)*

2:00p-4:30p		***"View Exhibits Only"* admission to Exhibit Hall**
2:00p-2:20p		**First Responder Technologies (R-Tech)** Mr. Jose Vasquez, Director, Director, First Responder Technologies , S&T Directorate, DHS *(confirmed)*
2:20p-2:50p		**Secure Against Fires & Embers (SAFE)** TBA
2:50p-3:00p		**Anaheim Enterprise Virtual Operations Center (EVOC)** Mr. Tom Wood, Assistant City Manager/COO, City of Anaheim, California *(confirmed)*
3:00p-3:15p		**Transition Break**
		Science & Technology Breakout Sessions

		S&T Track 1 **Breakout 1**	S&T Track 2 **Breakout 2**	S&T Track 3 **Breakout 3**	S&T Track 4 **Breakout 4**	S&T Track 5 **Breakout 5**	S&T Track 6 **Breakout 6**	S&T Track 7 **Breakout 7**
3:15p-4:00p		**TechSolutions*:* Solutions for First Responders** Mr. Greg Price Director, TechSolutions DHS S&T	***Who you gonna call?*** **The National Guard's First Responder Role** **Moderator:** Col. Michael Smith, USA (Ret.), Senior Advisor, Office Interagency Programs, DHS S&T *(confirmed)* **Panelists:** TBA	**Advanced Technologies for First Responders and Incident Management Teams** Jalal Mapar, Program Manager DHS S&T *(confirmed)*	**California Burning: Lessons Learned**	**Use of Modeling & Simulation for California's Golden Guardian Exercise 07** Michael Mercer Associate Program Manager Systems Solutions Group Lawrence Livermore National Laboratory *(confirmed)* Patrick T. Hammond Sr. Homeland Security Training Professional California Office of Homeland Security *(confirmed)* Sergeant Brian McElhaney Homeland Security Bureau Anaheim Police Department *(confirmed)* Battalion Chief Tim O'Hara Homeland Security Manager Anaheim Fire Department *(confirmed)*	**Innovation at the Edge - Accelerating University and National Lab Research to First/Early Responders** **Moderator:** Tom Kowalczyk, Office of University programs, DHS S&T *(confirmed)* **Panelists:** Dr. William Pottenger Research Professor Rutgers University *(confirmed)* Dr. Richard May Chief Scientist Visual Analytics PNNL *(confirmed)* Ms. Carol Maresca Deputy Superintendent of Police/ Deputy Director Public Safety Department, NY&NJ Port Authority *(confirmed)* Mr. Gerard Lorden Morgan Stanley *(confirmed)*	**Managing the cultural change when a common operational picture platform is implemented** Mr. Wayne Tolosa President and CEO Future Concepts I.S., Inc.
4:00p-4:15p		**Transition Break**						

		S&T Track 1 **Breakout 8**	S&T Track 2 **Breakout 9**	S&T Track 3 **Breakout 10**	S&T Track 4 **Breakout 11**	S&T Track 5 **Breakout 12**	S&T Track 6 **Breakout 13**	S&T Track 7 **Breakout 14**
4:15p-5:00p		**FirstResponder.gov**	**Critical Infrastructure Inspection Management System (CIIMS) Working in Maryland** **Moderator:** Herb Engle, Program Manager, DHS S&T *(confirmed)* **Panelists:** LT. Mark Gibbons, Maryland State Police *(confirmed)* Sgt. Chad Gainey, Maryland State Police *(confirmed)* Mr. Dan Rice Aviation Command Maryland State Police Mr. Mark Gabriele Applied Physics Laboratory Johns Hopkins University *(confirmed)*	**IED 101** LAPD Bomb Squad	**Katrina: Law Enforcement Lessons Learned** Captain Jeff Winn Commander, Research and Planning New Orleans Police Department *(confirmed)*	**Northwest Regional Technology Center for Homeland Security: A Model for Connecting State and Local Needs and DHS S&T's Research Agenda** Steve Stein, Director NW Regional Technology Center for Homeland Security Pacific Northwest National Labs *(confirmed)* Mary E Peterson Pacific Northwest National Labs *(confirmed)* Ann M Lesperance Pacific Northwest National Labs *(confirmed)*	**Anaheim Enterprise Virtual Operations Center (EVOC)** Mr. Tom Wood, Assistant City Manager/COO, City of Anaheim, California *(confirmed)*	*International A:* **Lessons Learned from Israel** Major General Doron Almog Executive Chairman, Athlone Global Security *(confirmed)*
4:30p		**"*View Exhibits Only*" admission to Exhibit Hall ends**						
5:00p-7:00p		**"Fire Fighters Salute" Reception in Exhibit Hall**						
7:00p		**Exhibit Hall Closes**						

Wednesday, January 16, 2008		**2008 Homeland Security S&T Stakeholders Conference West** ***"Putting First Responders First"*** **Day 2 - Morning Session**
Time		***Event Title*** *(Location)*
8:00a-5:00p		**On-Site Conference Registration & Information**
8:00a-9:00a		**Continental Breakfast** *(TBD)*
9:00a-6:00p		**Exhibit Hall Open**
9:00a-4:00p		**"*View Exhibits Only*" admission to Exhibit Hall**
9:00a-4:00p *(In parallel with other activities)*		**Innovation Gateway Marketplace Networking** *(By appointment only – abstract submittal in advance required)* **SAFETY Act Pre-Application Consulting** *(By appointment only in SAFETY Act Booth)*

9:00a-9:15a		**Host Remarks**
9:15a-9:25a		**The DHS Science & Technology Directorate** The Honorable Jay M. Cohen, Under Secretary, Science and Technology, DHS *(confirmed)*
9:25a-10:25a		**S&T Directorate Division Heads Panel** Mr. Jim Tuttle, Explosives Division *(confirmed)* Dr. Beth George, Chemical & Biological Division (*Acting) (confirmed)* Dr. David Boyd, Command, Control & Interoperability Division *(confirmed)* CAPT David Newton, USCG, Borders & Maritime Security Division (*Acting) (confirmed)* Dr. Sharla Rausch, Human Factors Division *(confirmed)* Mr. Christopher Doyle, Infrastructure & Geophysical Division *(confirmed)*
10:25a-10:40a		**T&E and Standards** Mr. George Ryan, Director, Test & Evaluation and Standards, S&T Directorate, DHS *(confirmed)*
10:40-11:10a		**Networking Coffee Break** *(Exhibit Hall)*
11:10a-12:10p		**S&T Portfolio Directors Panel** Mr. Robert Hooks, Director of Transition *(confirmed)* Dr. Roger McGinnis, Director of Innovation / HSARPA *(confirmed)* Dr. Starnes Walker, Director of Research *(confirmed)*
12:10p-12:20p		**Basic Research to Enable a Safer Nation** Mr. Bryan Roberts, Program Manager and Economist, University Programs, S&T Directorate, DHS *(confirmed)* Mr. James Johnson, Director, Office of National Laboratories, S&T Directorate, DHS *(confirmed)*
12:20p-12:30p		**Los Angeles Regional Common Operational Picture Program (LARCOPP)** TBA
12:30p-2:00p		***Networking Lunch in Exhibit Hall***

Wednesday January 16, 2008		**2008 Homeland Security S&T Stakeholders Conference West** ***"Putting First Responders First"*** **Day 2 - Afternoon Session**
Time		***Event Title*** *(Location)*
2:00p-4:30p		***"View Exhibits Only"*** **admission to Exhibit Hall**
		Science & Technology Breakout Sessions

		S&T Track 1 **Breakout 15** **Chemical and Biological Division A**	**S&T Track 2** **Breakout 16** **Borders and Maritime Security Division**	**S&T Track 3** **Breakout 17** *Explosives Division A* **Explosives Division: Counter-IED Program and the First Responder** Mr. Jim Tuttle, Head Explosives Division, S&T Directorate, DHS *(confirmed)* Joe Foster Program Manager Explosives Division S&T Directorate, DHS *(confirmed)* Kelly Bray Explosives Division S&T Directorate, DHS *(confirmed)*	**S&T Track 4** **Breakout 18** **IPT Process: Methods and Results** Mr. Bob Hooks Director of Transition, S&T Directorate *(confirmed)*	**S&T Track 5** **Breakout 19** *University Programs A:* **TBA**	**S&T Track 6** **Breakout 20** **S&T Pilot Programs in California: A User Perspective** Lawrence Livermore National Laboratory	**S&T Track 7** **Breakout 21** *International B:* **Sweden** **RAKEL** **Sweden's new shared digital radio communication system for emergency management** Mr. Stefan Kvarnerås, Swedish Emergency Management Agency *(confirmed)* Mr. Anders Åkeson SAAB, EADS and Eltel Consortium *(confirmed)*
2:00-2:45 p.m.								
2:45-3:00 p.m.		**Transition Break**						
		S&T Track 1 **Breakout 22** **Chemical and Biological Division B**	**S&T Track 2** **Breakout 23** **Mission and Goals of the Human Factors Division: Social-Behavioral Threat Analysis** Allison Smith Program Lead for Radicalization Research HFD, DHS S&T *(confirmed)* Mike Dunaway Program Manager Community Preparedness and Resilience Projects HFD, DHS S&T *(confirmed)*	**S&T Track 3** **Breakout 24** *Explosives Division B* **Response/Render Safe—Developing Future Requirements for the First Responder** Mr. Jim Tuttle, Head Explosives Division, S&T Directorate, DHS *(confirmed)* Mr. Joe Foster Program Manager Explosives Division S&T Directorate, DHS *(confirmed)* Kelly Bray Explosives Division S&T Directorate, DHS *(confirmed)*	**S&T Track 4** **Breakout 25** **Special Programs** Mr. Spanky Kirsch, Director, Special Programs, DHS S&T *(confirmed)*	**S&T Track 5** **Breakout 26** *University Programs B:* **TBA**	**S&T Track 6** **Breakout 27** *S&T Laboratories A:* **Environmental Measurements Laboratory Support to State & Local First Responders** Dr. Adam Hutter, Director, EML *(confirmed)* Mr. Lawrence Ruth, Director, Systems Division (acting), EML *(confirmed)*	**S&T Track 7** **Breakout 28** *International C:* **United Kingdom** **National Police Improvement Agency** Mr. Richard Earland Chief Information Officer National Police Improvement Agency *(confirmed)*
3:00-3:45 p.m.								
3:45-4:00 p.m.		**Transition Break**						

		S&T Track 1 **Breakout 29**	S&T Track 2 **Breakout 30**	S&T Track 3 **Breakout 31**	S&T Track 4 **Breakout 32**	S&T Track 5 **Breakout 33**	S&T Track 6 **Breakout 34**	S&T Track 7 **Breakout 35**
4:00-4:45 p.m.		**Command, Control & Interoperability Division** **RDT&E for Emergency Responders.** **Moderator:** Mr. Luke Klein-Berndt Chief Technology Officer Command, Control and Interoperability Division, DHS S&T *(confirmed)* **Panelists:** Chief Charles Werner, Charlottesville, VA Fire Department Mr. Dereck Orr Program Manager for Public Safety Communication Standards Office of Law Enforcement Standards National Institute of Standards and Technology Dr. Carolyn Ford, Institute for Telecommunication Sciences, National Telecommunications and Information Administration	**Mission and Goals of the Human Factors Division: Human-Systems Research and Engineering** Chris Miles Biometrics Program Manager HFD, DHS S&T *(confirmed)* Darren Wilson Human Systems Research and Engineering Program Manager HFD, DHS S&T *(confirmed)*	**Infrastructure and Geophysical Division** Mr. Christopher Doyle, Head Infrastructure & Geophysical Division *(confirmed)* Jalal Mapar, Program Manager DHS S&T *(confirmed)*	**1401 Technology Transfer Process** Mr. Bob Hooks Director of Transition, S&T Directorate *(confirmed)*	**Technology Clearing House** Mr. Jose Vazquez, Director Rapid Technology Insertion, DHS S&T *(confirmed)* Ms. Sonja Rodriguez, Director, Tech Clearinghouse, DHS S&T *(confirmed)*	*S &T Laboratories B:* **The Transportation Security Laboratory** Dr. Susan Hallowell Director, TSL *(confirmed)*	**HIPS & HITS** **The 10% Solution: High Risk, Hugh Payoffs** Rolf Dietrich. P.E. Director, Homeworks DHS S&T *(confirmed)*
4:00p		***"View Exhibits Only"* admission to Exhibit Hall ends**						
5:00p-7:00p		**"Emergency Management and Medical Services Salute" Reception in Exhibit Hall**						
7:00p		**Exhibit Hall Closes**						

Thursday January 17, 2008		**2008 Homeland Security S&T Stakeholders Conference West** ***"Putting First Responders First"*** **Day 3 - Morning Session**
Time		***Event Title*** *(Location)*
8:00a-12:00p		**On-Site Conference Registration & Information**
8:00a-9:00a		**Continental Breakfast** *(TBD)*
9:00a-9:05a		**Host Welcome & Introduction** *(TBD)*
9:05a-9:30a		**TBA**

9:30a-11:00a		**International Perspectives on S&T Research for Homeland Security** *(TBD)* M**oderators:** Mr. Gary Jensen, Director, Asia-Pacific Liaison, International Programs Office, DHS S&T Directorate *(confirmed)* Mr. Matthew Bettenhausen, Executive Director, State of California/Governor's Office of Homeland Security *(confirmed)* **Panelists:** **Australia:** *TBA* **Canada:** Chief Superintendent Bud Mercer, Deputy Criminal Operations Officer, Federal Policing Services, Royal Canadian Mounted Police *(invited)* **Israel:** Mr. Assaf Heffetz, former Commissioner of the Israel National Police *(invited)* Major General Doron Almog, Executive Chairman, Athlone Global Security *(invited)* **Sweden:** Mr. Ivar Rönnbäck, Deputy Director-General, Swedish Rescue Services Agency *(confirmed)* **United Kingdom:** Mr. Richard Earland, Chief Information Officer, National Police Improvement Agency, United Kingdom *(confirmed)*
11:00a-11:30a		**Networking Coffee Break** *(TBD)*
11:30a-12:30p		**Interagency Partnerships in S&T Research for Homeland Security** *(TBD)* **Moderator:** Mr. Randy Zeller, Director, Interagency Coordination, S&T Directorate, DHS *(confirmed)* **Panelists:** CAPT Paul Wiedenhoeft, USCG, Sector Commander/Captain of the Port, U.S. Coast Guard Sector Los Angeles - Long Beach *(confirmed)* Mr. Mark Denari, Director, Aviation Security & Public Safety, San Diego County Regional Airport Authority *(confirmed)* Mr. Daniel Hartwig, Manager of Security Programs, Bay Area Rapid Transit (BART), San Francisco *(invited)* TBA
12:30a-1:00p		**Closing Remarks & Recognition** *(TBD)* The Honorable Jay M. Cohen, Under Secretary for Science and Technology, DHS *(confirmed)*
1:00 p.m.		**Conference Sessions End**
1:00p-2:00p		**Post-Conference No-Host networking lunch in Convention Center Food Court** *(TBD)*

Thursday January 17, 2008		**Post-Conference Training Workshop**
1:00p -6:00p		**Training Sessions** ("LES" = Law Enforcement Sensitive - separate registration required)
1:00p-2:45p		**IED Training for First Responders** (LES) Transportation Security Laboratory
2:45p-3:00p		**Break**
3:00p-3:45p		**IED Training for First Responders** (LES) Transportation Security Laboratory
3:45p-4:00p		**Break**
4:00p-4:45p		**IED Training for First Responders** (LES) Transportation Security Laboratory

4:45p-5:00p		**Break**
5:00p-6:00p		**IED Training for First Responders** (LES) Transportation Security Laboratory
6:00 p.m.		**Post-Conference Training Workshop Sessions End**

DHS University Programs:
Research, Education & Integration

From Science and Technology… Security and Trust

Homeland Security

University Programs

- Centers of Excellence
- Education Programs
- Minority Serving Institutions Programs
- Integration

Homeland Security

Centers of Excellence

- Original Research
- Aligned with S&T Divisions and Missions
- Taking Advantage of Universities' Capabilities
- From basic to applied research
- Full DHS spectrum from terrorist group formation to disaster recovery

Homeland Security

Centers of Excellence

- Center for Risk & Economic Analysis of Terrorism Events (CREATE)

  Based at the University of Southern California

- National Center for Food Protection & Defense (NCFPD)

  Based at the University of Minnesota

- National Center for Foreign Animal & Zoonotic Disease Defense (FAZD)

  Based at Texas A&M University

- National Consortium for the Study of Terrorism & Responses to Terrorism (START)

  Based at the University of Maryland

- National Center for Preparedness & Catastrophic Event Response (PACER)

  Based at Johns Hopkins University

Homeland Security

Centers of Excellence, cont.

- Center for Advancing Microbial Risk Assessment (CAMRA)
  Based at Michigan State University, in Partnership with U.S. EPA

- Discrete Science Centers (IDS-UACs)
  In Cooperation with the Institute Discrete Sciences, based Lawrence Livermore National Laboratory
  Rutgers University (Lead Center), University of Southern California,
  University of Illinois at Urbana-Champaign, University of Pittsburgh

- Regional Visualization & Analytics Centers (RVACs)
  In Partnership with National VAC at Pacific Northwest National Laboratory:
  Penn State University, Purdue University, Stanford University,
  University of North Carolina at Charlotte, University of Washington

Homeland Security

Realignment of Existing Centers to S&T Divisions

1. <u>Chemical/Biological</u>: Food, Agriculture, Microbial and Chemical Defense

a. National Center for Food Protection & Defense (NCFPD)
b. National Center for Foreign Animal & Zoonotic Disease Defense (FAZD)
c. Center for Advancing Microbial Risk Assessment (CAMRA)
Consolidated New Center in 2010

2. <u>Command, Control & Interoperability</u>: Information Analysis and Visualization

a. University Affiliate Centers to the Institute for Discrete Sciences (IDS-UACs)
b. Regional Visualization & Analytics Center (RVACs)
Consolidated New Center By End of Calendar Year 2008

3. <u>Human Factors</u>: Social, Behavioral and Economic Sciences

National Consortium for the Study of Terrorism & Responses to Terrorism (START)

4. <u>Infrastructure/Geophysical</u>: Emergency Preparedness and Response

National Center for Preparedness & Catastrophic Event Response (PACER)

5. <u>Operations & Analysis</u>: Risk, Economics and Intelligence Assessments

Center for Risk & Economic Analysis of Terrorism Events (CREATE)
Linked to the Homeland Security Institute (HSI)

Homeland Security

New Centers Beginning in FY 2008

COE for Explosives Detection, Mitigation and Response

COE for Border Security and Immigration

- *** Northern Forest Borders**
- *** Southwest Desert Borders**

COE for Maritime, Island & Remote/Extreme Environment Security

COE for Natural Disasters, Coastal Infrastructure and Emergency Management

COE for Transportation Security

Homeland Security

Alignment of New Centers

6. Explosives: Explosives Detection and Countermeasures
National Center for Explosives Detection, Mitigation & Response, National Transportation Security COE

7. Borders/Maritime: Border Security and Immigration
National Center for Border Security & Immigration –

* Northern Forest Borders
* Southwest Desert Borders

8. Borders/Maritime: Maritime, Island and Remote/Extreme Environments
National Center for Maritime, Island & Remote/Extreme Environment Security, National Transportation Security COE (Port and Cargo) Security

9. Infrastructure/Geophysical: Natural Disasters and Coasts
National Center for Natural Disasters, Coastal Infrastructure & Emergency Management, National Transportation Security COE

Homeland Security

COE Alignment

S&T DIVISIONS

Explosives	Chemical/Biological	Command, Control & Interoperability	Borders/Maritime	Human Factors	Infrastructure/ Geophysical
COE for Explosives Detection, Mitigation & Response	National Center for Food Protection and Defense — A Homeland Security Center of Excellence	**IDS-UACs**	***COE for Border Security & Immigration***	START	PACER — A Homeland Security Center of Excellence
COE for Transportation Security	FAZD Center — National Center for Foreign Animal and Zoonotic Disease Defense	**RVACs**	***COE for Maritime, Island & Remote/Extreme Environment Security***		***COE for Natural Disasters, Coastal Infrastructure & Emergency Management***
	CAMRA — Center for Advancing Microbial Risk Assessment	***Consolidated CCI Center***			***COE for Transportation Security***
	Consolidated Chem/Bio Center				

Operations & Analysis

Risk Sciences Branch & HSI Risk Determination

Homeland Security

CREATE Homeland Security Center

Research Area Alignment

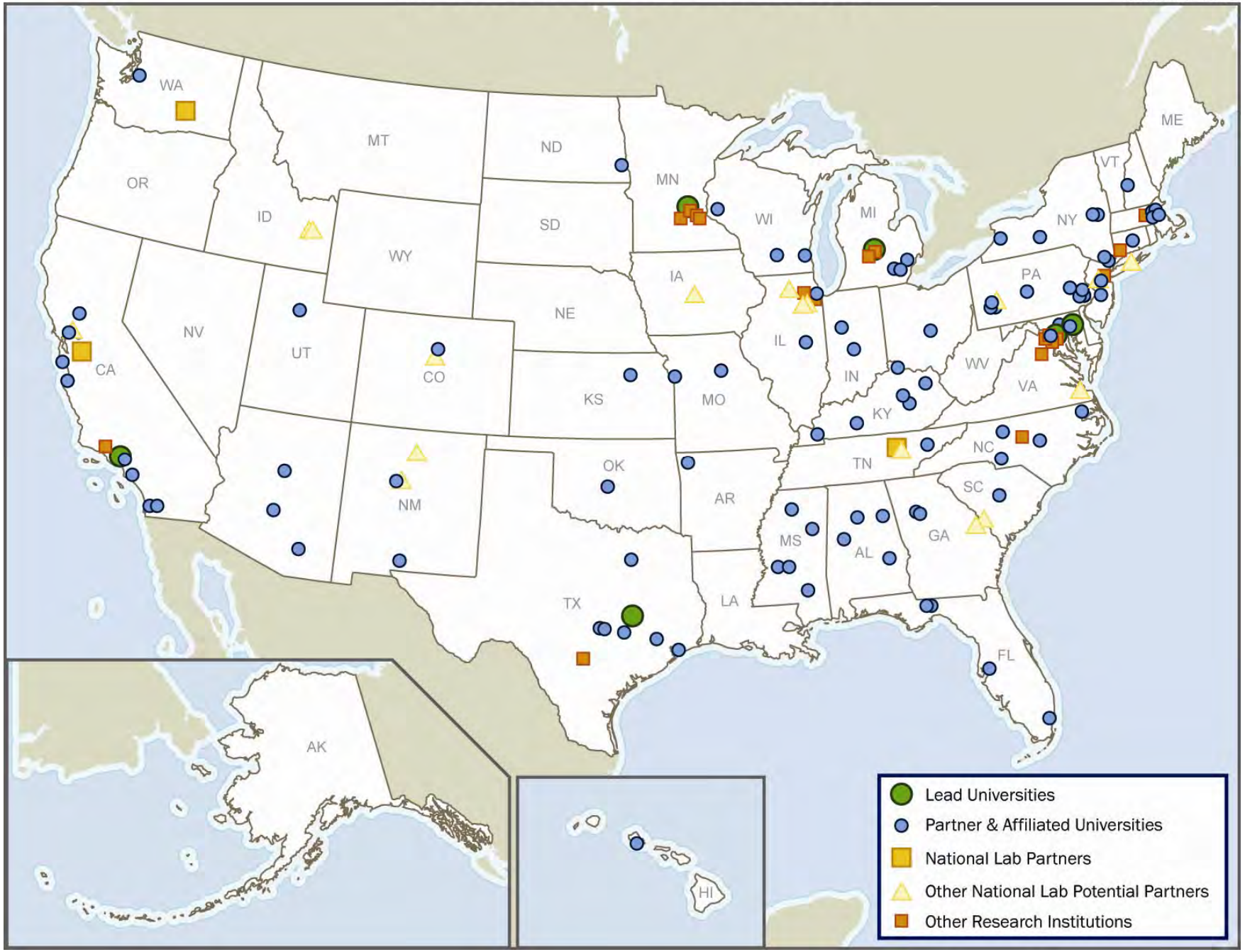
S&T DIVISIONS					
Explosives	**Chemical/Biological**	**Command, Control & Interoperability**	**Borders/Maritime**	**Human Factors**	**Infrastructure/ Geophysical**
Explosives Detection, Mitigation and Response Transportation Security	Chemical Threats and Countermeasures Food and Agriculture Security; Biological Threats and Countermeasures	Communications and Interoperability Advanced Data Analysis and Visualization *Cyber Security*	Border Security Immigration Studies Maritime and Port Security Transportation Security	Social, Behavioral, and Economic Sciences Human Factors Aspects of Technology	Infrastructure Protection Natural Disasters & Geophysical Studies Emergency Preparedness and Response Transportation Security

Risk and Decision Sciences

Homeland Security

THE DHS UNIVERSITY NETWORK

November 2006



Activities & Accomplishments: CREATE

- **Incident Commander/FireScope** helps train incident commanders for a large-scale urban disaster by providing extensive training and tactics without taking fire fighters off duty. *Users: Los Angeles Fire Department*

- **Risk-Based Resource Allocation Models.** Model to randomize patrols to foil terrorists and thieves, deployed at Ports of Los Angeles and Long Beach.

- **Terrorist Attack Prediction Tools** provide tabletop and war-gaming exercises with terrorism experts, intelligence analysts, risk assessment experts and economists leading to serious simulation games of high-risk terrorist attack scenarios.

Activities & Accomplishments: NCFPD

- **Rapid response analysis assessing food ingredients and products from China,** in response to the contamination of animal/pet feed. Study scope extended and expanded to include detailed analysis of the foods that are most restricted in terms of available substitutes.

- **Consequence Modeling System: Modeling of food system contamination events** for vulnerability assessment, intervention/countermeasure evaluation and awareness. CMS has been expanded to support the NBACC 2008 bioterrorism risk assessment and the FDA/USDA food contamination event models.

- **Sensor for rapid detection of chemicals and toxins**, showing promise as a rapid screen for ricin in complex foods, e.g., fruit juice. This would provide a means of in-plant screening for potential intentional contamination.

Homeland Security

Activities & Accomplishments: FAZD

- **Vaccines for Zoonotic Diseases** of economic and public health import, such as Rift Valley Fever (RVF) and Avian Influenza (AI) using modern recombinant technologies to incorporate genetic "markers" into RVF and AI vaccines. These are making it possible to distinguish vaccinated livestock from infected livestock.

- **Rapid Detection Tests** of Foot and Mouth Disease (FMD) to enable an emergency response program to eradicate the disease without massive culling of infected or exposed herds. These are rapid, accurate, inexpensive field tests that will distinguish between infected and uninfected animals at chute site within minutes.

- **Avian Flu Training for Early Responders Training** will avoid delayed detection and ineffective reactions. Flu School trains the trainers and provides training modules for use by extension agents, veterinarians, researchers and farmers. Sessions have been held in Texas, California, Minnesota, and in Africa, and are increasing in demand throughout the developing world.

Homeland Security

Activities & Accomplishments: START

- **Global Terrorism Database:** In May 2007, launch of Web interface, accessible to the public, for reviewing detailed information on approximately 85,000 domestic and international terrorist incidents since 1970. This will include the release of data files on all cases to the government homeland-security community.
- **Terrorism and Ethnic Political Violence:** This project completed collection data from 1980-2004 on 112 organizations that represent the interests of ethnic minorities in the Middle East. There has been rapid growth in the number of ethnic organizations in the Middle East, but the percentage of groups that use violence or terrorism has steadily declined with more reliance on electoral politics.
- **National Preparedness Survey:** A state-of-the-art survey examining public risk perception, beliefs about terrorism, and preparedness behavior. Interviews with over 3,300 respondents (including over-sampling in New York, Los Angeles, and Washington D.C.) to be completed in May 2007.

Homeland Security

Activities & Accomplishments: PACER

- **Agent-based model** of behavioral and economic responses to bioterrorism. This model utilizes innovative methods that can take into account real-world dynamics, such as poor information, irrational behavior, panic, and abruptly changing spatial patterns.

- **Models of critical factors** that influence decision-making in crises. These models will identify areas for improvement in real time for all levels of response planners and managers.

- **Wireless sensor network** for target recognition for critical event response. This technology will integrate information from multiple sources – wireless sensor networks with sensors, remote cameras and magnetometers - to provide decision makers with useful real time data in a catastrophic event.

Homeland Security

Activities & Accomplishments: CAMRA

- **Better models of the transport of pathogens in drinking water** distribution systems, verified through experimental tests at the University of Arizona Water Village.

- **Discovered determinant of infectivity of environmental contaminations,** associated with pre-existing immunity when exposed to environmental contamination.

- **Rapid risk assessment of recent passenger tuberculosis incident** modeled air movement in planes; placed boundary estimates on risks to passengers and general public

- **First framework for addressing epidemic risks from bioterrorist use of pathogens.** This promises to clarify how the extent of contamination and the number of cases generated translates into the probability and severity of epidemics.

Homeland Security

Activities & Accomplishments: Discrete Science Centers

- **Information extraction system** that can process ProMed-mail text articles about infectious disease outbreaks around the world and identify the diseases and victims being reported. This includes creation of a data set of 245 articles and answer keys, and new methods to create the information extraction system with minimal training.
- **WEB-based system that associates keyword(s) to geospatial datasets** such as maps, satellite and aerial imagery. This enables a user to input a keyword for which the system returns all related maps and images.
- **External Memory Algorithms** cluster is allowing researchers to develop and test fundamental algorithms for visualizing large graphs connecting entities of interest (such as people, organizations, places, events, documents, etc.) and rapidly identifying patterns in graphs that are too large to fit within a computer's main memory.

Activities & Accomplishments: RVACS

- **GeoDiscoverer:** a Raytheon-funded extension of Northeast VAC-developed tools for geographic contextualization of documents. Search engine integrates social networks with geospatial information, and focuses on identifying and mapping social networks represented in texts.
- **Pacific Rim RVAC has collaborated to integrate the tsunami simulation tools** with NEVAC visual situation monitoring and surveillance tools.
- **NEVAC implemented the FactXtractor that extracts entities, locations, concepts and times from text**. FactXtractor was used to create FEMARepViz, a tool that visualizes the daily situation report updates from FEMA.
- **Southeast RVAC has developed WireVis, a highly interactive visual analytics tool** developed with Bank of America to help detect suspicious activity, as well as possible money laundering among hundreds of thousands of wire transfers per day.

Homeland Security

Education Programs

- Individual Scholarships and Fellowships
- Career Development Grants to Institutions
- Naval Postgraduate School Ph.D. Program in Homeland Security
- AAAS Fellowships at DHS
- Summer Internships
- Post-doc opportunities (FY 2008)
- International Science and Engineering Fair (ISEF)
- Pilots for Middle and High School STEM Education

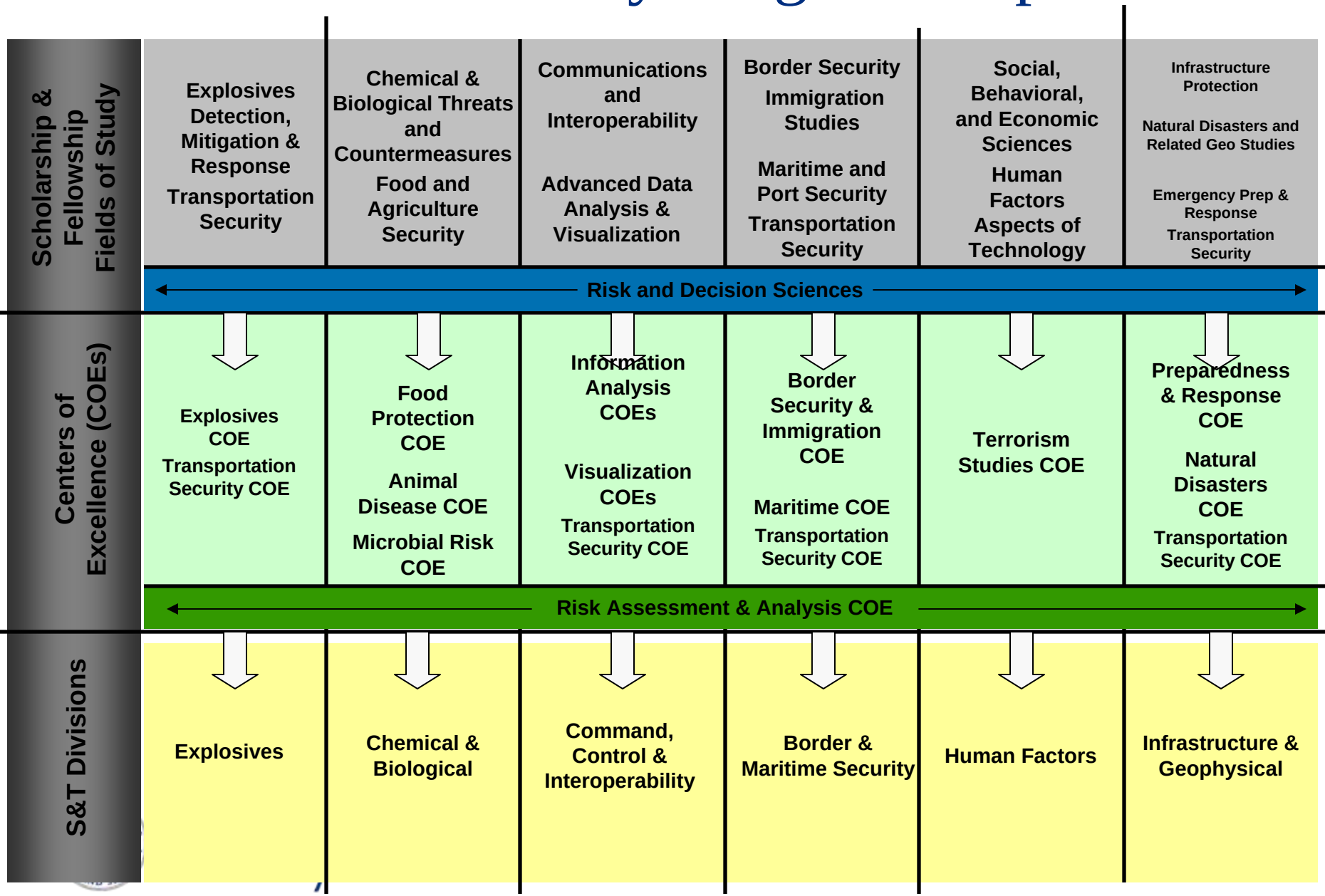
Homeland Security

HS-STEM Education Focus Areas

- Explosives Detection, Mitigation and Response
- Social, Behavioral, and Economic Sciences
- Risk and Decision Sciences
- Human Factors Aspects of Technology
- Chemical Threats and Countermeasures
- Biological Threats and Countermeasures
- Food and Agriculture Security
- Transportation Security
- Border Security
- Immigration Studies
- Maritime and Port Security
- Infrastructure Protection
- Natural Disasters and Related Geophysical Studies
- Emergency Preparedness and Response
- Communications and Interoperability
- Advanced Data Analysis and Visualization
- *Potential: Cyber Security*

Homeland Security

Future University Programs Pipeline



MSI Programs

- Leadership Development Grants
  - Minimum 60% scholarships and fellowships
  - Early career faculty support
  - Homeland Security-STEM curriculum development
- Summer Research Teams at COEs
- Summer Workshop on Teaching about Terrorism (pilot)
- Integration with COEs
- MSI Strategy in Development

Homeland Security

Integration Across the Board

- Multi-COE, Multi-Division, Multi-Disciplinary Projects
  - Target non-stovepipe areas of uncertainty and critical need
- Integrating Education with COEs and Division Focus
- Education linked to DHS CHCO
- Integrating COES with NPS Ph.D. program
- Integrating MSIs into COEs
- Transitioning COE students, scholars and fellows to DHS and Federal labs
- Instituting transition plans for all COE projects

Homeland Security

Homeland Security

Matthew Clark, Ph.D.
Director
Office of University Programs
Science and Technology Directorate
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International Cooperation

- The benefits of collaboration
- And supporting mutually beneficial policy and procedures.

Richard Earland CIO
National Policing Improvement Agency
10 Victoria Street, SW1H 0NN
Richard.earland@npia.pnn.police.uk
44 20 7147 8333

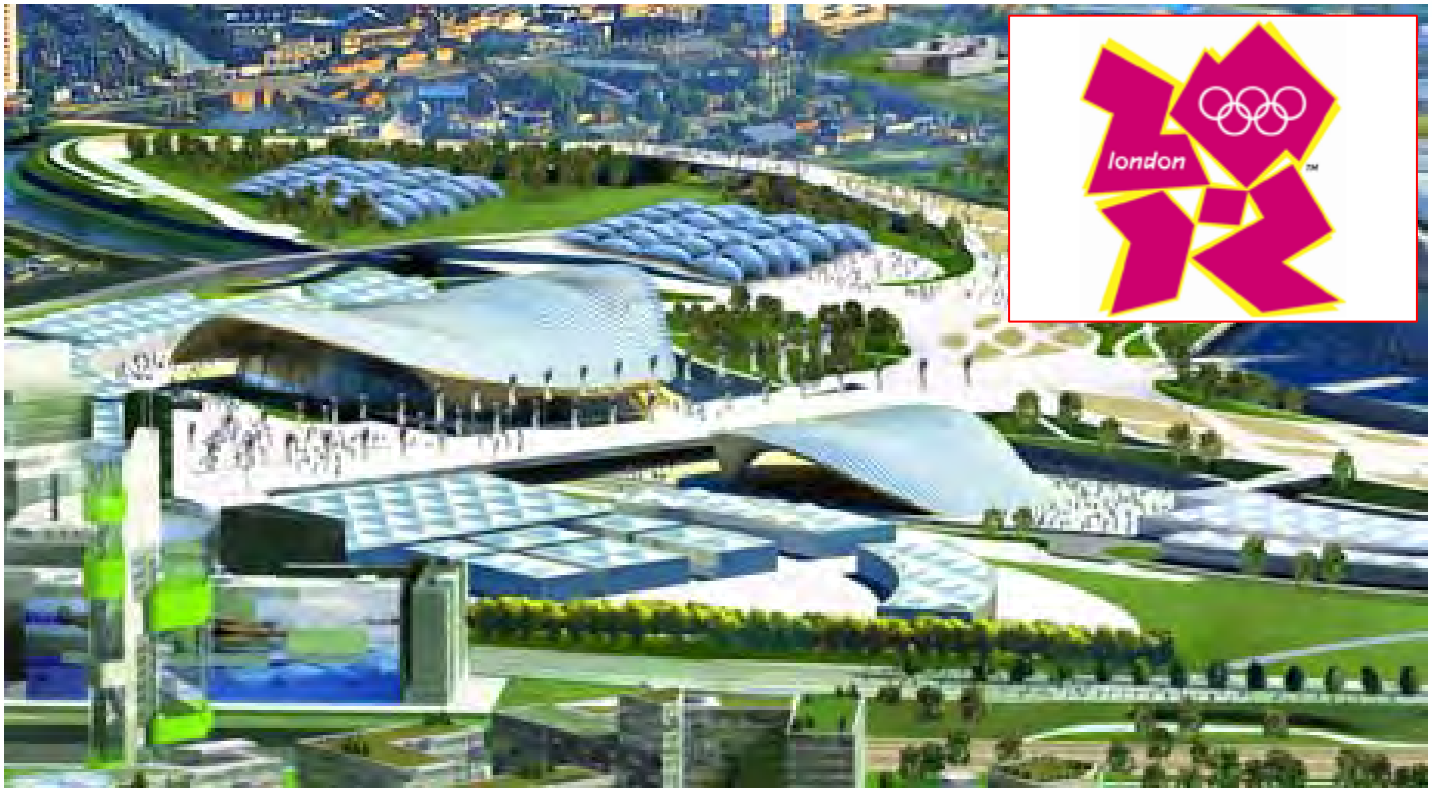
Benefits of Collaboration

- Societal
- Financial
- Political
- Synergistic
- Specific Mission achievement
- Reduced ‘Flash to bang’ time
- Mutually assured protection

Richard A. Meggitt, Strathclyde

Global Events Require Global Cooperation

NPIA
National Policing Improvement Agency



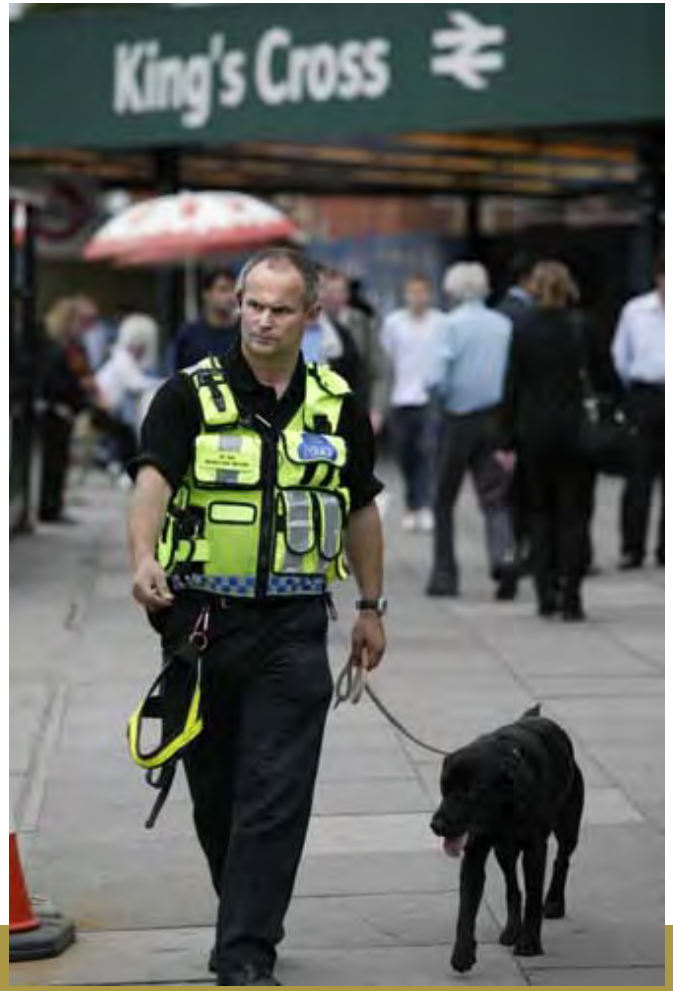
Decisive Condition – multi agency interoperability: supporting a safe, secure and resilient 2012 Olympic Games

Images courtesy of London2012

NPIA
National Policing Improvement Agency

The Terrorist will have passed someone's "Back Door"

Challenges on the Horizon



- Dealing with critical incidents;
- 2012 Olympics;
- Interlink with the wider Criminal Justice System;
- Managing Risks- both day to day and critical incidents;
- Developing a professionalised workforce.

7-7 Key Lessons Learned

- **Communications Resilience**
  - Mobile phone network congested
  - Emergency Services' heavy reliance on mobile phones
  - Underground communications required "special coverage solutions"
- **Compatibility**
  - Inter-Agency communications incompatible
  - Impact of ACCOLC
- **Command and Control**
  - Coordination - multiple scenes
  - Coordination - evacuation
  - Coordination - Casualty Bureau
  - Value of a well exercised command structure

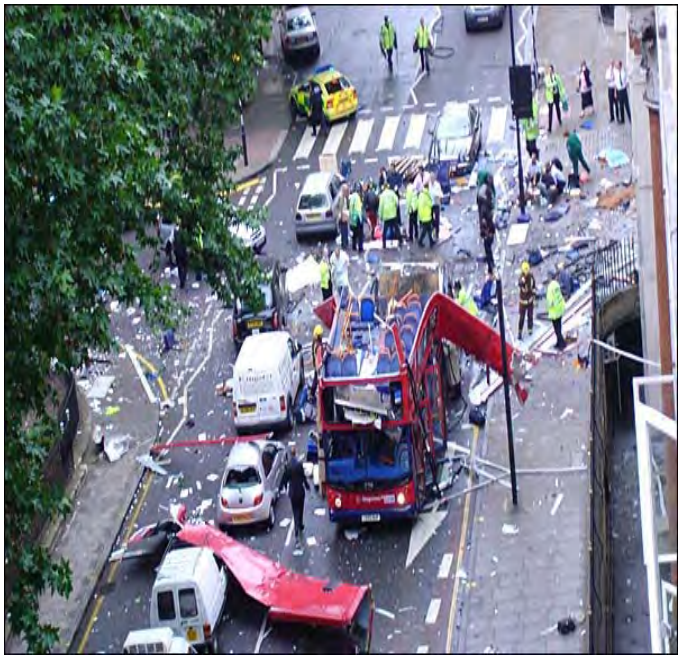


Image courtesy of BBC

Challenges on the Horizon

- Adapting to and effectively tackling new and emerging crime trends- gangs, guns, knife crime; human trafficking; new technology; cross border;
- Managing increased demands within existing resources;
- Balancing local priorities and meeting regional, national and international challenges;

Interoperability

Public expectations of Emergency Services

- **Capacity**
- **Capability**
- **Competence**

to respond effectively to ‘set piece’ incidents.

Key Issues - are Global Issues

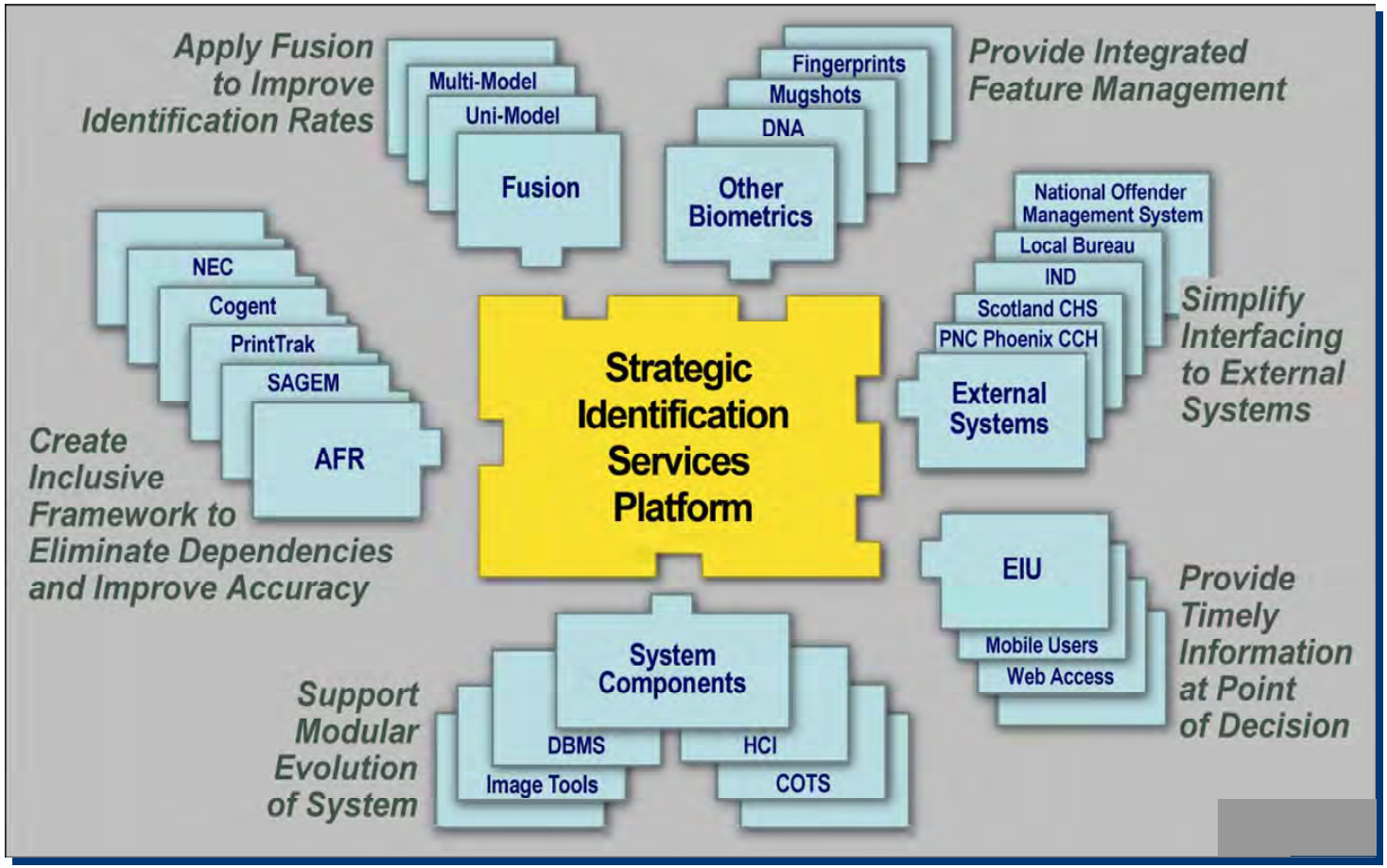
- The need to communicate - Classes of Interoperability
- The need to Identify people ‘on the street’
- The ‘Design’ of work:
  Doctrine, and Leadership in a Global challenge
- Managing in a ‘federated world’
- Both the ‘Kill Chain’ and the ‘supply chain’ span international borders

The UK National Infrastructure

- National DNA Data Base
- National Fingerprint ID System
- National Digital communications Across the ‘blue light’ services
- The ability to manage mutual aid

IDENT1 Strategic Identification Services Platform

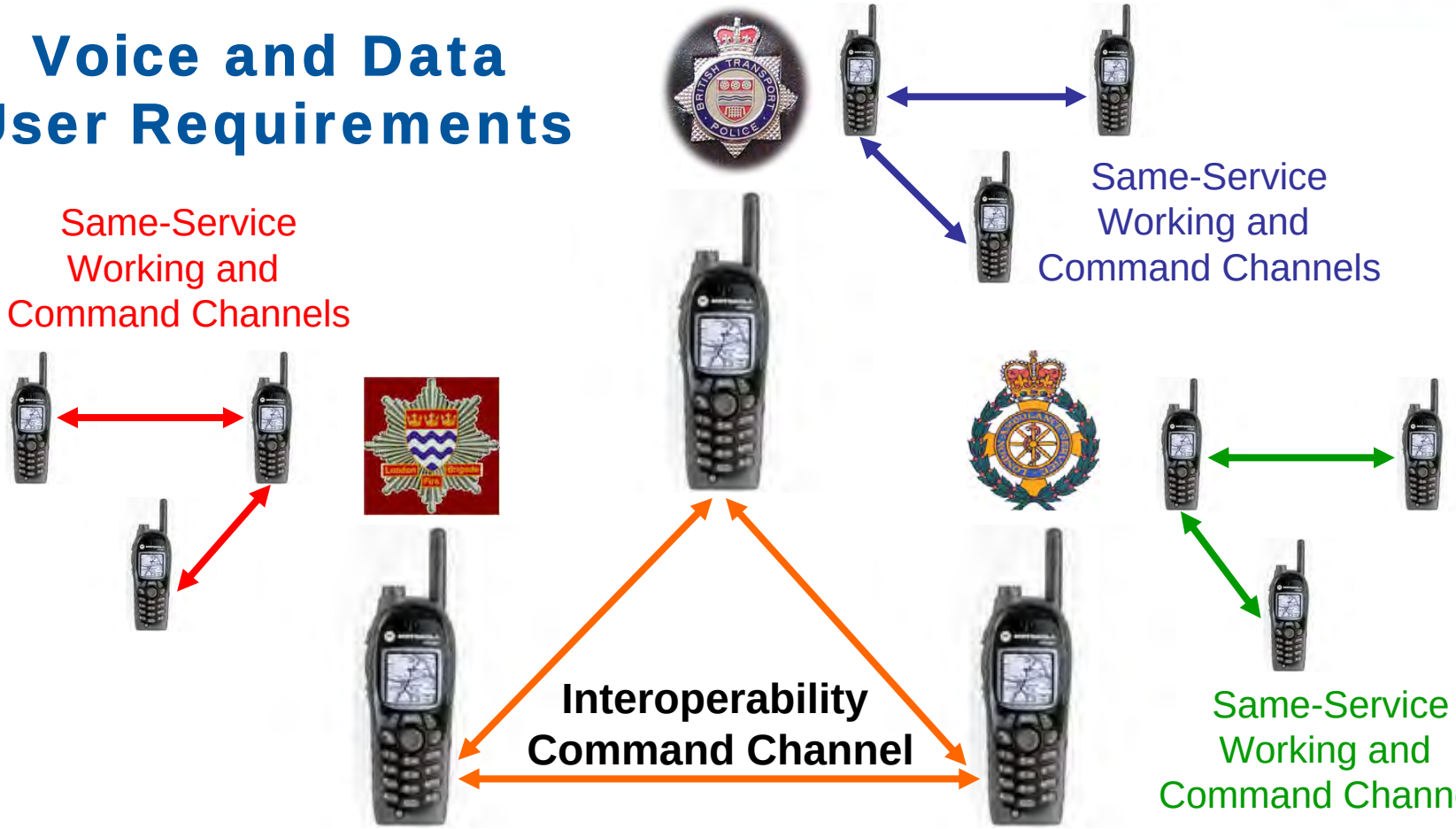
NPIA
National Policing Improvement Agency



"IDENT1 represents the core of a Strategic Identification Services Platform (SISP) for integrated services in support of the larger criminal justice community."

Interoperability - Bronze+

Voice and Data User Requirements



Interoperability – data fusion

- **Mobile broadband**
- **Mobile information**

  Data
  - Building plans
  - Maps
  - GPS location / tracking
  - Biometrics

  Video Streaming
  - CCTV
  - Mobile CCTV
  - Body Cameras

And supporting mutually beneficial policy and procedures

NPIA
National Policing Improvement Agency

The European Approach
A Common Requirements Vision

Interoperability the EU Approach

- Rapid development of CRV
- Places work in the context of societal trends and thus general policing
- Achieves agreement on environmental trends in Law, police and crime
- Both enterprise business and Information requirements are agreed up front
- It provides a touchstone

NPIA
National Policing Improvement Agency

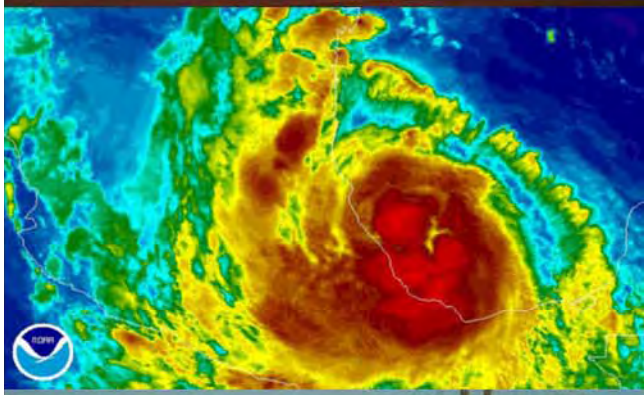
Collaborate to "Serve those who serve"

U.S. Department of Homeland Security

S&T Stakeholders West

Putting First Responders First

Los Angeles • January 14-17, 2008



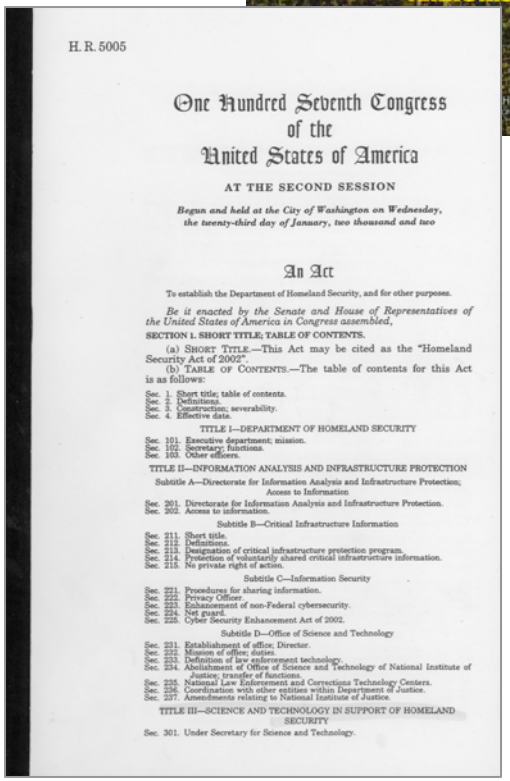
Presented by:

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

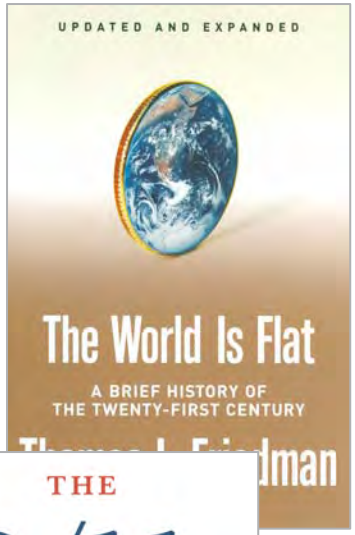
Sec. 221. Procedures for sharing information.
Sec. 222. Privacy Officer.
Sec. 223. Enhancement of non-Federal cybersecurity.
Sec. 224. Net guard.
Sec. 225. Cyber Security Enhancement Act of 2002.

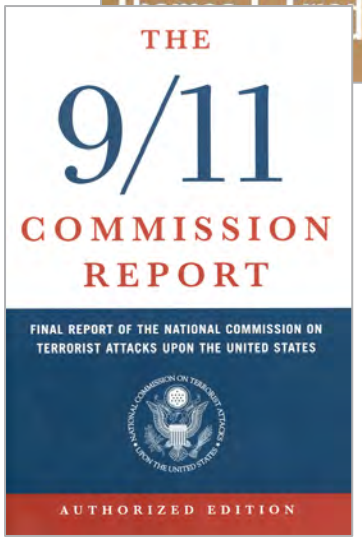
Subtitle D—Office of Science and Technology

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

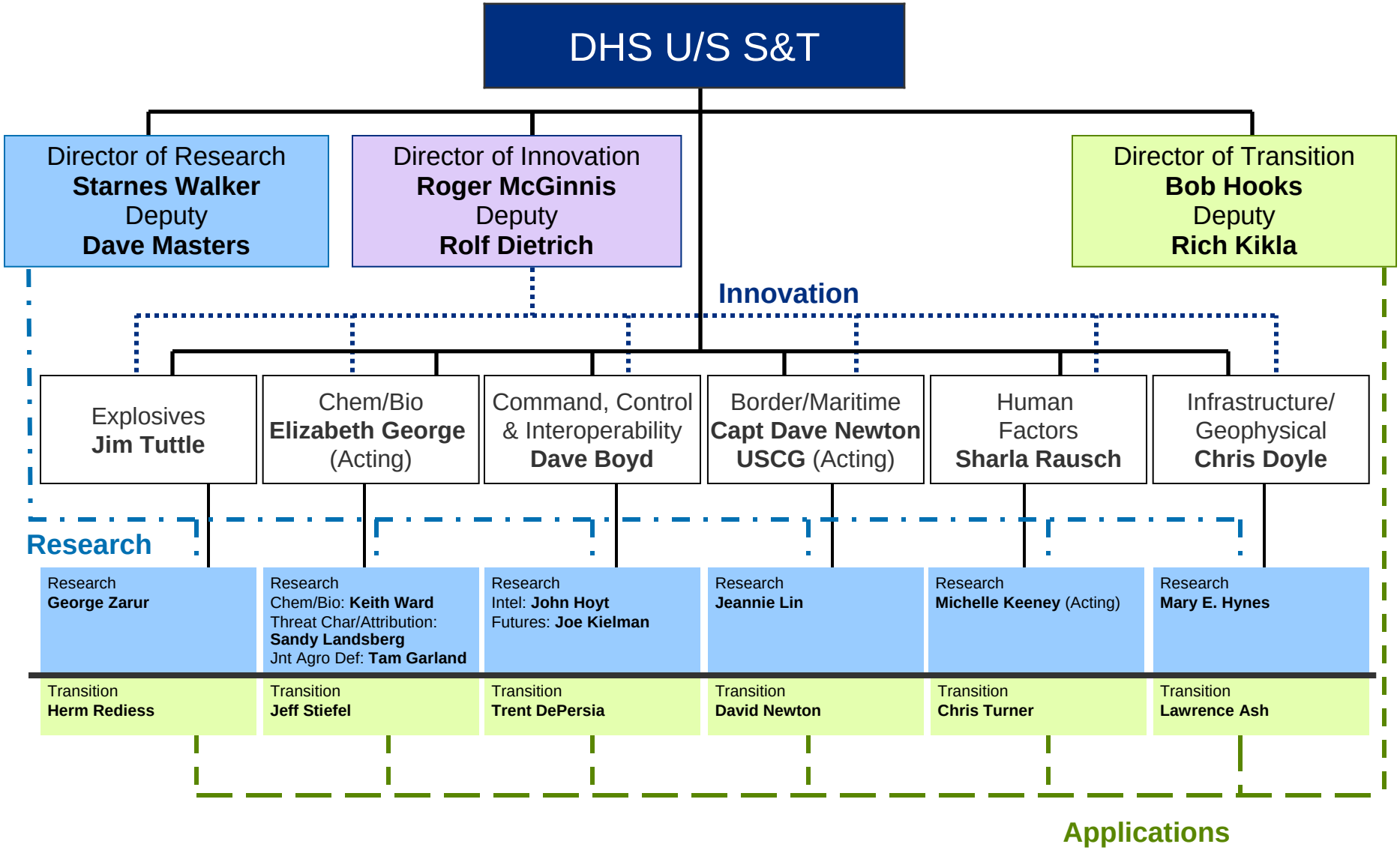
Product Transition (0-3 yrs) ▪ Focused on delivering near-term products/enhancements to acquisition ▪ Customer IPT controlled ▪ Cost, schedule, capability metrics	**Innovative Capabilities (1-5 yrs)** ▪ High-risk/High payoff ▪ "Game changer/Leap ahead" ▪ Prototype, Test and Deploy ▪ HSARPA
Basic Research (>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

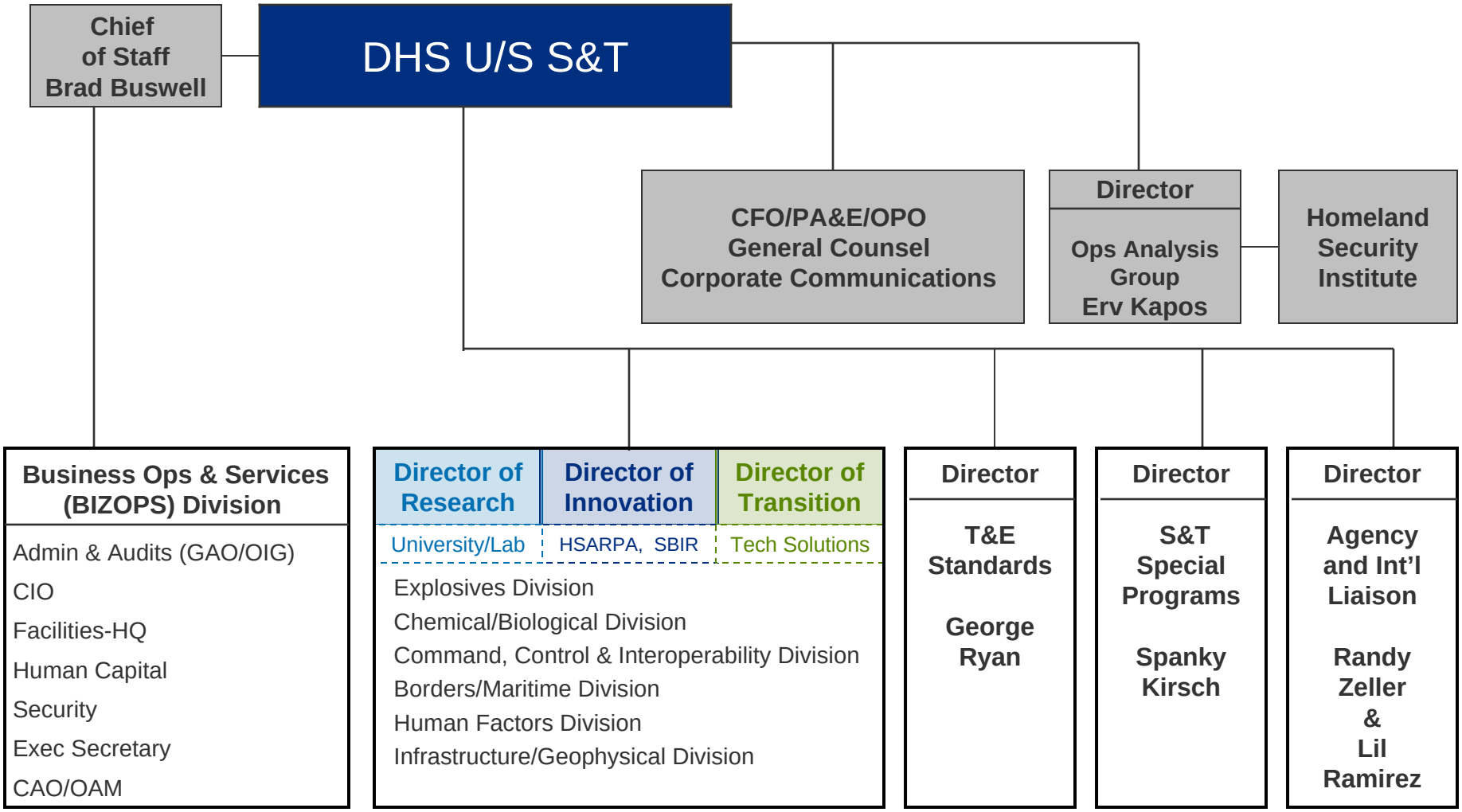
Homeland Security

Bombs – Borders – Bugs – Business

S&T Organization



DHS S&T Directorate

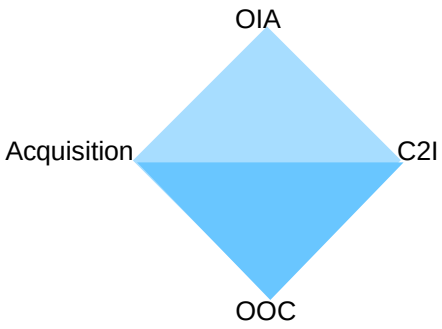


Homeland Security

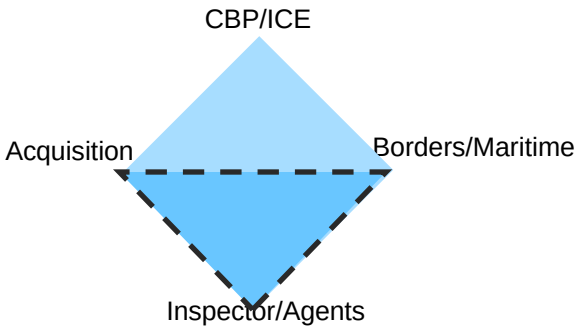
DHS Requirements/Capability Capstone Integrated Product Teams

DHS S&T Product – "Enabling Homeland Capabilities"

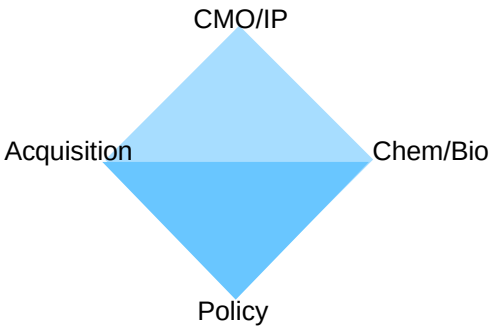
Information Sharing/Mgmt



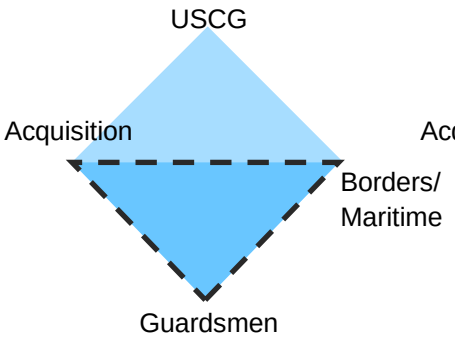
Border Security



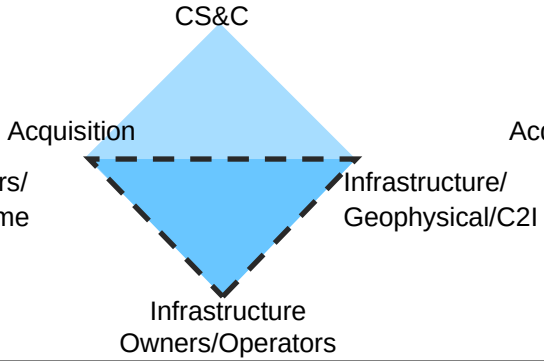
Chem/Bio Defense



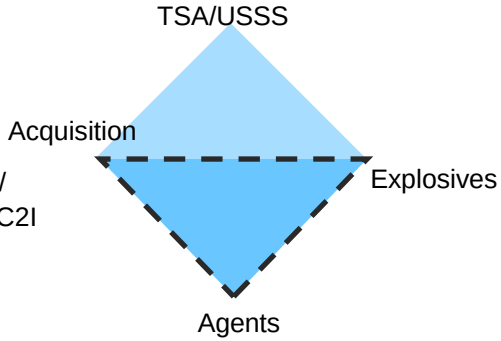
Maritime Security



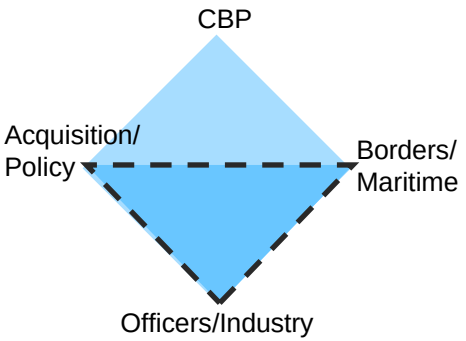
Cyber Security



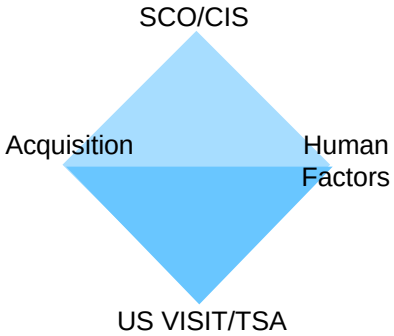
Explosive Prevention



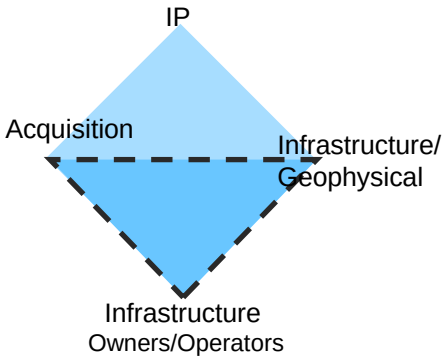
Cargo Security



People Screening

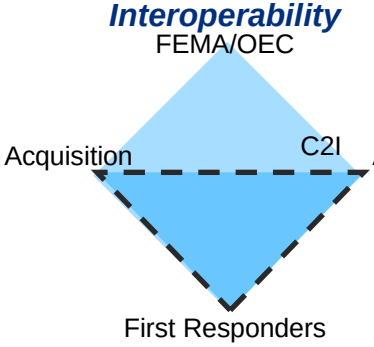


Infrastructure Protection

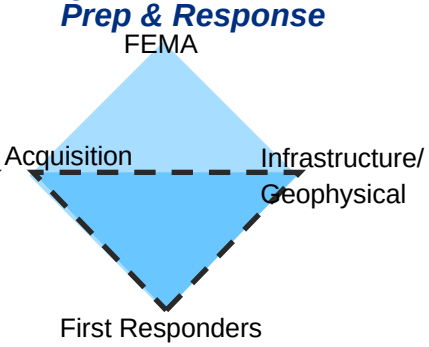


Incident Management

Interoperability



Prep & Response



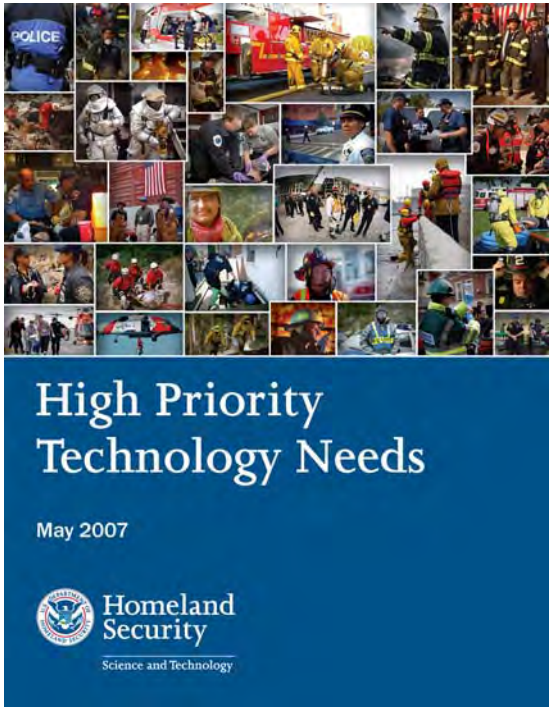
Integrated Product Team (IPT) Initial Outcome

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)

High Impact Technology Solutions (HITS)

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

RESILIENT TUNNEL

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

REG

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

TUNNEL DETECT

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

FAST M2

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

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

CHLOE

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

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

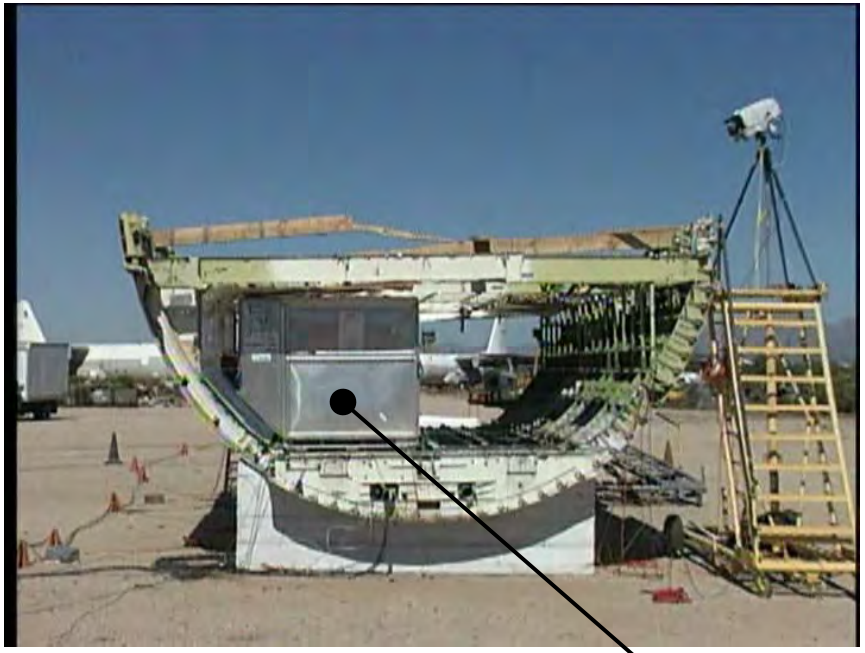
- *Pacific Rim Conference*, Early 2009, TBA

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

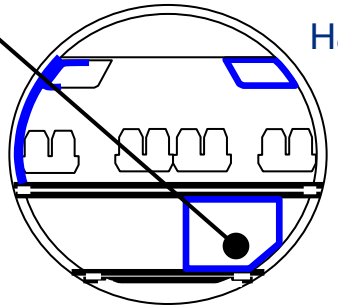
Homeland Security

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

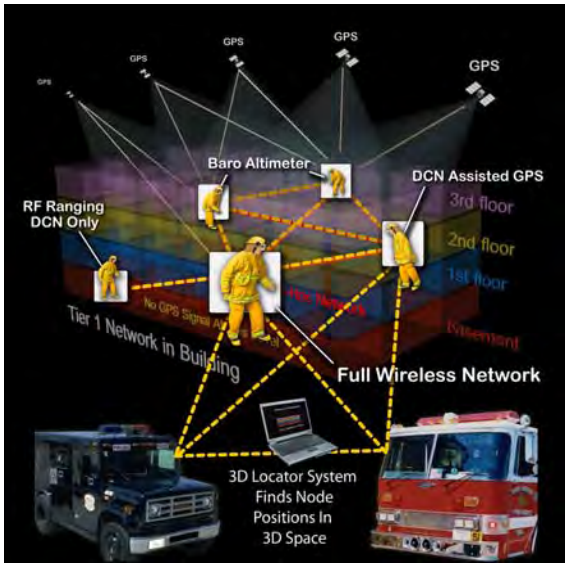
Rapid Technology Development

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

Homeland Security

TechSolutions Investments

3-D Locator



Ocular Scanning
Nerve Agents/Toxic Gases

Next Generation
Breathing Apparatus

Carrizo Cane – Bio Agent

Biometric Identification

Fire Ground Compass

San Diego International Airport

Mark Denari
Director,
Aviation Security & Public Safety

January 17, 2008

Overview

- Aviation Threats
- Recent Threats
- Post 9/11
- Pressing Challenges
- Today’s Environment
- Technological Solutions
- Summary

Threats to Aviation

- Threats to airports—all the same…vulnerabilities different
  - Targets: No. 1—*aircraft*…No.2 *terminals*
- Threats x 2
  - Forceful takeover
  - Explosives…IED or VBIED
- Threat vectors—multiple directions

Recent Threats

- London, August 2006…
  - Terrorist plot to assemble “liquid compound” IED aboard numerous US flag air carriers
  - Highly motivated…shows innovation
- Glasgow Airport, June 2007…
  - Terrorists drive vehicle bomb into terminal building
  - Patterned after similar attacks

September 11, 2001

- ATSA—major initiatives
  - transitioned screening to federal government – TSA
  - mandated 100% EDS screening for checked baggage
- Passenger & property screening
  - Slightly better than pre 9/11…due to better human performance
  - But, no “new” equipment has emerged!

Three Greatest Challenges

Conventional Threats

- *Threat to Terminals*—vehicle-borne improvised explosive device (VBIED)
- *Threat to Aircraft*—IED or IED components in carry-on baggage

Asymmetric Threats

- *Threats to both Terminals & Aircraft*—chemical, nuclear, biological, and radiological (CNBR)

Today's Environment

Vehicle-born Improvised Explosive Device (VBIED)

- *No* technological detection capability

Explosives in Carry-on Baggage

- *Limited* technological detection capability
  - backscatter x-ray machine

Chemical, Nuclear, Biological and Radiological

- *Limited* technological detection capability

Technological Solutions

VBIED

- Video analytics coupled with data comparison
- Chemical detection sensors

Carry-on IED

- Computer Tomography (CT)

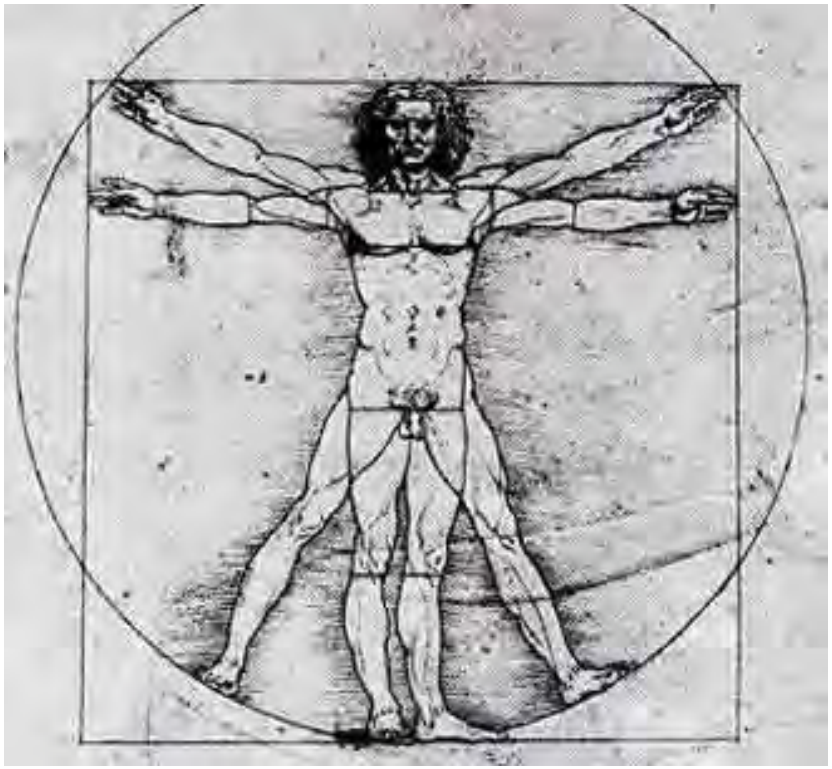
CNBR

- Enhanced detection sensors

Summary

- Must do research and develop advanced technologies to counter these potential threats
- Embrace, nurture, and practice collaboration…it's the pathway to success
- Continue outreach…the more you know, the more you can accomplish
- Work with a sense of urgency…there is a great deal at stake

Human Factors Division



Sharla Rausch, Ph.D., Division Head
Department of Homeland Security (DHS)
Science and Technology (S&T) Directorate
Human Factors Division

From Science and Technology…Security and Trust

Homeland Security

Human Factors Division Mission Statement

To apply the social and behavioral sciences to improve detection, analysis, and understanding of the threats posed by individuals, groups, and radical movements; to support the preparedness, response, and recovery of communities impacted by catastrophic events; and to advance national security by integrating human factors into homeland security technologies.

Customers: TSA, US-VISIT, USCIS, ICE, SCO, USSS, FEMA, OI&A, USCG, State & Local, S&T Divisions

Homeland Security

Human Factors Division Goals

1. Enhance the analytical capability of the Department to understand terrorist motivation, intent and behavior.
2. Improve screening by providing a science-based capability to identify deceptive and suspicious behavior.
3. Enhance the capability to control movement of individuals into and out of the United States and its critical assets through accurate, timely, and easy-to-use biometric identification and credentialing validation tools.
4. Enhance safety, effectiveness, and usability of technology by systematically incorporating user and public input.
5. Mitigate impacts of catastrophic events by delivering capabilities that incorporate social, psychological and economic aspects of community preparedness, response and recovery.

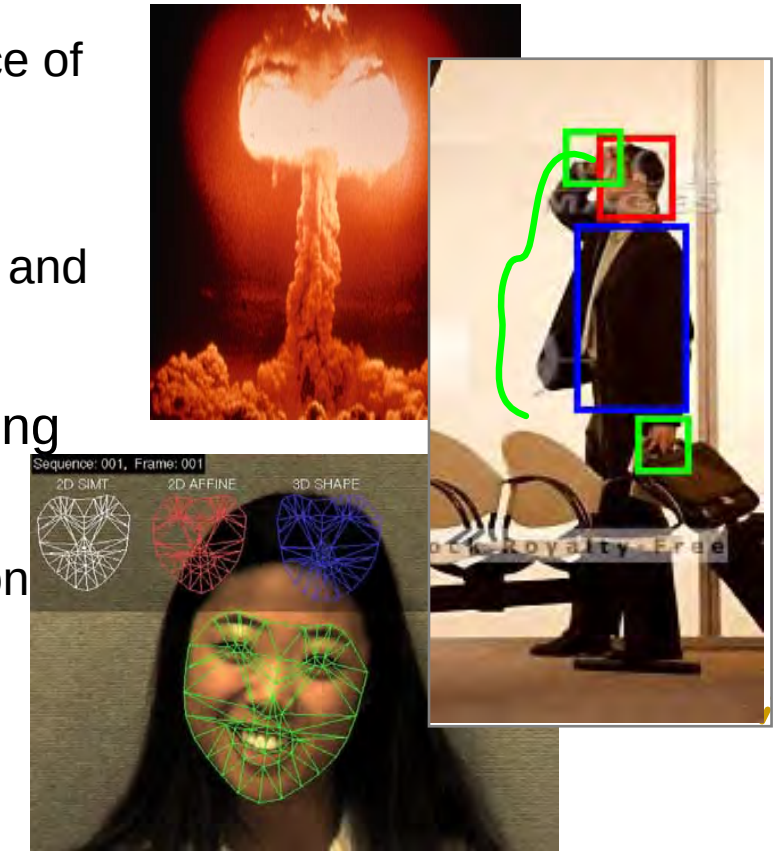
Know our enemies, understand ourselves; put the human in the equation.

Homeland Security

HFD Thrust Areas

The DHS S&T Human Factors Division is comprised of two primary thrust areas, with programs under each:

- Social-Behavioral Threat Analysis
  - Precursors, Signatures, and Deterrence of Radicalization
  - Suspicious Behavior Detection
  - Community Preparedness, Response, and Recovery
- Human-System Research & Engineering
  - Personal Identification Systems
  - Technology Acceptance and Integration
  - Human-System Optimization



Homeland Security

Infrastructure Geophysical Division

Christopher Doyle
Division Head
Infrastructure Geophysical Division
Science and Technology Directorate
Department of Homeland Security

"Putting First Responders First"

Homeland Security
Science & Technology

Infrastructure Geophysical Division

Mission:

- Increase the Nation's preparedness for and response to natural and man-made threats through superior situational awareness, enhanced emergency responder capabilities, and critical infrastructure protection

Customers:

- DHS Office of Infrastructure Protection (OIP)
- DHS Federal Emergency Management Agency (FEMA)

End-users:

- First responders
- S/L/Fed emergency managers
- Private sector infrastructure owners and operators

Homeland Security

Thrust Areas/Programs

Critical Infrastructure

- Protective Technologies
- Modeling, Simulation and Analysis
- Advanced Surveillance
- Rapid Response and Recovery

Preparedness and Response

- Incident Management Enterprise
- Integrated Modeling, Mapping and Simulation for Incident Planning and Response
- Personnel Monitoring and Tracking

Geophysical

- Resilience
- Natural Disaster Recovery
- SAFE

SAFE
Secure Against Fires and Embers

Homeland Security

What We Need:

Critical Infrastructure Protection

- Advanced surveillance
- Hardening technologies
- Automatic response/repair
- Rapid reconstruction
- Insights for private industry technical directions
- Critical Infrastructure Sector requirements

Incident Management

- Insight into internal R&D programs
- Systems in harsh and difficult environments
- Plug & Play, interoperable, distributed modeling & simulation
- Intelligent, easy to use, secure workflow IM engines
- Innovative System integration framework/platform
- Integrated First Responder protection systems

Geophysical

- Hurricane mitigation
- Storm surge defeat
- Long-term, sustainable
- solutions
- Early warning for all hazards
- Affordable protection
- Flood proofing

Homeland Security

Explosives Division

Jim Tuttle
Explosives Division Head
Science and Technology Directorate
Department of Homeland Security

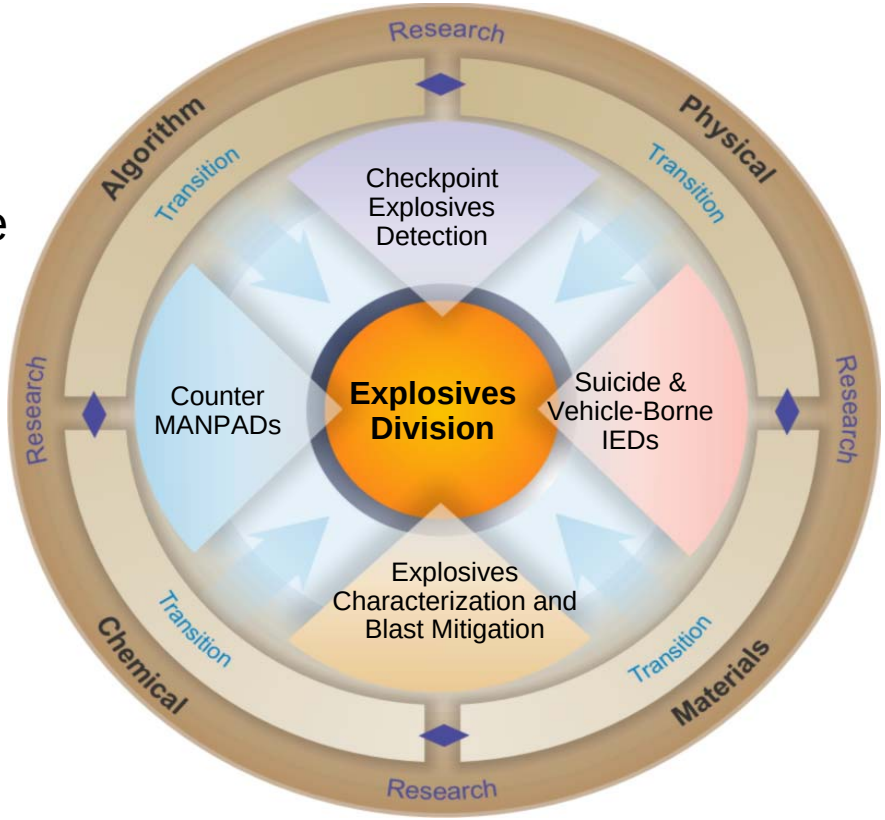
"Putting First Responders First"

Homeland Security
Science & Technology

Explosives Division

Mission: To develop technical capabilities to detect, interdict, mitigate, and respond to the effects of non-nuclear explosives terrorism and accidents.

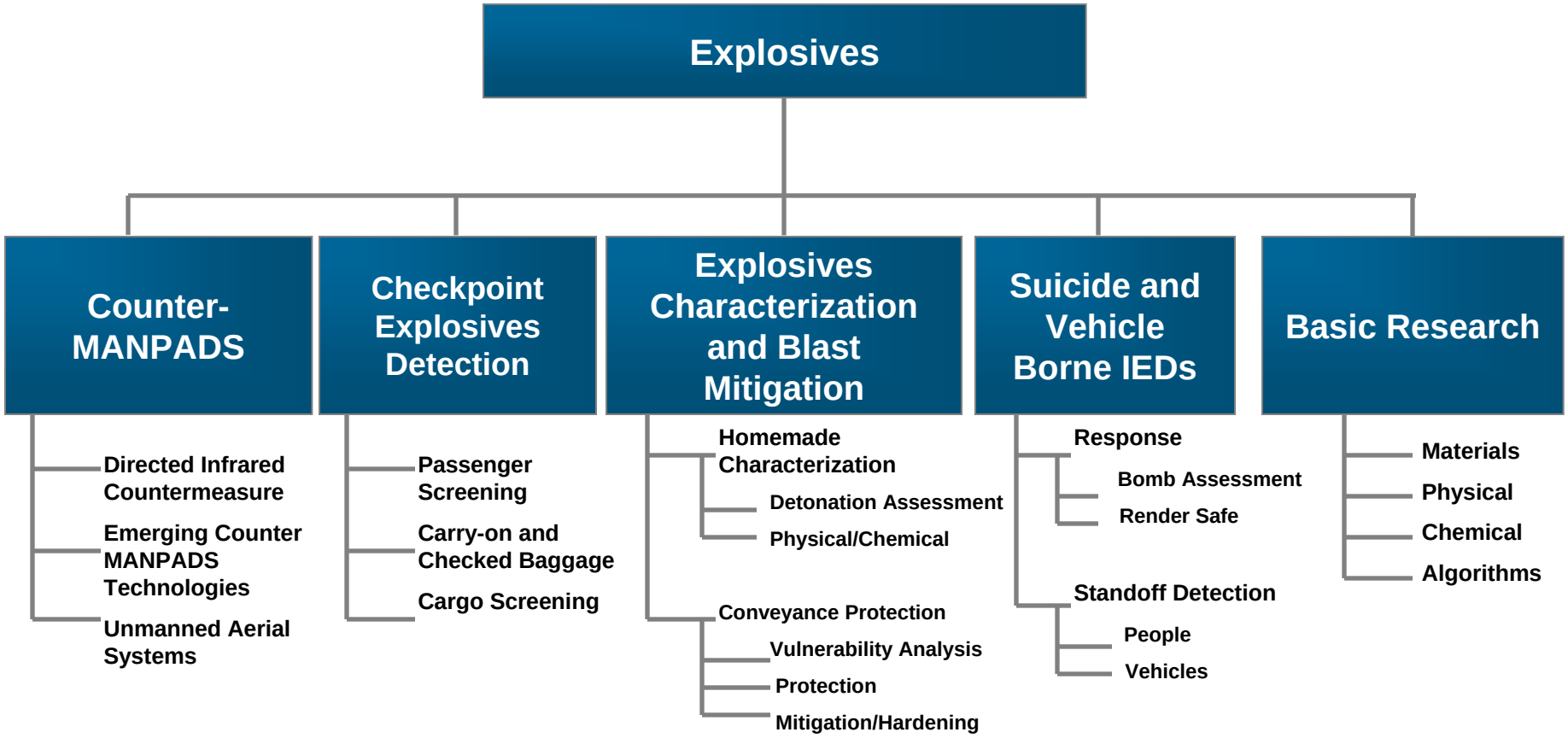
Customers:
- Transportation Security Administration
- National Protection & Program Directorate
- US Secret Service
- Customs and Border Protection
- US Coast Guard
- Federal, state and local first responders



Homeland Security

Division Organization

Managed by the DHS Science and Technology Directorate, the Explosives Division delivers on its mission through five thrust areas.



Homeland Security

Explosives Prevention: Representative Technology Needs

- Standoff detection on persons (portable solutions)
- Screen People at checkpoints for explosives and weapons
- System solution for detection in baggage (checked & carried)
- Screen Air Cargo for Explosives
- Capability to detect VBIED / large threat mass (container, trailer, ship, vessel, car, rail)
- Capability to detect homemade or novel explosives
- Capability to assess, render safe, and neutralize explosive threats
- Optimize canine explosive detection capability

Homeland Security

Explosives Breakout Sessions

Wednesday

- **Breakout 17: Explosives Division: Counter-IED Program and the First Responder: Response and Render Safe (2pm)**

- **Breakout 24: Response/Render Safe—Developing Future Requirements for the First Responder (3pm)**

Homeland Security

Chemical Biological Division

S. Elizabeth George, Ph.D.
Chemical Biological Division Head
Science and Technology Directorate
Department of Homeland Security

"Putting First Responders First"

Homeland Security
Science & Technology

Chemical and Biological Division Overview

Mission: to increase the Nation's preparedness against chemical and biological threats through improved threat awareness, advanced surveillance and detection, and protective countermeasures.

Key 5 year deliverables:

- Integrated CBRN risk assessments
- Anticipation of future & unconventional threats
- Chemical infrastructure risk assessment
- Fully automated Gen 3 BioWatch
- Integrated CBRN facility protection
- National lead for operational biological and chemical forensics
- Decision tools and veterinary countermeasures for Foreign Animal Diseases (FADs)

Current BioWatch collects air samples & analyzes them in LRN lab

IPT Co-Chairs: OHA, IP

DHS Drivers: OHA, IP, I&A, CBP, NPPD, PLCY, DNDO, Interagency Gaps

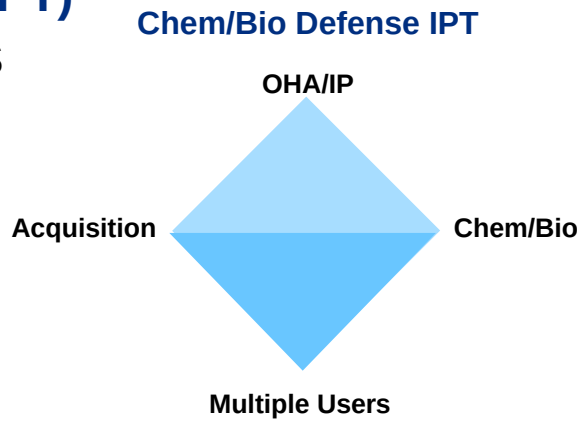
End-Users: HSC, HHS, FBI, USDA, IC, EPA, local public health, critical facilities

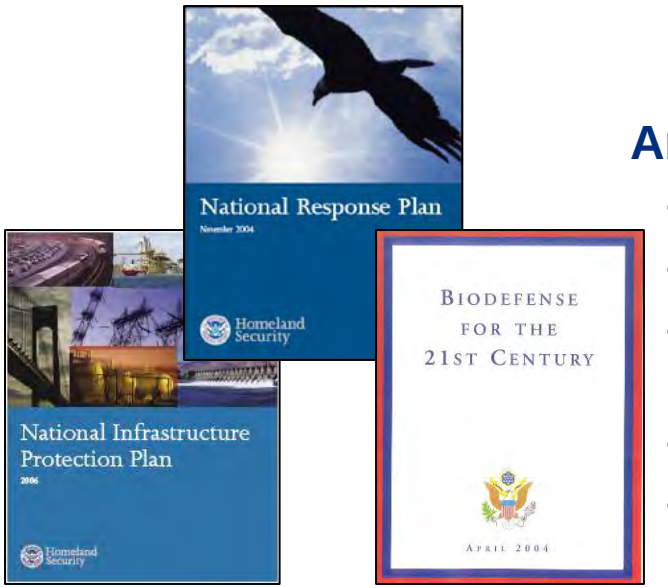
Homeland Security

Where Do Our Requirements Come From?

Directly from a Capstone Integrated Product Team (IPT)

- Co-chaired by DHS Office of Health Affairs (OHA) and DHS Infrastructure Protection (IP)
- Membership from other DHS operational arms
- Identified 50+ Capability Gaps in first IPT process (FY07)





And they in-turn, base their requirements on

- Homeland Security Presidential Directives – 10, 7, 9, 18
- Congressional legislation & guidance
- National planning & implementation guidance – NIPP, NRP, NIMS, and the National Planning Scenarios
- Risk, vulnerability and mitigation studies
- Private, local, state inputs

Homeland Security

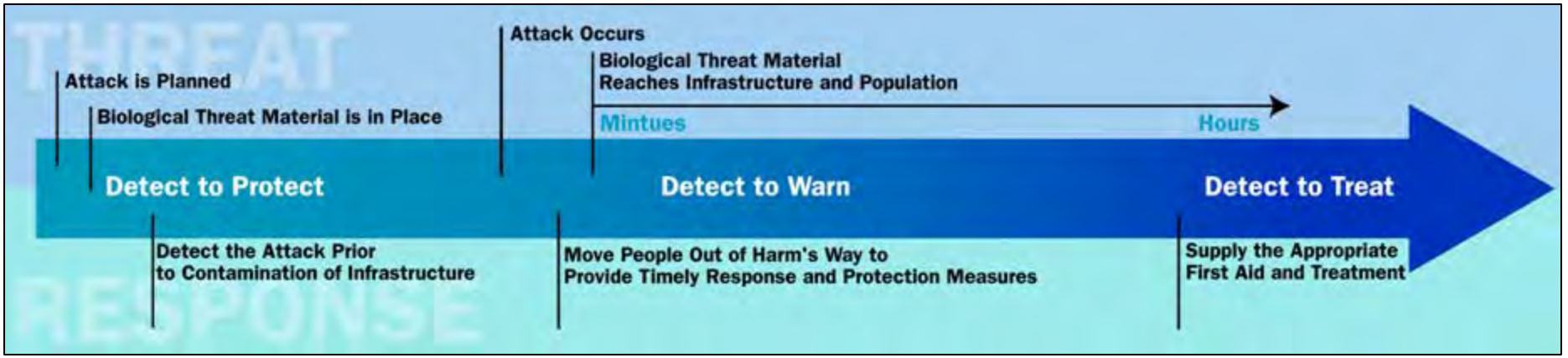
ChemBio Division:
3 Thrust Areas and 9 Major Programs

The overall structure reflects our HSPD-9, HSPD-10 and HSPD-18 responsibilities

Thrust Area	Program	Major Products
Bio	Systems Studies	System tradeoffs e.g. Gen 3 BioWatch; policy net assessments
	Threat Awareness	Risk assessments; lab studies to close key gaps
	Surveillance and Detection R&D	Detection systems for air, food; supporting assays
	Forensics	Enhance and operate the National Bioforensics Analysis Center (NBFAC)
	Response and Restoration	System approaches for recovering from bio attack
Ag	Foreign Animal Diseases	Modeling, vaccines & diagnostics for FAD; JADO
Chem	Analysis	Chemical threat characterization and risk assessment; Develop and validate forensic analysis tools to enable attribution
	Detection	Chemical detection systems for facility monitoring and first responders
	Response and Recovery	Decontamination tools and systems approaches for chemical decontamination

Homeland Security

Biological Detection Paradigms and Timeline



FBADS
Food Biological Agent Detection Sensor

IBADS
Instantaneous Biological Agent Detection System

RABIS
Rapid Automated Biological Identification System

LBADS
Low-Cost Bio-Aerosol Detection Systems

Bioagent Autonomous Networked Detectors
BAND

Homeland Security

Successful Transition of Major Programs to Customers

Gen 1, 2 BioWatch

Rapidly Deployable Chem Detection System (RDCDS)

PROTECT: Chemical Detection System

1st phase of mobile chem lab (PHILIS) to EPA

Homeland Security

Early Detection to Mitigate Consequences

Gen 1 BioWatch (FY03):

- Operating in > 30 cities
- Detect in 12-36hrs
- Over 3M assays without a false positive

Gen 2 BioWatch enhancements (FY05-07)

- 4x increase in collectors in top 10 threat cities
- Critical transportation hubs and special events

Gen 3 BioWatch (FY09-12)

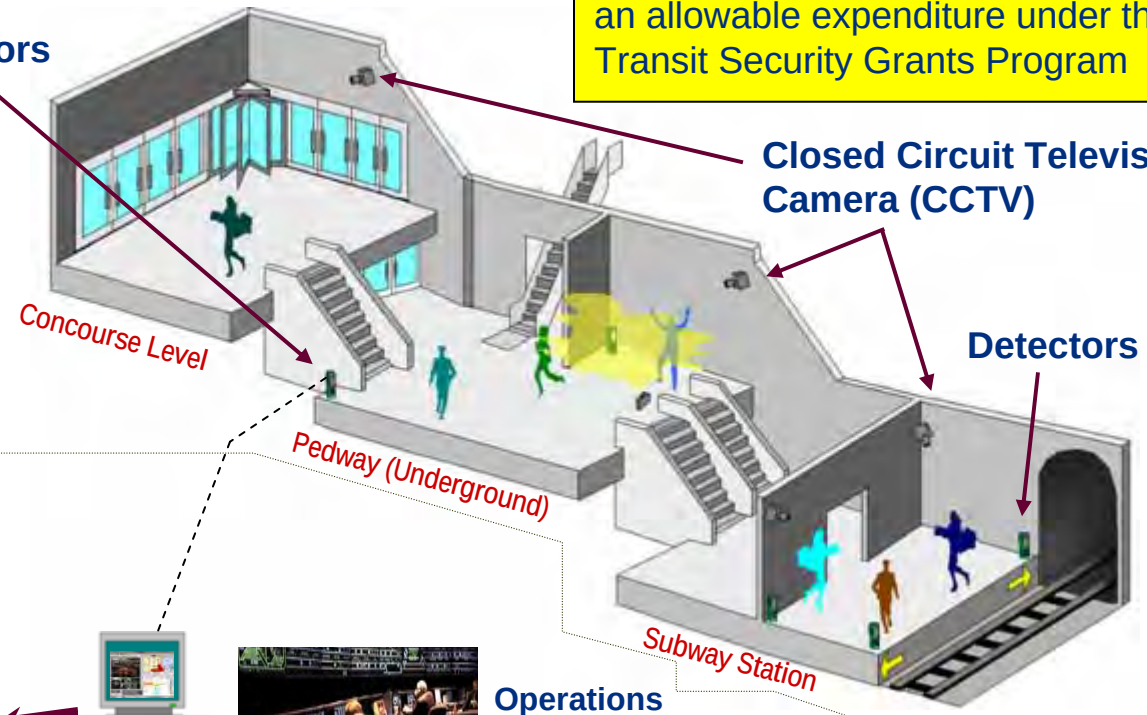
- Fully autonomous, analyzes at same site it collects – 3 to 6 times daily
- Cover a major portion of US population
- Detect a smaller attack than Gen 1
- Per unit operational cost < 25% of current system

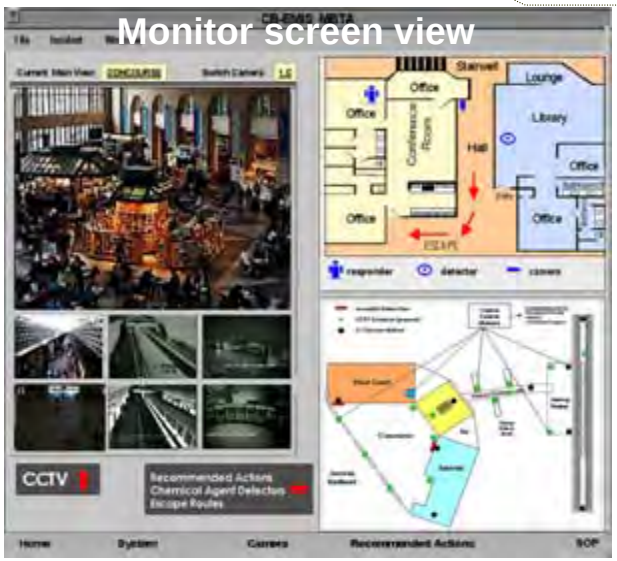
Homeland Security

PROTECT: Chemical Early Warning System

This program has transitioned and is an allowable expenditure under the Transit Security Grants Program

Demonstration completed 2003






Fiber Optic Link


Operations Control Center (OCC)


External Fireman Jacks

Deployed in US transit systems

Homeland Security

Rapidly Deployable Chemical Detection System

Airborne Segment

Outdoor releases

Stand-off Detection capability:
- Chemical vapor
- 3 minute presumptive identification by interpreter
- 40 minute confirmed identification by interpreter
- Plume mapping

Ground Segment

Indoor/Outdoor releases

Point Detection capability:
- Chemical vapor and aerosols
- 2 minutes identification of CW agents by interpreter
- 2 minutes identification of TICs by interpreter

Interpreted results communicated to incident commander

Deployed in support of Special Security Events

Homeland Security

Revised January 8 2008

In Summary

S&T Chem-Bio efforts are part of a national strategy as reflected through the requirements of the DHS operational offices

We have already made a difference with first generation systems, e.g.

- Bio risk assessments to help prioritize national investments
- Developed and transitioned to operation bio and chem detection systems (BioWatch, BWIC, PROTECT, RDCDS, PHILIS)
- Operational forensic capabilities
- Improved protocols and tools for protecting transportation facilities

We are currently developing the next generation tools & systems to meet DHS and National requirements

S&T-ChemBio@dhs.gov

Homeland Security

Borders & Maritime Security

Captain David Newton, USCG
Borders & Maritime Security Division Head
Science and Technology Directorate
Department of Homeland Security

"Putting First Responders First"

Homeland Security
Science & Technology

Borders and Maritime Security Division

Mission Statement:
Develop and Transition Capabilities that Improve the Security of our Nation's Borders without Impeding the Flow of Commerce and Travelers

Stop Bad Things and Bad People from Entering the Country

AND

In the Maritime- Protect the Public, the Environment, and U.S. Economic and Security Interests

Borders are all land and maritime borders including U.S. ports-of-entry, vast stretches of remote terrain and inland waterways

Customers:

Customs and Border Protection (CBP), United States Coast Guard (USCG), Immigration and Customs Enforcement (ICE), Transportation Security Administration (TSA), and Citizenship and Immigration Services (CIS)

Homeland Security

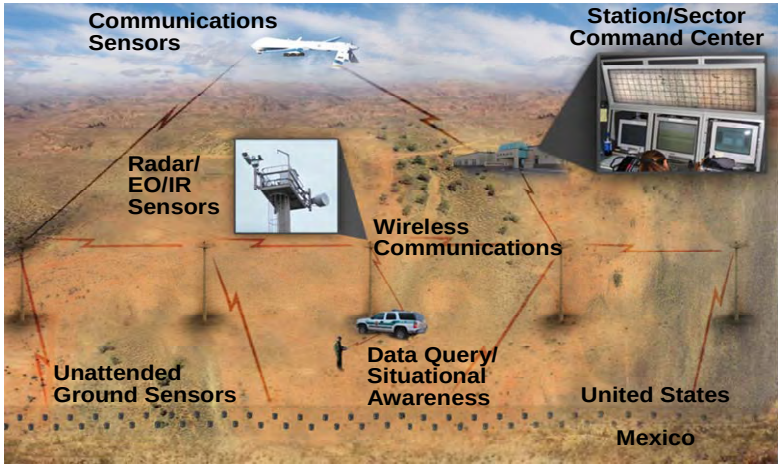
Representative Technology Needs

Border Security

- Improved ballistic protection via personal protective equipment
- Improve detection, tracking, and identification of all threats along the terrestrial and maritime border
- Non-lethal compliance measures for vehicles, vessels, or aircraft allowing for safe interdiction by law enforcement personnel

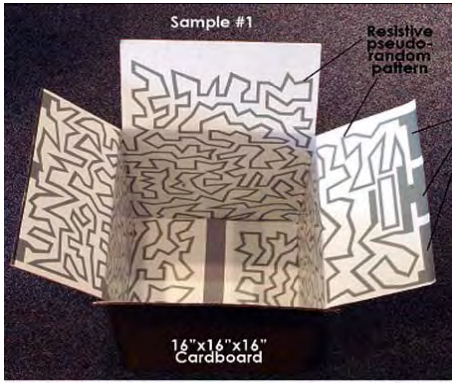
Maritime Security

- Wide-area surveillance from the coast to beyond the horizon; port and inland waterways region - detect, ID, and track
- Data fusion and automated tools for command center operations
- Vessel compliance through non-lethal compliance methods



Cargo Security

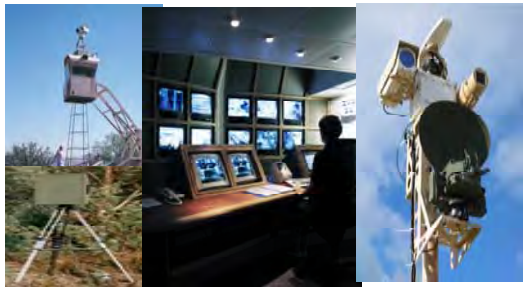
- Enhanced screening and examination by non-intrusive inspection
- Increased information fusion, anomaly detection, Automatic Target Recognition capability
- Detect and identify WMD materials and contraband



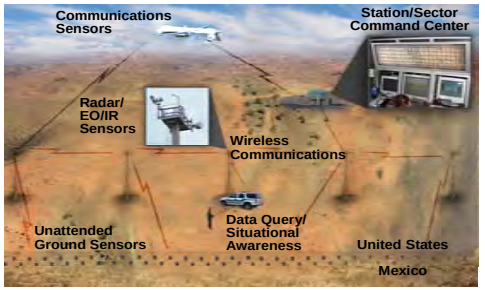
Homeland Security

Border Watch

Border/Maritime Technologies

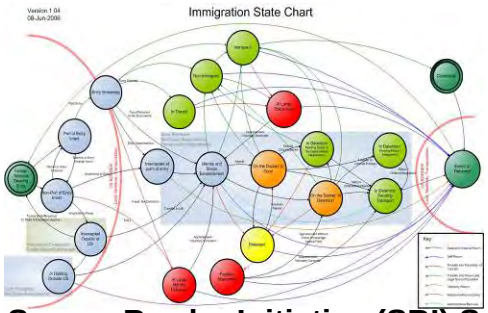


Border Detection Grid



BorderNet

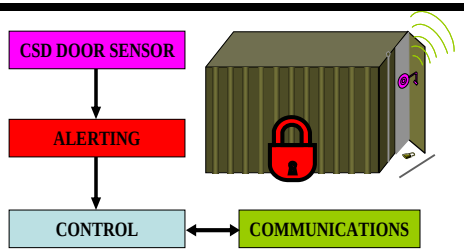
Sensor/Data Fusion, and Decision Aids



Secure Border Initiative (SBI) Systems Engineering and Modeling & Simulation

Border Officer Tools and Safety

Cargo and Conveyance Security

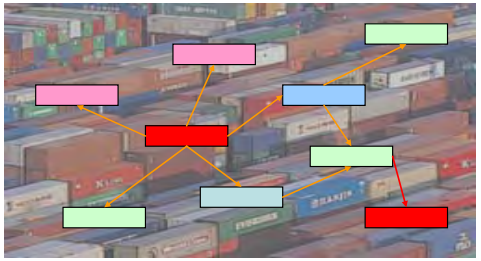


Container Security Device

Advanced Container Security Device (ACSD)

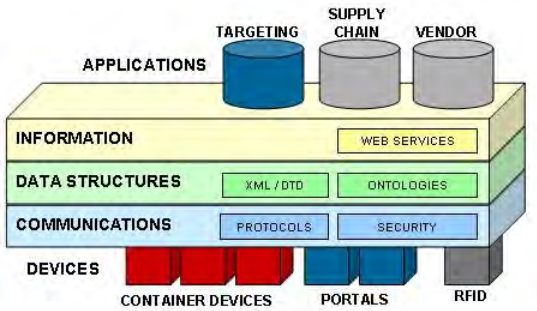
Marine Asset Tag Tracking System (MATTS)

Secure Carton



Advanced Screening and Targeting (ASAT)

Hybrid Composite Container



Supply Chain Security Architecture

Homeland Security

Command, Control and Interoperability

Dr. David Boyd
Division Head
Command, Control and Interoperability
Science and Technology Directorate
Department of Homeland Security

"Putting First Responders First"

Homeland Security
Science & Technology

Command, Control and Interoperability

Mission

Through a practitioner-driven approach, CCI creates and deploys information resources to enable seamless and secure interactions among homeland security stakeholders.

•A practitioner-driven approach is defined as a process where the needs of end-users drive the creation of information resources.
•Information resources include standards, frameworks, tools, and technologies.
•Enabling seamless and secure interactions means enhancing the ability to communicate, share, visualize, analyze, and protect information.
•Stakeholders include all local, state, tribal, Federal, international, and private entities engaged in homeland security.



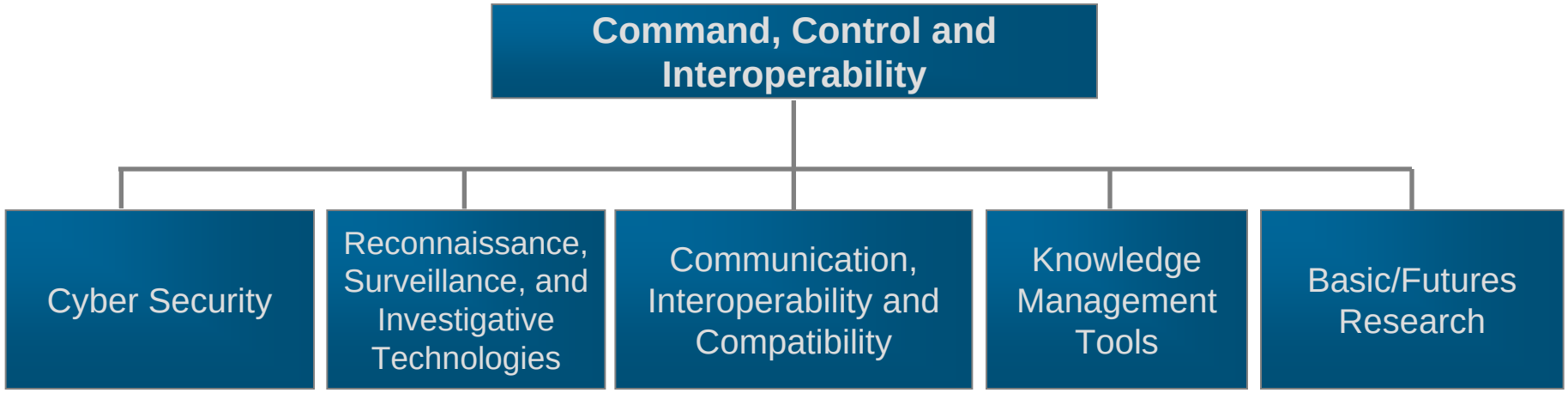

Vision

Stakeholders have comprehensive, real-time, and relevant information to create and maintain a secure and safe Nation.

Homeland Security

CCI Division Organization

Managed by the Department of Homeland Security's (DHS) Science and Technology Directorate, the Command, Control and Interoperability (CCI) Division delivers on its mission through five thrust areas.



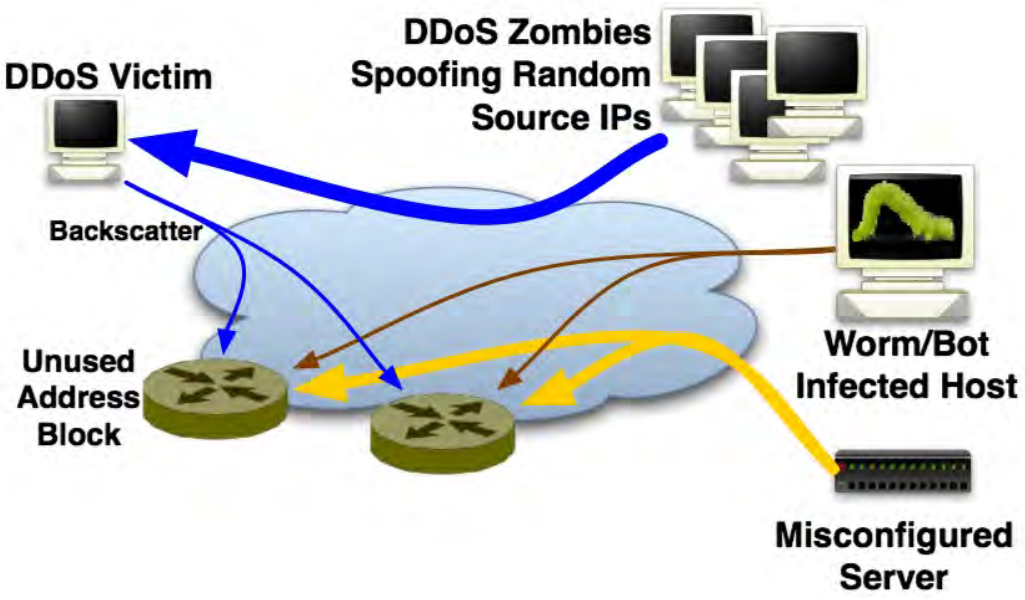
Homeland Security

Cyber Security

- Secures the Nation's critical infrastructure, and coordinates efforts to improve the security of the existing cyber infrastructure

- Focuses on priorities established in the President's *National Strategy to Secure Cyberspace*, as well as needs identified by external stakeholders with emphasis on critical infrastructure

- Addresses cyber security requirements from internal Department customers in support of DHS operational missions in critical infrastructure protection

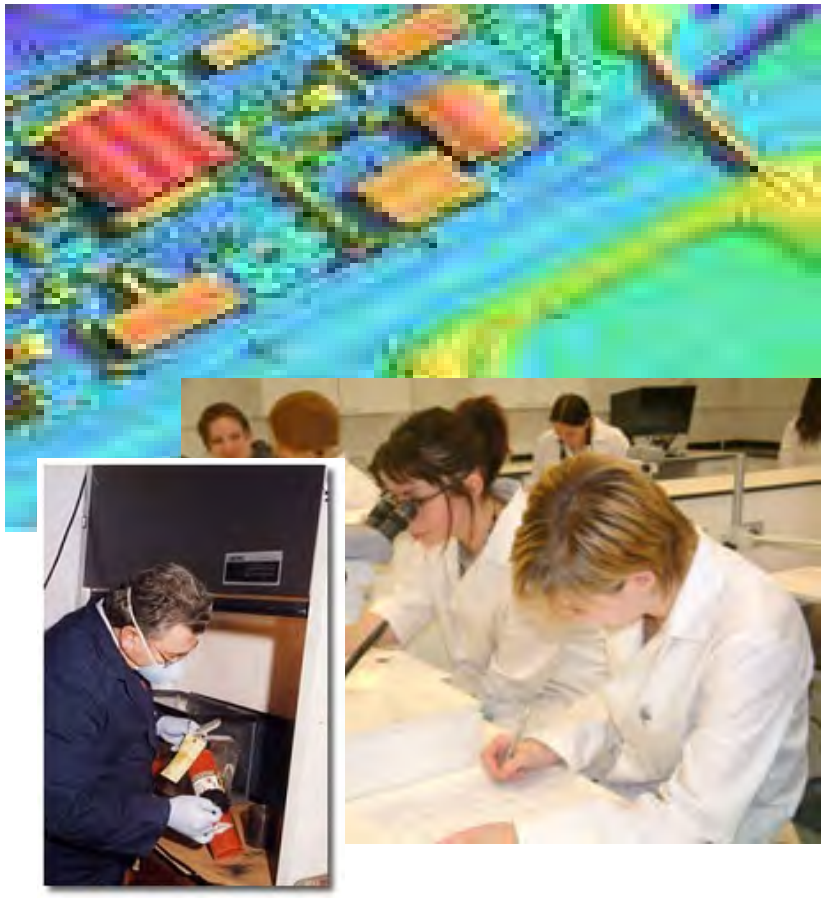


*** Distributed Denial-of Service**

Homeland Security

Reconnaissance, Surveillance, and Investigative Technologies

- Develops and evaluates individual sensor technologies, fusion of multiple sensors, and examination of new sensor technologies
- Develops integrated technology platforms to collect, share, and disseminate information
- Develops advanced investigative and crime scene forensic tools
- Supports the technical rationale for policies and privacy issues associated with these applications
- Initiates R&D activities with intelligence and defense organizations



Homeland Security

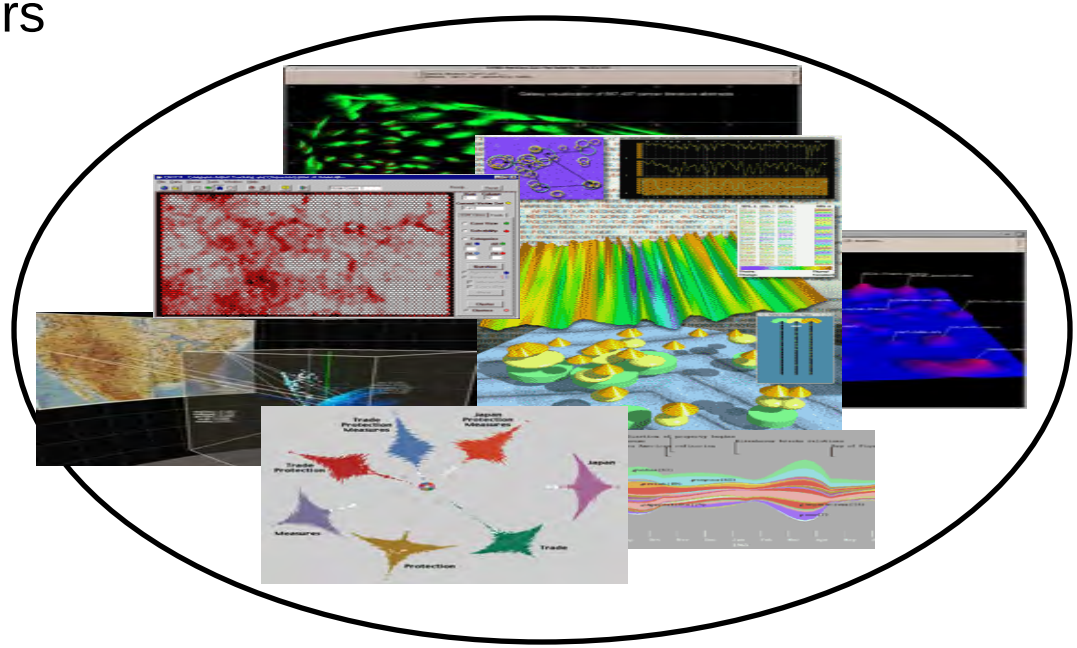
Communication, Interoperability and Compatibility

- Works to strengthen interoperable wireless communications, improve effective information sharing, and develop tools to enhance overall coordination and planning at all levels of government
- Coordinates with primary customers, including DHS Protection and Programs Directorate, Federal Emergency Management Agency, Department of Justice, National Communications System, U.S. Coast Guard, Secret Service, Immigration and Customs Enforcement, Customs and Border Protection, and Transportation Security Administration
- Directs initiatives to end users, including more than 60,000 emergency response agencies nationwide, state homeland security officials, and policy makers at the local, tribal, state, and Federal levels

Homeland Security

Knowledge Management Tools

- Provides knowledge management capabilities to reduce the risk of terrorist attacks and to prepare for and respond to natural and man-made disasters

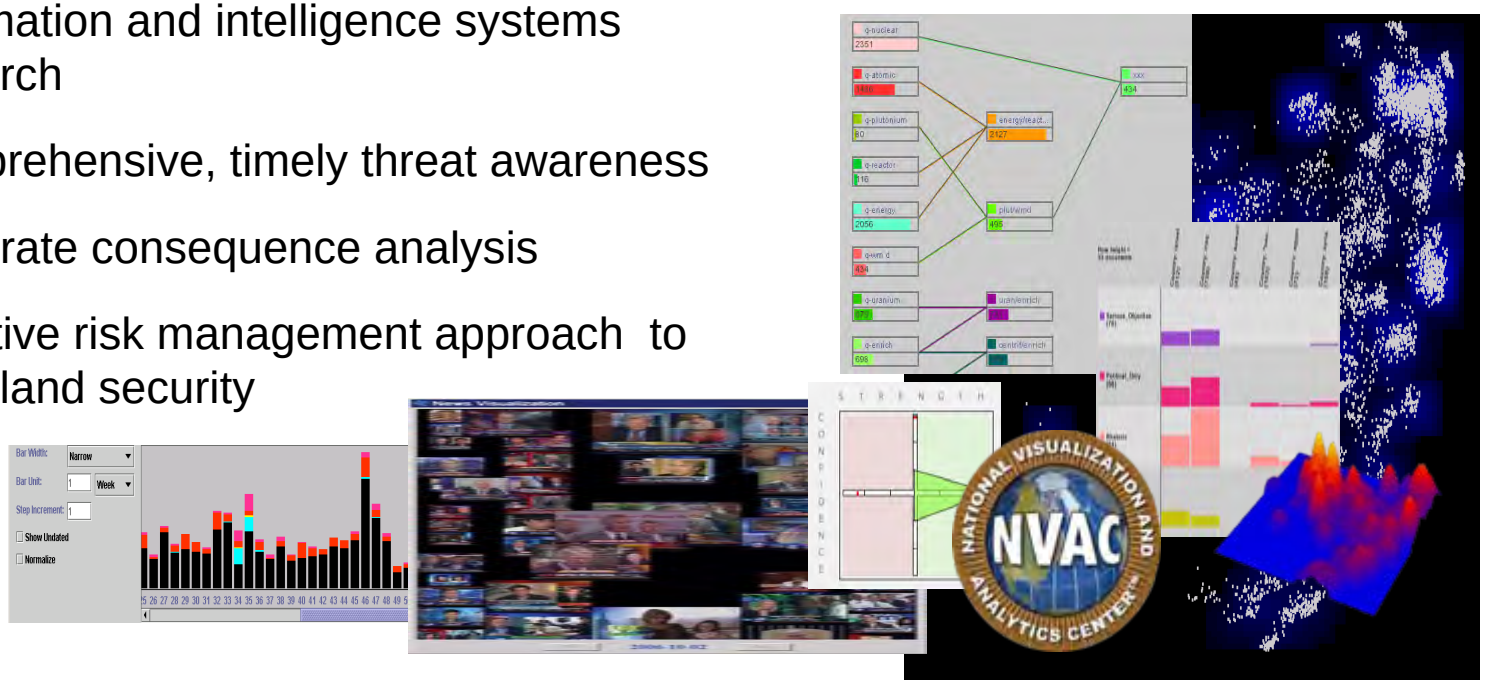


- Develops tools and methods to handle massive amounts of information that are widely dispersed in a great variety of forms
- Works collaboratively to complement efforts in the intelligence, law enforcement, and homeland security communities

Homeland Security

Basic/Futures Research

- Information and intelligence systems research
- Comprehensive, timely threat awareness
- Accurate consequence analysis
- Effective risk management approach to homeland security



Visual Analytics and Physics-Based Simulation: Visually based mathematical methods and computational algorithms for discovering, comprehending, and manipulating diverse data, and applying the resulting knowledge to anticipate terrorist incidents and/or catastrophic events

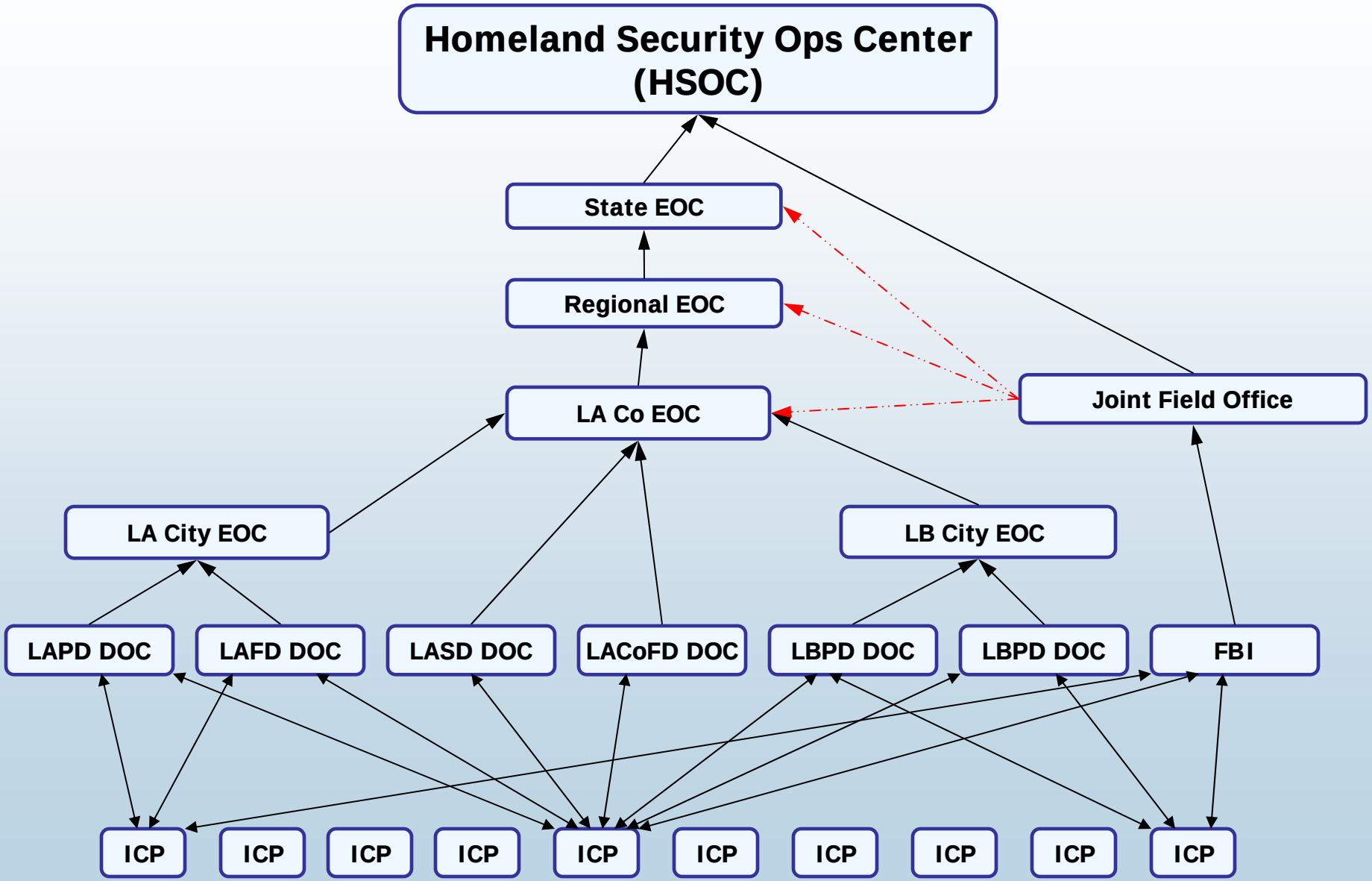
Data-Intensive Computing, Privacy, and Forensics: Software algorithms and hardware architectures for extracting and managing data, assessing threats and consequences, ensuring information privacy, securing the cyber infrastructure, and ensuring telecommunications interoperability

Homeland Security

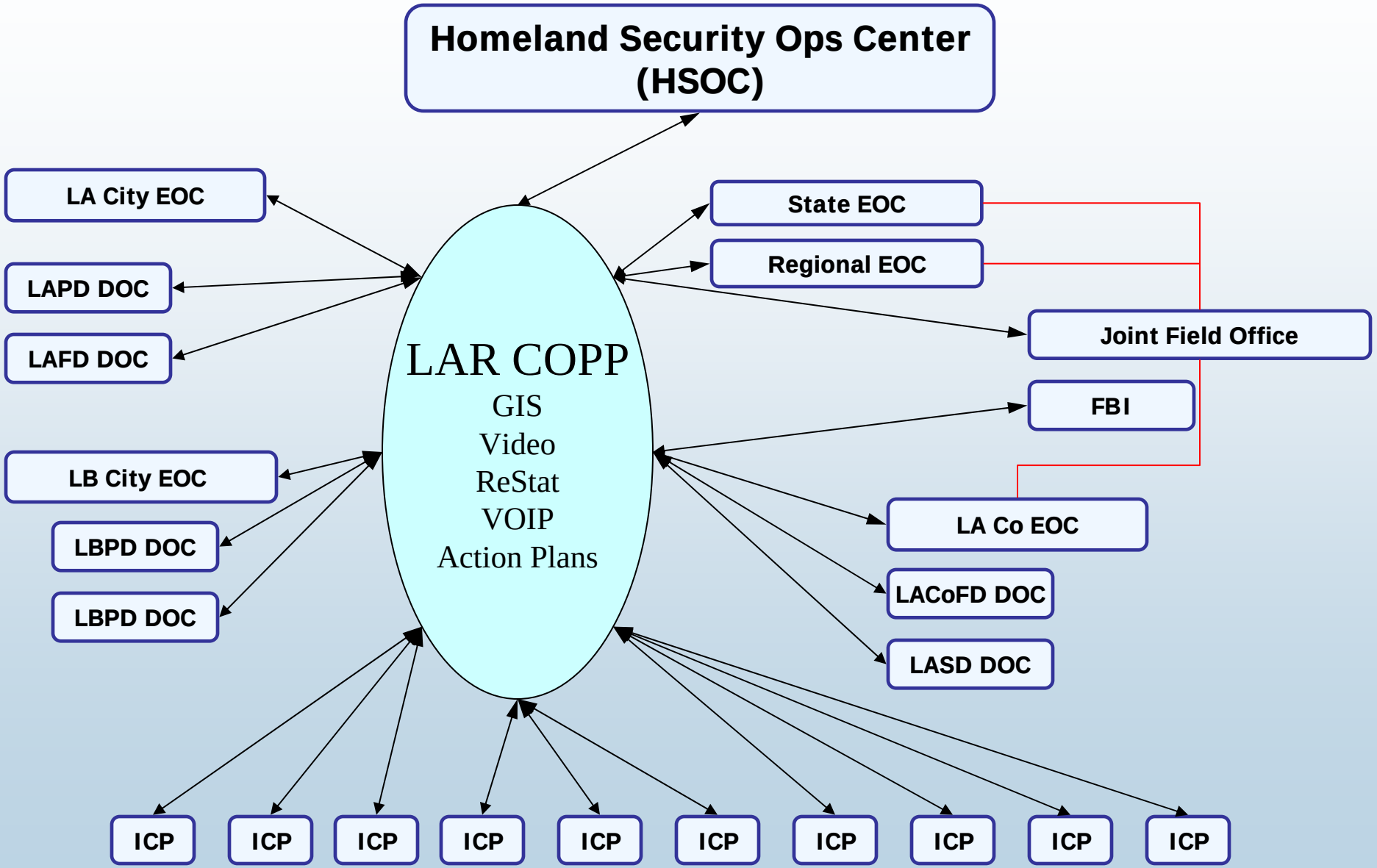
Homeland Security

Science and Technology

Current Information Flow during Multiple Incidents



LAR COPP Information Flow during Multiple Incidents



Basic Research to Enable a Safer Nation

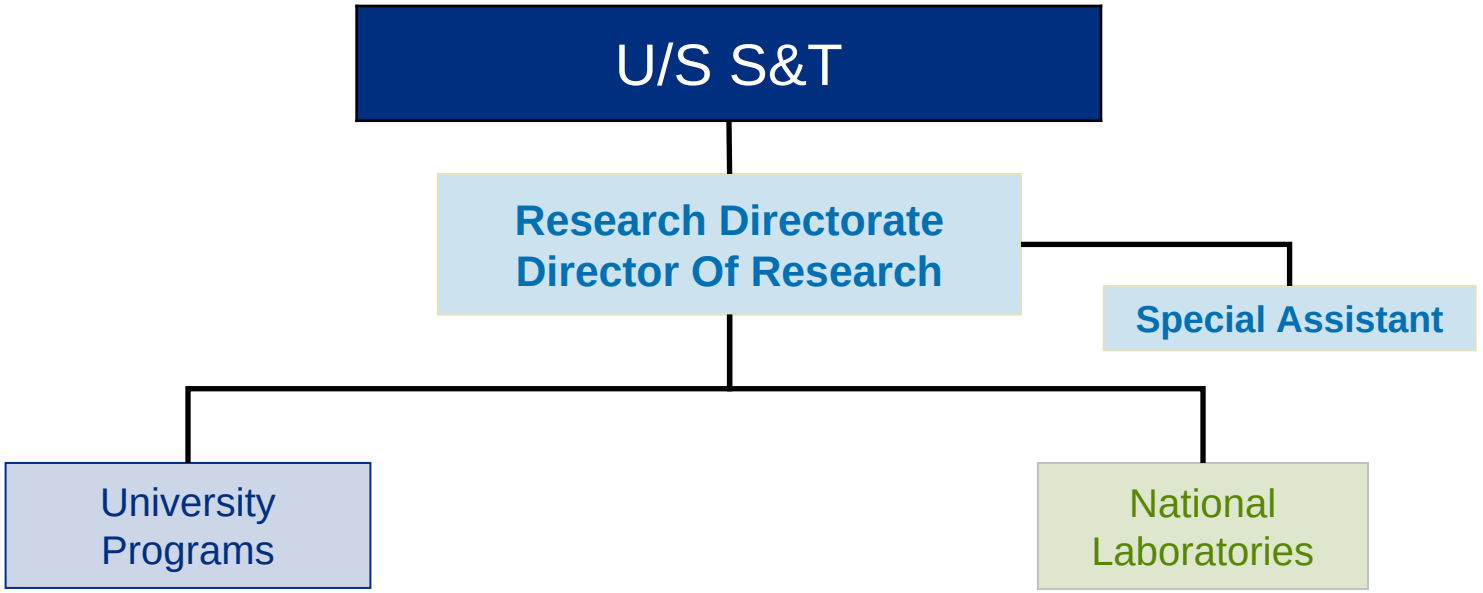
Laboratory Utilization, Construction and Operations

Dr. John Clarke
Representing: Jamie Johnson
Director, Office of National Laboratories
DHS Science and Technology Directorate

From Science and Technology… Security and Trust

Homeland Security

The Office Of National Laboratories Coordinates the Utilization of DHS and DOE Laboratory R&D Capabilities for the S&T Research Directorate



- Centers of Excellence
- Minority Serving Institutions
- Education Programs

- Coordination & Utilization of DOE National Labs
- S&T Lab Operations
- Laboratory Construction

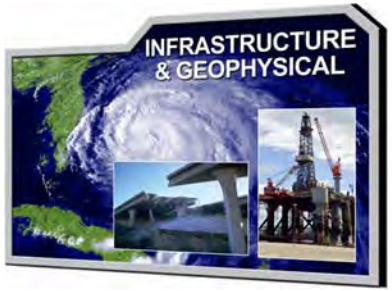
Homeland Security

The Office Of National Laboratories (ONL) Was Created By The Homeland Security Act And Has Clearly Defined Objectives Within DHS S&T

- Coordinate Lab alignment with, and support of, S&T Division needs to provide the new knowledge and technology required to respond to natural and man-made threats to the Homeland

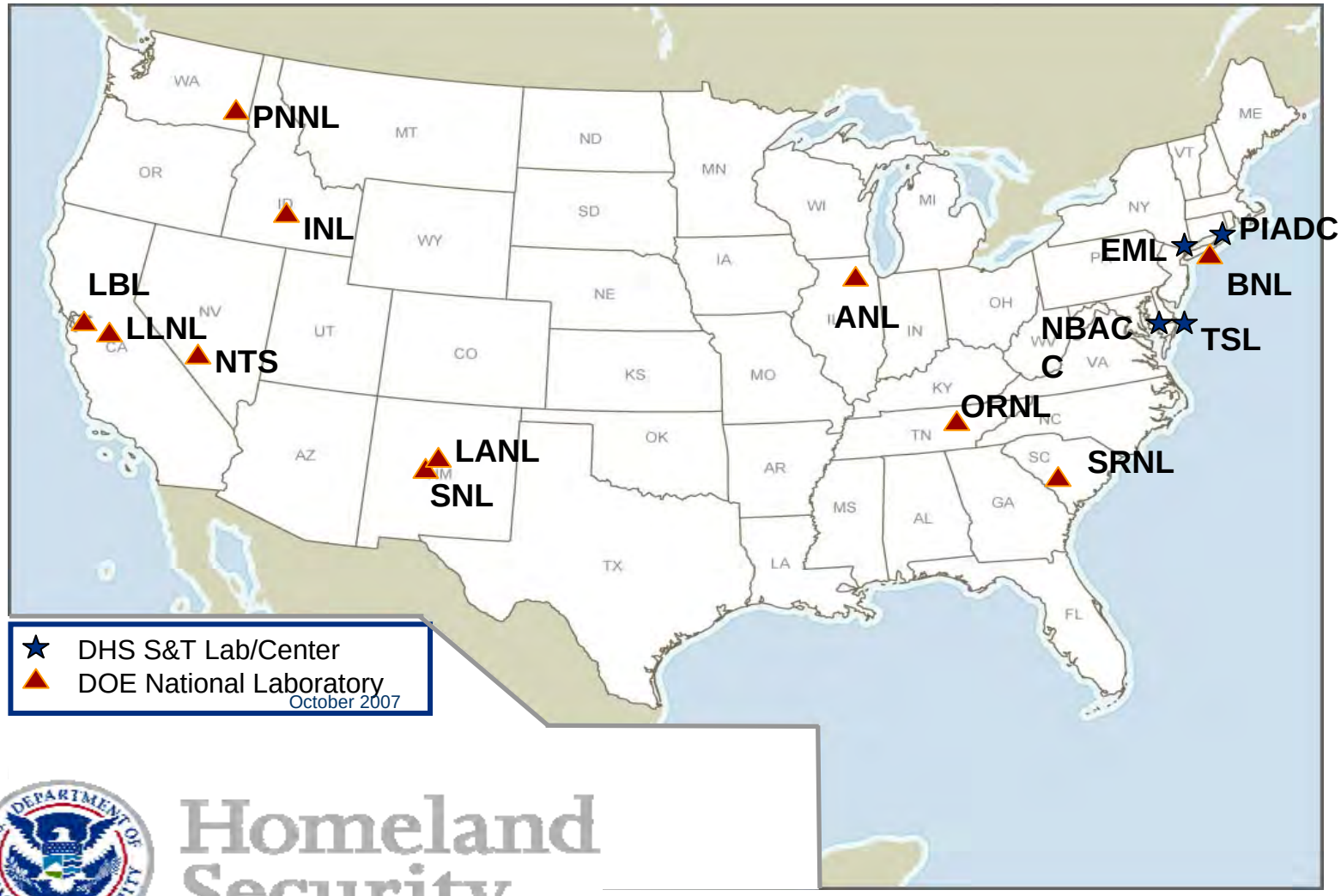
- Identify and harvest innovation from DOE Laboratory Directed Research and Development to support S&T customer requirements

- Facilitate S&T Division utilization of the DOE and DHS laboratory infrastructure, technical expertise and capabilities



Homeland Security

The integrated S&T & DOE National Laboratory Complex conducts <u>both</u> Applied R&D and Basic Research.



Homeland Security

ONL also manages specialized labs, which allow S&T R&D Divisions to satisfy specific DHS Customer needs

TEST & EVALUATION

RESEARCH & SERCICES

Environmental Measurements Laboratory (EML)

Plum Island Animal Disease Center

Transportation Security Laboratory (TSL)

National Biodefense Analysis and Countermeasures Center (NBACC) (Transition Labs Ft. Dietrich, MD)

Homeland Security

ONL manages Laboratory construction aimed at supporting future Homeland Security customer requirements

National Biodefense Analysis and Countermeasures Center (Illustration)

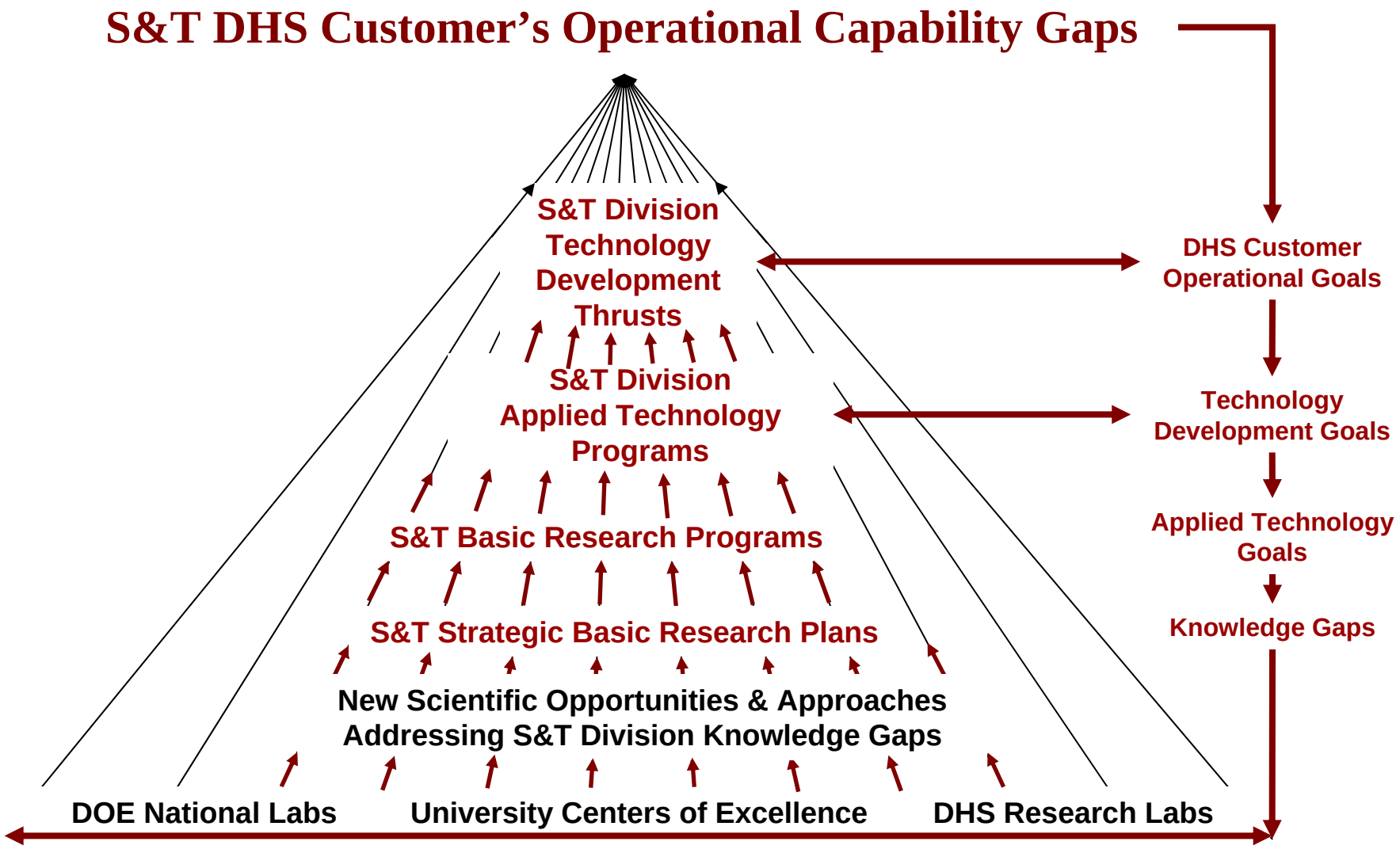
(Construction)

Chemical Security Analysis Center (CSAC)/ Sample Receipt Facility Illustration

(Construction)

Homeland Security

In the DHS/S&T technology development process, both Applied R&D and Basic Research must serve customers



S&T's Broad Basic Research Capability Supports DHS Customers Goals

In addition to Research, National Laboratories Also Provide Technical Expertise to Address Near Term Threats

Liquid Explosives Threat: London, August 11, 2006

• S&T U/S Cohen challenged the National Laboratories to address the liquid explosives threat to aviation with a Rapid Response Team. Outcomes included:

- •Adoption of the current 3-1-1 rule for liquids on aircraft,
- •Identification of promising technologies for screening explosives and
- • Improved alignment of basic and applied research for DHS S&T Explosives Division.

Wildfire Threat: Southern California, October 2007

• S&T U/S Cohen launched the "Secure Against Fires and Embers" (S.A.F.E) initiative explore and identify technologies that could save lives and property in the wildland-urban interface fires.

- • 147 technology possibilities have been identified by DOE, DHS and Forest Service Laboratories and NIST

Homeland Security

Finally, National Laboratories within the S&T Complex Constitute Virtual Resource Centers for Regional HS Technology Partnerships

Homeland Security

Homeland Security

National Biodefense Analysis and Countermeasures Center (NBACC) Facility

National Biodefense Analysis and Countermeasures Center (NBACC) Facility

- Under construction at Ft. Detrick, Maryland as part of the National Interagency Biodefense Campus (NIBC).
- NBACC will be the first research facility space designed and constructed by DHS.
  - 158,000 total sq. ft.
  - Designed to highest biocontainment standards
  - Flexible to support emerging research needs
- Will be operated by Battelle National Biodefense Institute - FFRDC.

Project Milestones

Complete Design	**July 2006**
Start of Construction	**September 2006**
Complete Building Concrete Structure	**October 2007**
Begin Building Occupancy	**July 2008**
Final BSL3 and BSL4 Commissioning	**FY 2009**

Enabling Homeland Capabilities:

NBACC will support two of the seven Biosecurity program areas of the Chemical and Biological Countermeasures Division, S&T Directorate. The NBACC facility will be comprised of the National Bioforensic Analysis Center (NBFAC) and the Biological Threat Characterization Center (BTCC). The NBFAC is the lead Federal agency to conduct and facilitate technical forensic analyses and interpretation of material recovered following a bioterrorist attack. The BTCC will conduct laboratory experiments and studies to fill important gaps in our knowledge of current and future threats

Homeland Security

National Bio and Agro-Defense Facility

National Bio and Agro-Defense Facility (NBAF)

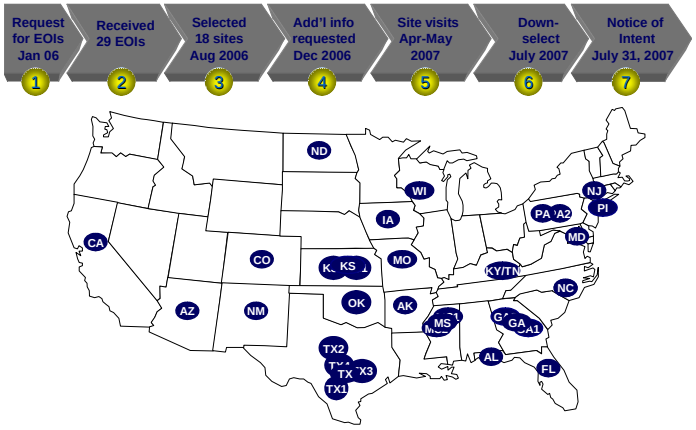
- Proposed replacement for the Plum Island (PIADC) facility
  - Building 50 years old and beyond its design life
  - Transferred to DHS from USDA in 2003
- Provides needed BSL3/4 large animal research capability
  - Unique critical National Asset for Agro-Defense
  - Continues integrated DHS and USDA mission objectives
  - Fulfills critical national biodefense research gaps
  - Provides research for countermeasure and vaccines development
- Currently undergoing environmental assessment process for remaining sites

Project Milestones

Complete Conceptual Design	**July 2007**
Begin EIS on Six Sites	**July 2007**
Complete EIS/Issue ROD	**October 2008**
Begin Detailed Design	**November 2008**
Start Construction	**2010**
Facility Operational	**2014**

Enabling Homeland Capabilities:

NBAF is a next-generation biological and agricultural defense facility proposed to enhance and protect the country's agriculture and public health and support complimentary missions of DHS and USDA. NBAF will offer safe, secure, state-of-the-art biocontainment laboratories of sufficient capacity to work on high- consequence foreign animal and zoonotic diseases in livestock, and to address a current gap in our national strategy for bio-countermeasure vaccine licensure.



Homeland Security

Putting First Responders First

RÄDDNINGS VERKET
Swedish Rescue Services Agency

Putting First Responders First

Sweden

- Member of the EU
- Stockholm
- 450,000 km²
- 9.1 million inhabitants

First Responders

• Fire service	16 000
• Police	17 000
• Emergency medical services	5 000

RÄDDNINGS VERKET
Swedish Rescue Services Agency

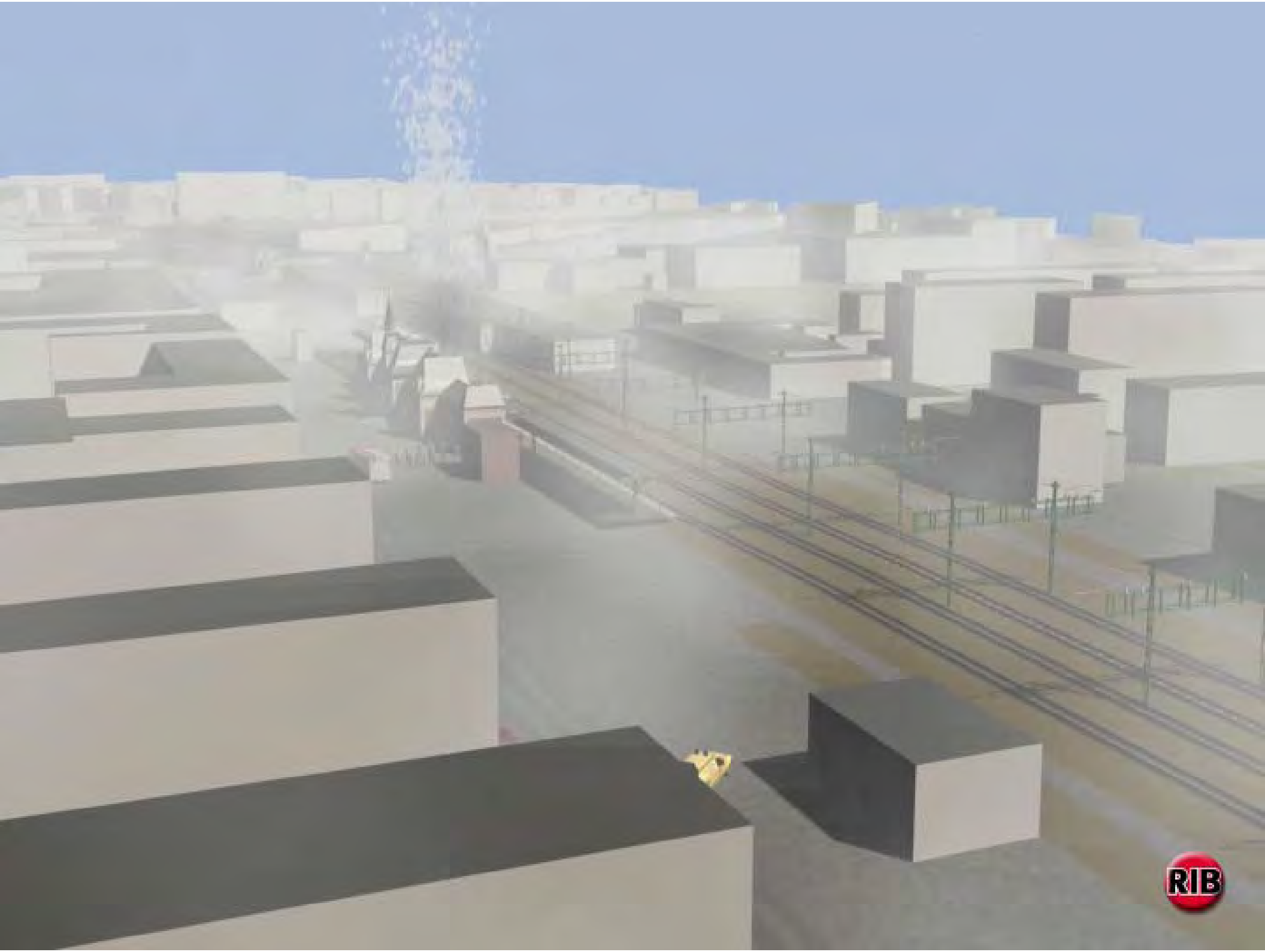
Cooperation in the field of CBRNE

First response procedures

- **Identification – Detection**
- **Damage limitation**
- **Removal of casualties**
- **Isolation**
- **Evacuation**
- **Decontamination**

The initial measures can only be taken by local resources!

RÄDDNINGS VERKET
Swedish Rescue Services Agency


RIB

Cooperation in the field of CBRNE

Important factors for success

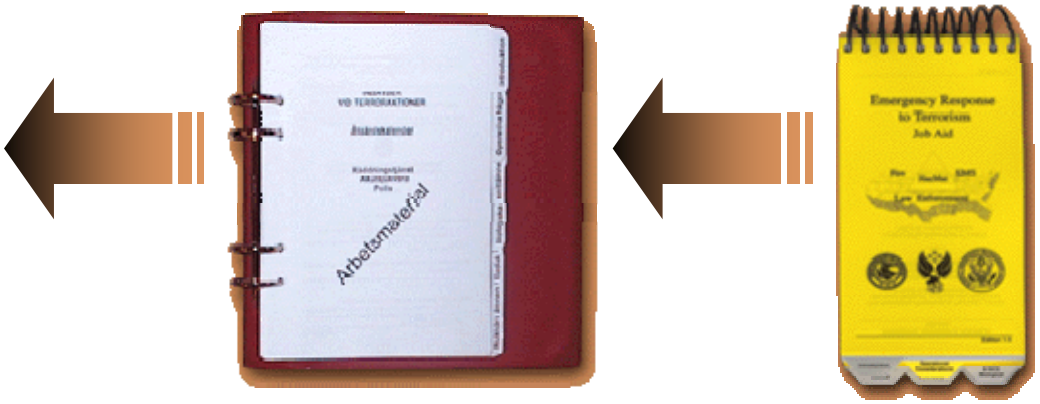
- Knowledge and awareness
- Access to experts, decision support systems and handbooks
- Personal safety, appropriate equipment
- Effective cooperation and coordination

CBRNE in cooperation project

- Create a handbook
- Basic CBRNE competence for all first responders
- Enhance cooperation and coordination
- Focus on the first 10 minutes

RÄDDNINGS VERKET
Swedish Rescue Services Agency

Handbook



Based on: *Emergency Response to Terrorism - Job Aid*

Adjusted to Swedish standards

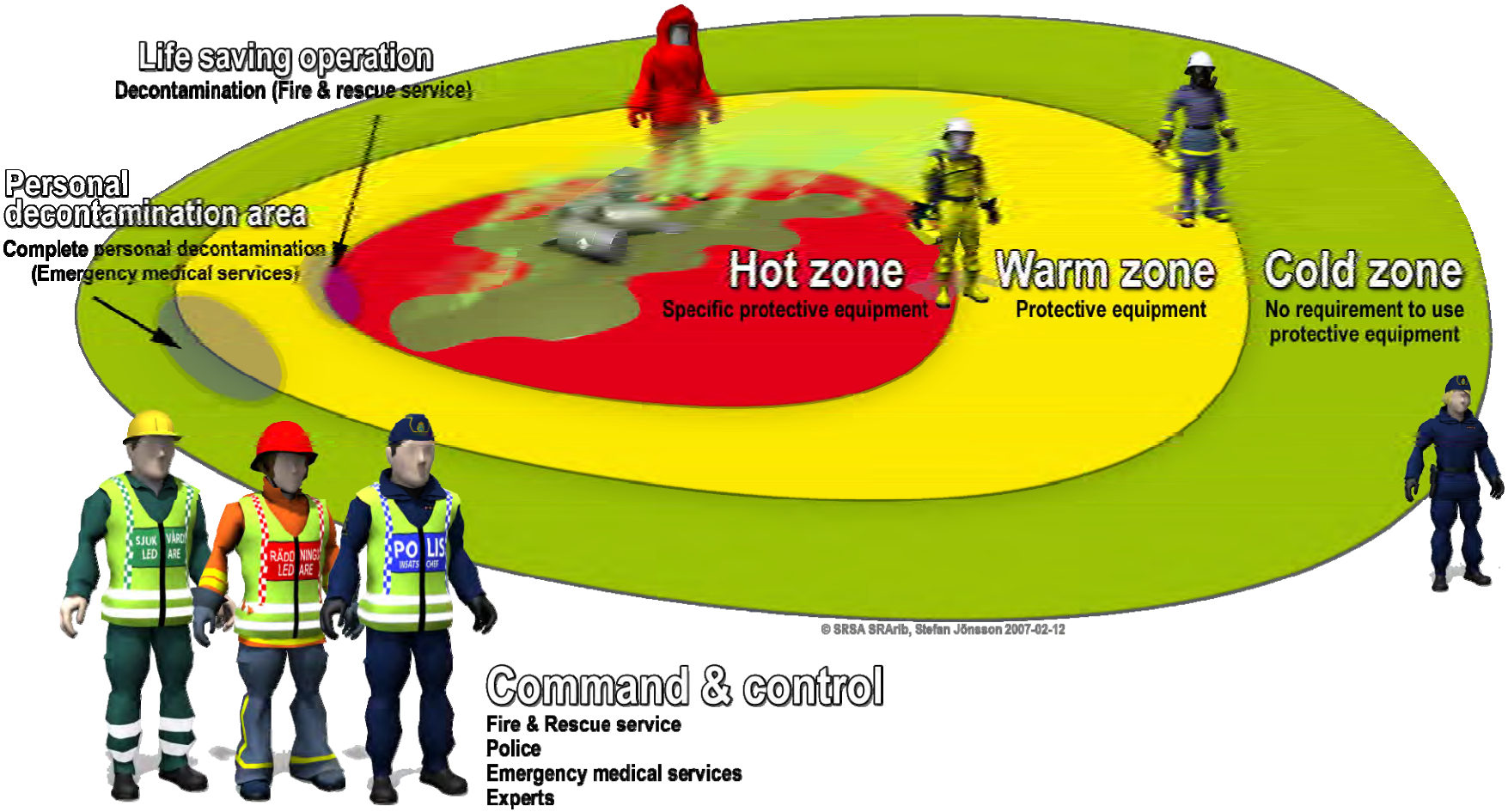
Improved competence

A train the trainers concept

- A two-day instructor’s course
- Approximately 600 instructors
- A one-day basic course at local level
- Webpage for information and further training

RÄDDNINGS VERKET
Swedish Rescue Services Agency

Cooperation and coordination



RÄDDNINGS VERKET
Swedish Rescue Services Agency

Further development

Cooperation between government agencies

- Detection
- Decontamination
- Medical decision support systems
- Evaluation of PPE

RÄDDNINGS VERKET
Swedish Rescue Services Agency

Detection

Common unified strategy between agencies

Three levels of detection

- Initial detection capabilities (10 min)
- Advanced detection (30–60 min)
- Expert resources (1–6 hours)

Putting First Responders First

Cooperation in the field of CBRNE in Sweden

Thank you for your attention!

Ivar Rönnbäck
Deputy Director General

ivar.ronnback.@srv.se

RÄDDNINGS VERKET
Swedish Rescue Services Agency

Secure Against Fire and Embers (SAFE)

Christopher Doyle
Director
Infrastructure Geophysical Division
Science and Technology Directorate
Department of Homeland Security

"Putting First Responders First"

Homeland Security
Science & Technology

The New York Times

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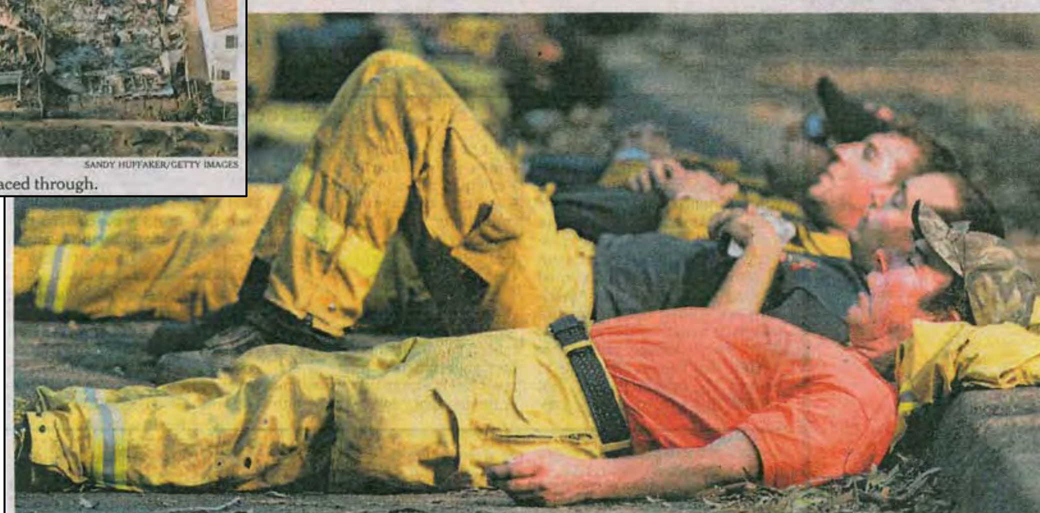
SANDY HUFFAKER/GETTY IMAGES

SAN DIEGO A neighborhood in the Rancho Bernardo section was left in ruins yesterday after a fire raced through.



KENT PORTER/THE PRESS DEMOCRAT

Homeland Security

Secure Against Fires and Embers

- DHS Science and Technology (SAFE Team)
  - Infrastructure and Geophysical Division
  - TechSolutions
  - Office of National Laboratories
- DHS Wildfire response elements
  - FEMA
  - US Fire Administration
- Other Federal technology assets
  - DOE National Laboratories / S&T Laboratories
  - TSWG
  - NIST
  - US Forest Service

Homeland Security

Southern California Wildfires

- Unlike 2003 wildfires, with 13 fires in 8 days; 2007 23 fires in 24 hours
- Urban conflagration problem
  - rapid fire spread between buildings
- Building code changes after 2003 fires taking effect January 2008
- Seven counties covered under the Governor's Proclamation
- Presidential Declaration FEMA-1721-DR
- Largest mass evacuation in California history.

Homeland Security

Current Protection Technologies

Foams and gels

- Rely upon water entrapment for thermal protection
- Break down in extreme heat
- Not always easy to apply
- Can wash off due to rain
- Fire trucks can carry enough for one structure only

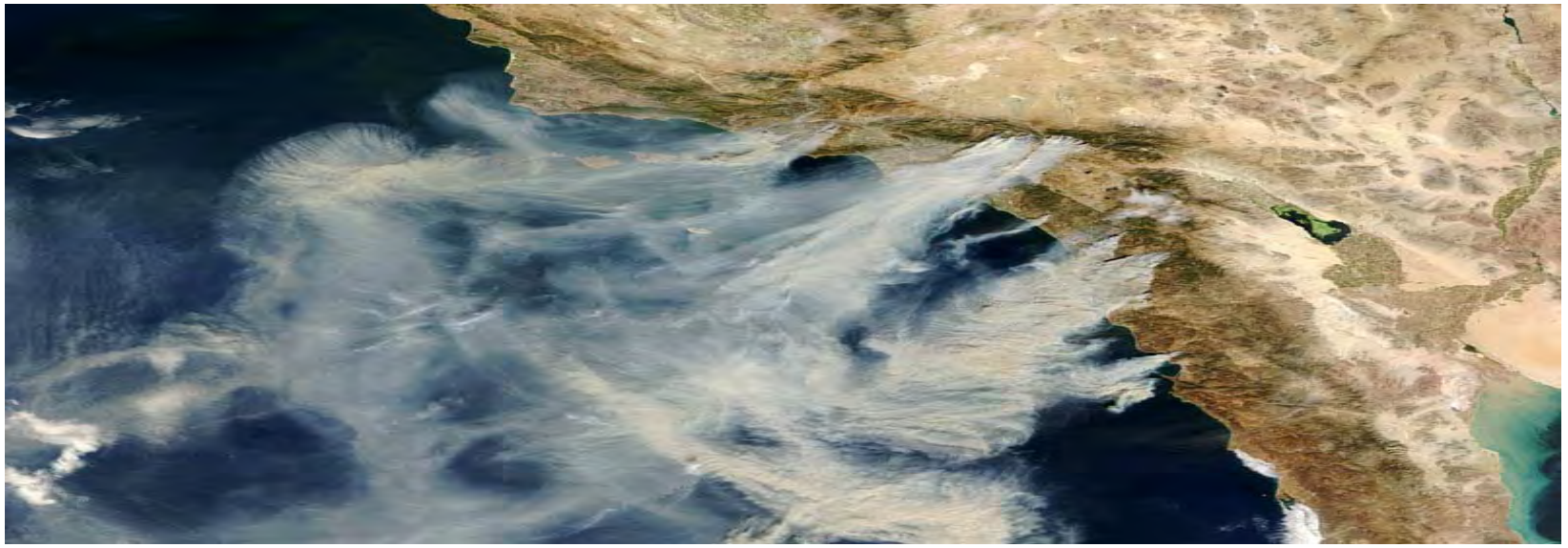
Building Shelters

- Labor and time intensive

Homeland Security

Fact Finding Mission (November 1-2)

- California State Operations Center, Sacramento
- Joint Field Office, Pasadena
- Multi-agency Coordination Center, Riverside
- Santiago Fire, Orange County



Homeland Security

Preliminary Findings

- Improve practicality, logistical requirements, and affordability of protection technologies
- Develop low cost systems to protect legacy homes
- Need to improve situational awareness and accountability across levels of government and between disciplines
- Need for an ember test facility that can reproduce comparable winds
- Research in expeditious erosion mitigation science and technology to prevent cascading disasters

Homeland Security

Homeland Security

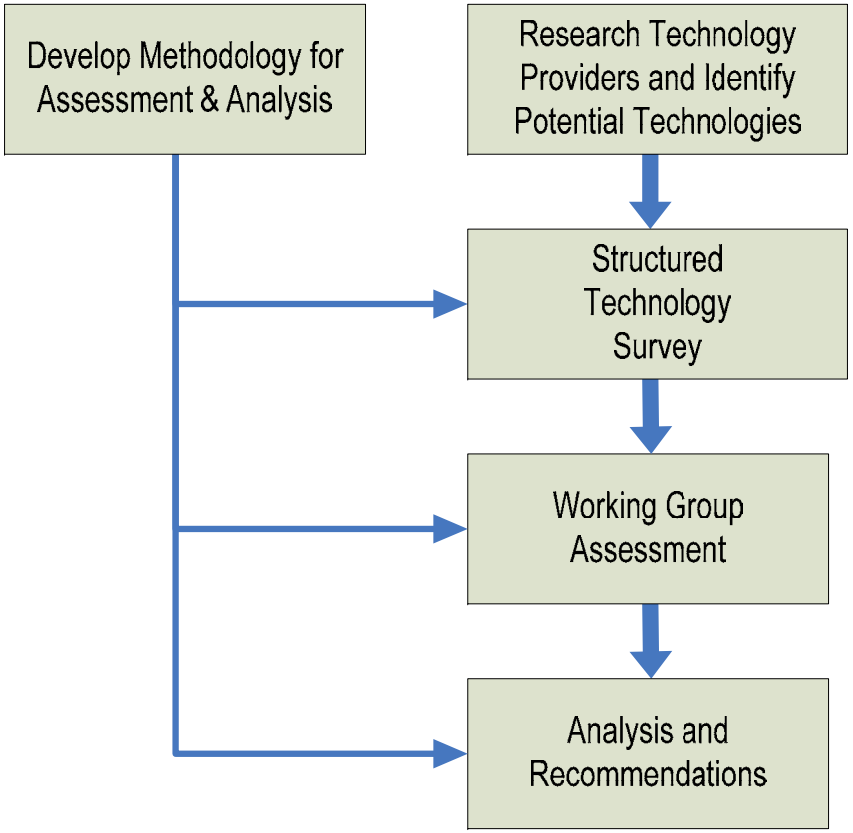
Homeland Security

Homeland Security

HSI Analysis of Potential Technologies

Overall Objective: To provide analytic support for S&T Project SAFE Working Group

- **Technology Survey:** HSI to describe technology by specific analytic categories
- **Working Group Assessment:** HSI to build assessment tools (organized by survey category) to assist the Working Group's assessment of technologies
- **Analysis and Recommendations:** Based on Working Group assessments HSI to create assessments, analyses and recommendations for support of technologies



Homeland Security

HSI

Technology Survey: Schematic of Categorization & Assessment

- **Mission Phase:**
  - Prevent
  - Protect
  - Respond
  - Recover
  - Information Sharing

Technology Survey will also categorize by self-reported criteria that will subsequently be evaluated by the Project SAFE Working Group. Examples are technology maturity (TRL), anticipated cost, deployment feasibility, schedule to deployment.

- **Fire Functions:**
  - Sensors & Surveillance
  - Remote Imagery
  - Fire Detection & Monitoring
  - Urban Codes/Zoning
  - Structure Protection
  - Evacuation & Rescue
  - Fire Fighting Equipment
  - Responder Safety
  - Equipment Testing
  - Post Fire Remediation
  - Post Fire Analysis & Lessons Learned
  - Situation Awareness/COP
  - Command & Control
  - Planning/Fire Behavior Modeling

Homeland Security

Homeland Security

Homeland Security

Science and Technology

Homeland Security

Stakeholders Conference

January 14-17, 2008

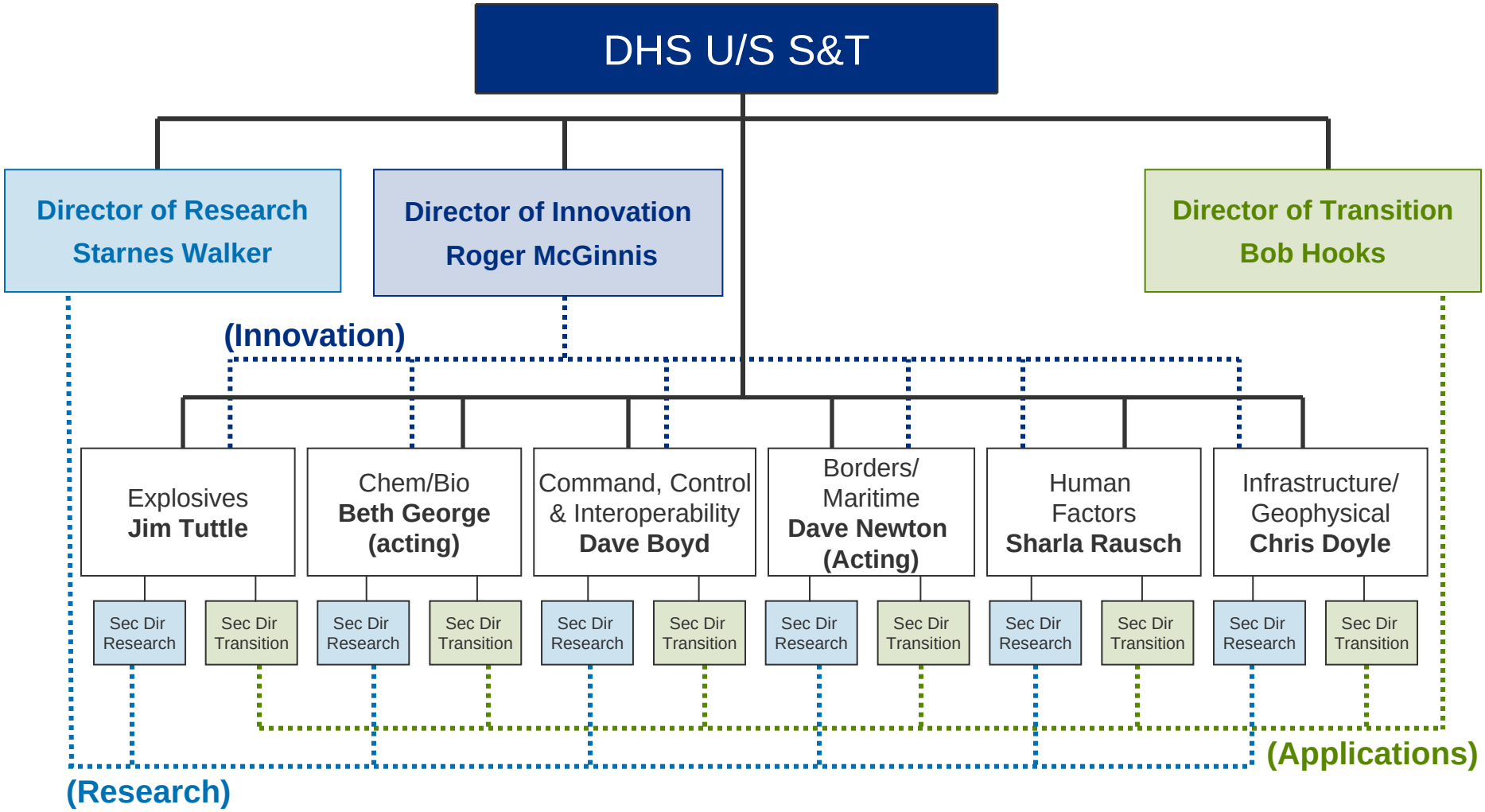
S&T Portfolio Director's Panel

Mr. Robert Hooks, Director of Transition
Dr. Roger D. McGinnis, Sr., Director of Innovation/HSARPA
Dr. Starnes Walker, Director of Research

From Science and Technology… Security and Trust

Homeland Security

S&T Organization



Homeland Security

DHS S&T Investment Portfolio

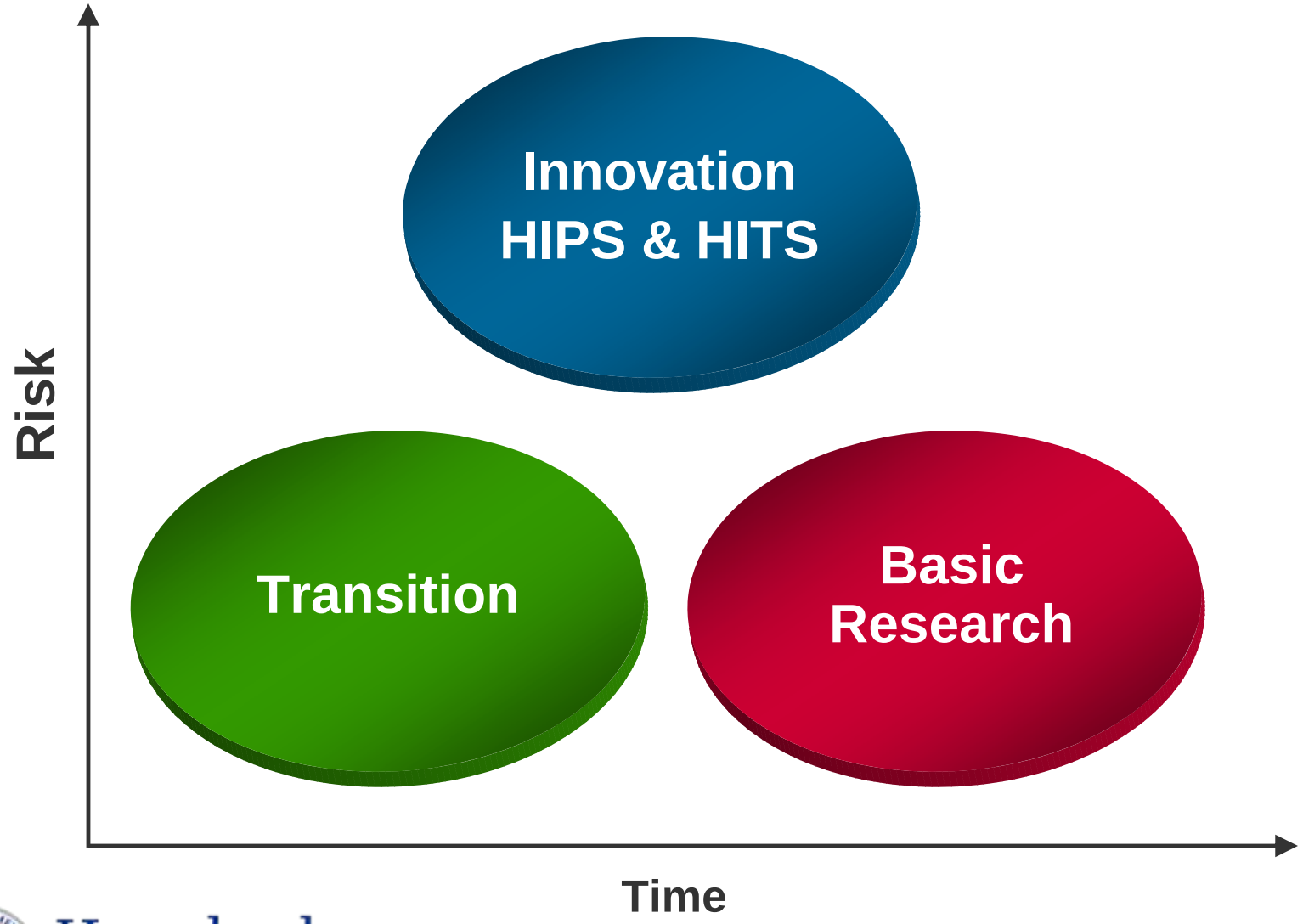
Balance of Risk, Cost, Impact, and Time to Delivery

Product Transition (0-3 yrs) ▪ **Focused on delivering near-term products/enhancements to acquisition** ▪ **Customer IPT controlled** ▪ **Cost, schedule, capability metrics**	**Innovative Capabilities (2-5 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 ▪ Gov't lab discovery and invention	**Other Spending (0-8+ yrs)** ▪ DHS Laboratory Operations ▪ Test & Evaluation and Standards ▪ Management and Admin

Customer Focused, Output Oriented

Homeland Security

Complimentary Research Objectives

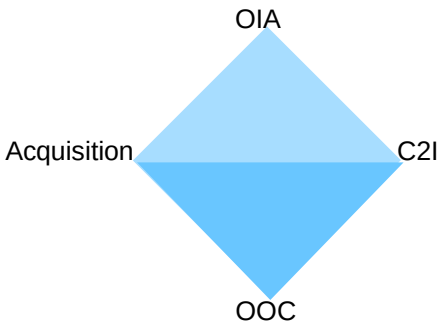


Homeland Security

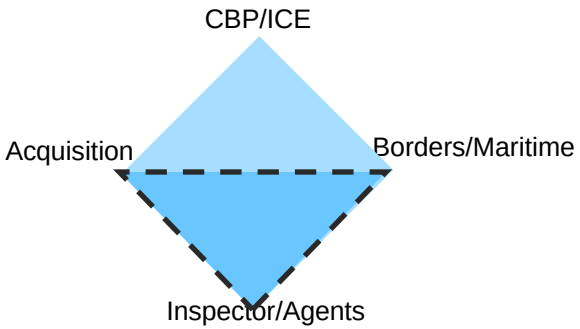
DHS Requirements/Capability Capstone IPTs

DHS S&T Product – "Enabling Homeland Capabilities" (EHCs)

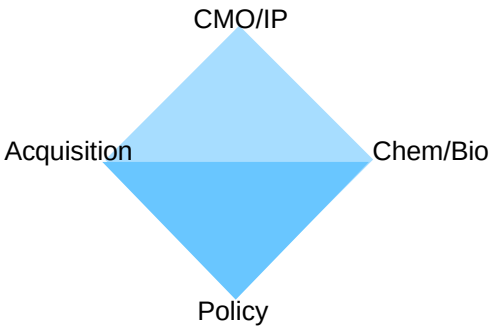
Information Sharing/Mgmt



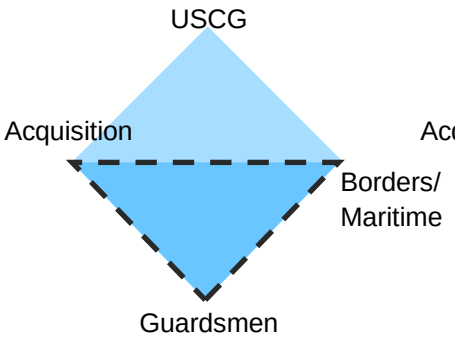
Border Security



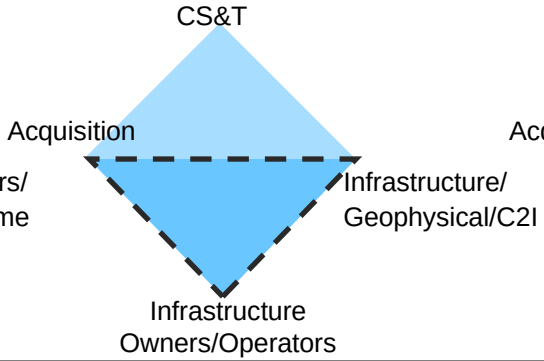
Chem/Bio Defense



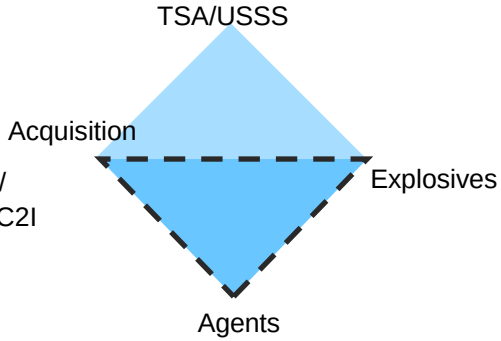
Maritime Security



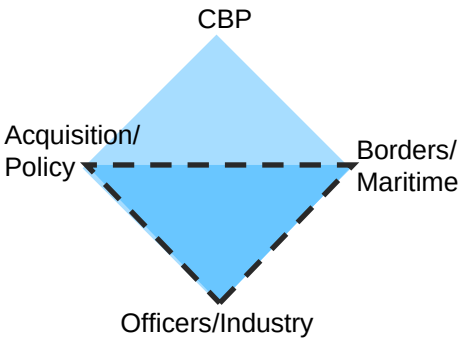
Cyber Security



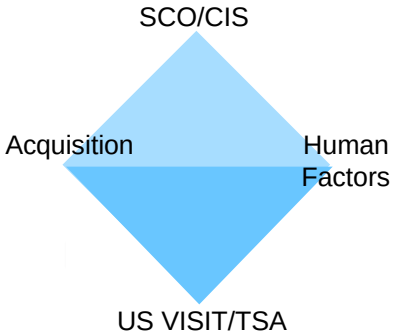
Explosive Prevention



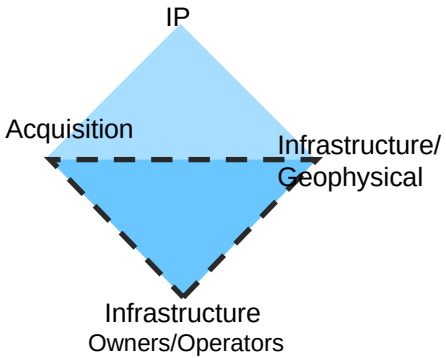
Cargo Security



People Screening

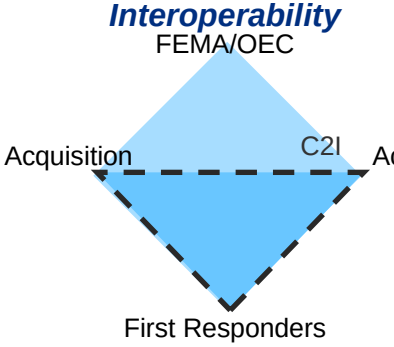


Infrastructure Protection

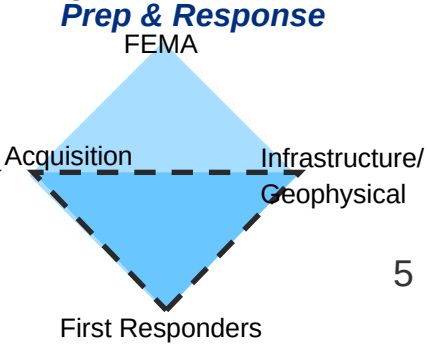


Incident Management

Interoperability

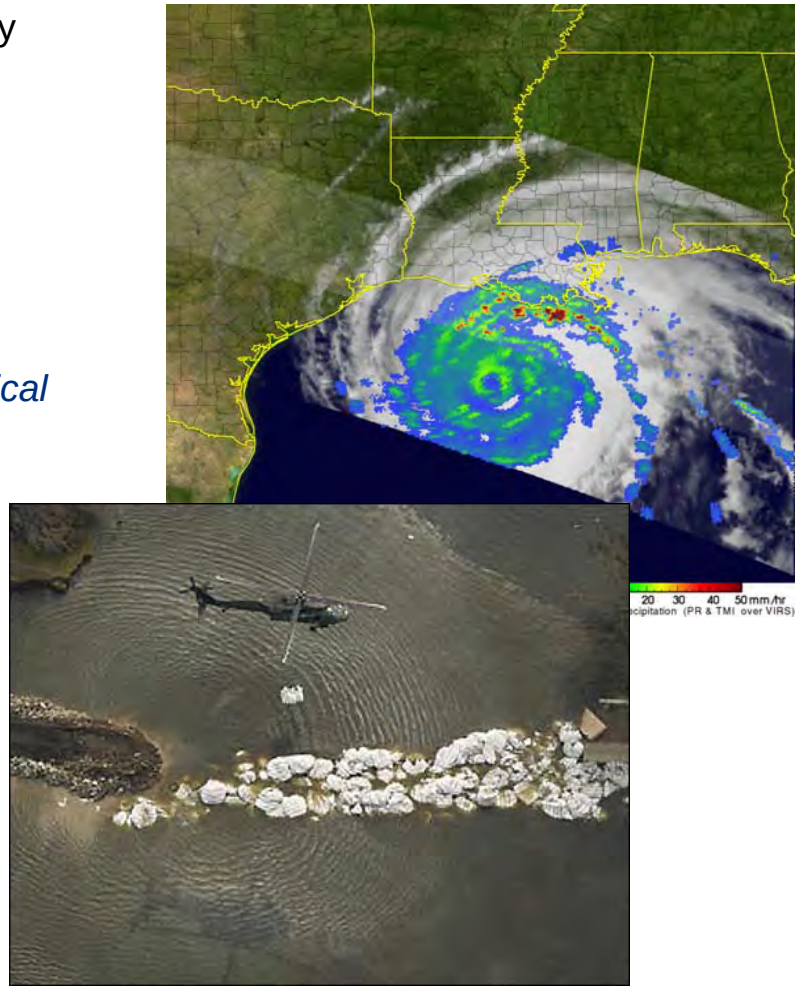


Prep & Response



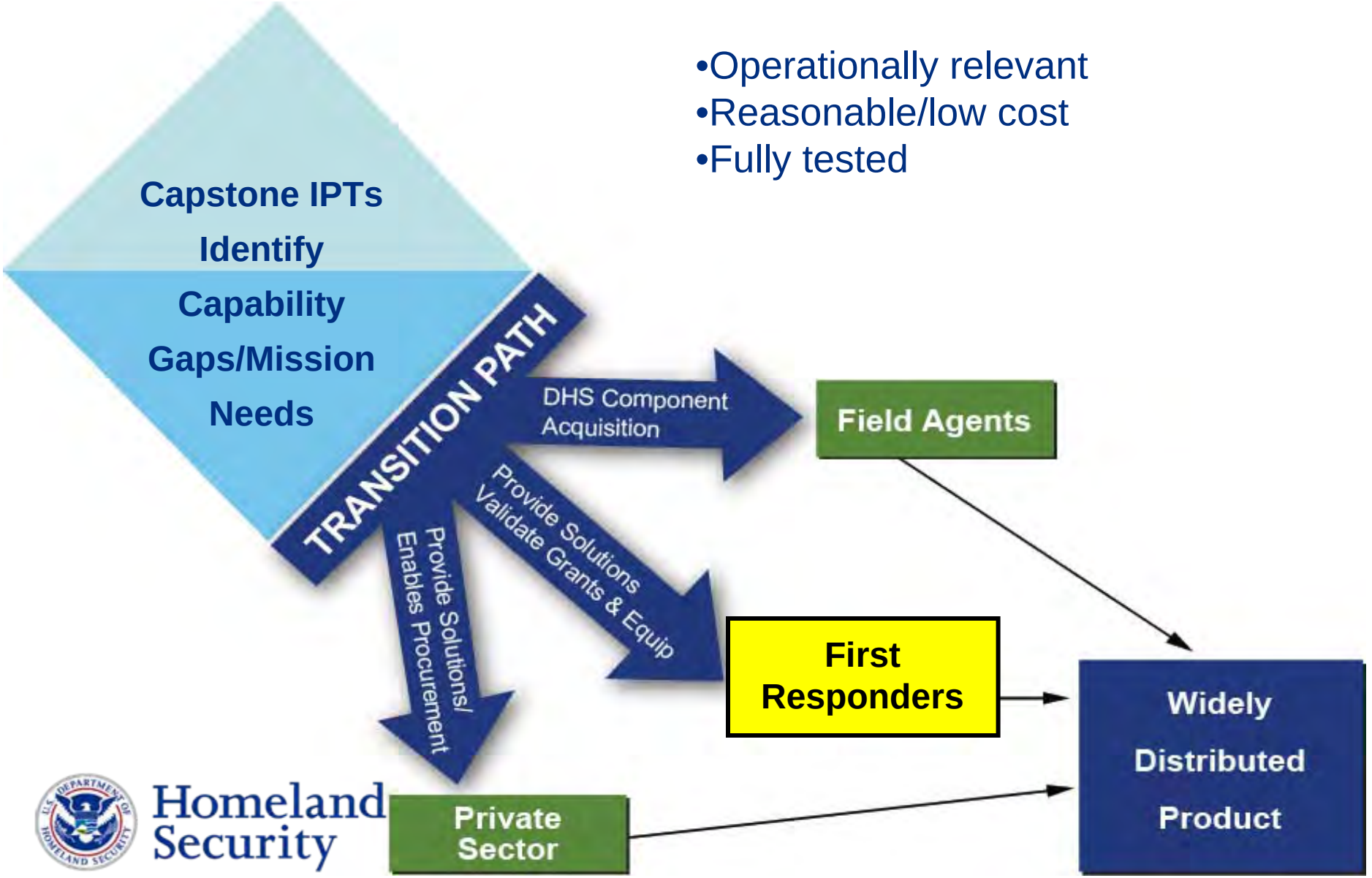
Incident Management: Representative Technology Needs

- Integrated Modeling, Mapping and Simulation capability *(IP/Geophysical Division)*
- Personnel Monitoring (Emergency Responder Locator System) capability *(IP/Geophysical Division)*
- Personnel Monitoring (Physiological Monitoring of Firefighters) capability *(IP/Geophysical Division)*
- Incident Management Enterprise System *(IP/Geophysical Division)*
- Logistics management tool *(IP/Geophysical Division)*



Transition Approaches to Meet End-User Needs

- Operationally relevant
- Reasonable/low cost
- Fully tested



DHS S&T Investment Portfolio

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Basic Research (>8 yrs) ▪ Enables future paradigm changes ▪ University fundamental research ▪ Gov't lab discovery and invention	**Other Spending (0-8+ yrs)** ▪ DHS Laboratory Operations ▪ Test & Evaluation and Standards ▪ Management and Admin

Customer Focused, Output Oriented

Homeland Security

"A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents die and a new generation grows up that is familiar with it."

- Max Planck

Homeland Security

HIPS and HITS

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

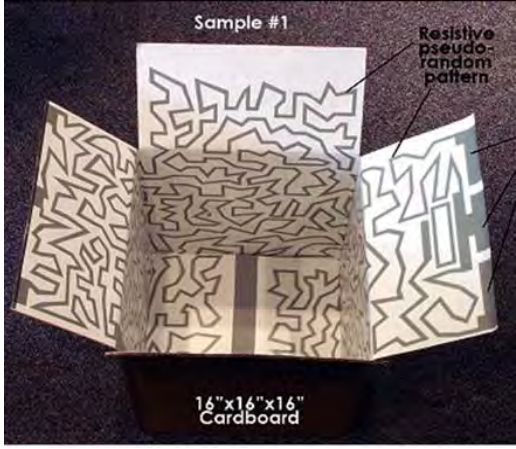
High Impact Technology Solutions (HITS), which are designed to provide proof-of-concept answers within one to three years that could result in high-payoff technology breakthroughs. These projects have considerable risk of failure, however they also offer the potential for significant gains in capability

Homeland Security

Multi-Sensor Hostile Intent Behavior Detection systems to increase the reliability of individuals recommended for secondary screening without violating privacy?

Homeland Security

DHS SBIR Program



- **Increases participation of innovative and creative small businesses in Federal research and development programs**
- **Challenges small businesses to bring innovative homeland security solutions to reality**
- **Focuses on near-term commercialization and delivery of operational prototypes**
- **Over 324 contracts awarded**

Homeland Security

Leverages entrepreneurial spirit and innovation of small businesses.

DHS S&T Investment Portfolio

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

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Customer Focused, Output Oriented

Homeland Security

Why DHS S&T Basic Research?

- Develop fundamental scientific understanding or phenomenology
- Respond to future threats where current or near term technical solutions are not available.
- Quickly tap into areas of basic research that could be exploited for homeland security solutions.
- Cost Avoidance

Homeland Security

DHS S&T Director of Research Responsibilities

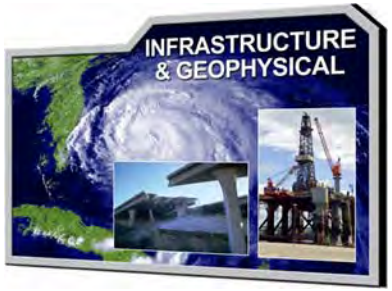
- Planning, programming, budgeting, and oversight of the DHS S&T Basic Research Program
- Encourage multi-disciplinary, cross cutting initiatives between laboratories / universities / industry
- Establishes Basic Research Program metrics / assesses program performance
- Oversees programs and operation of the University Centers of Excellence, Scholars and Fellowship programs, and DHS S&T In House labs
- Provides guidance for DHS S&T initiatives at Historically Black Colleges / Universities / Minority Institutions / Tribal Colleges
- Advises the DHS S&T Under Secretary on Science and Technology programs and issues

Homeland Security

Basic Research Portfolio

Discovery and Invention to Enable Future Capabilities

- Brings the capabilities, talent and resources of the Homeland Security Centers of Excellence, DOE National Laboratories and DHS Labs to bear to address the long-term R&D needs for DHS in sciences of enduring relevance
- This type of focused, protracted research investment has potential to lead to paradigm shifts in the nation's homeland security capabilities



Homeland Security

Managed Technology Progression

DHS Unique/Essential

- Address primary DHS interest areas in S&T
- Opportunity-based investment
- High impacts/surprises
- Develop/maintain core Homeland Security S&T competencies

Support to Acquisition (EHCs)

- Program of Record Improvements
- Heavily requirements-based
- Generally evolutionary – Deliverable product to customer

Leap-ahead First Responder Capability

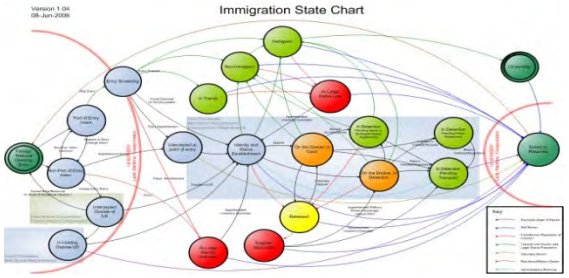
- Concept & need driven
- Transformational
- DHS Leadership priorities

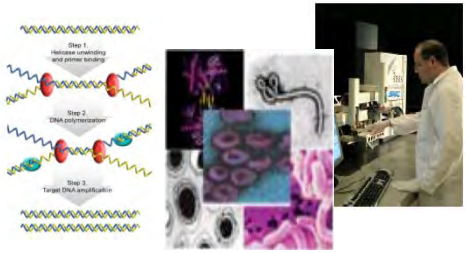
Homeland Security

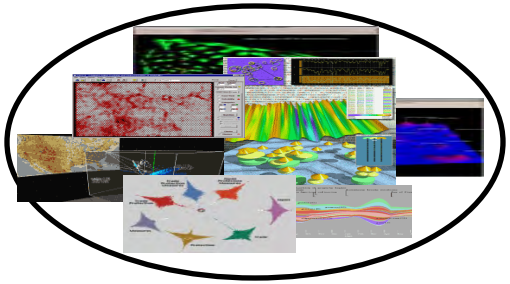
Enabling Homeland Capabilities" (EHCs)

Examples of Basic Research Activities

- Modeling & Simulation tools to capture complex relationships between immigration and border security for strategic planning
- Assays methods for next-generation biothreat detectors







- Studies of radicalization development within individuals, groups, societies; roles of governments, civic organizations, and communities
- Carbon Materials for Blast Mitigation and Explosive Device Containment

- Information analysis and visualization tools for threat vulnerability, assessment, and response
- Fundamentals of deposition, removal and transport of explosive particles

Homeland Security

New Initiative - Domestic CIED

- Standoff detection on persons
- System solution for detection in baggage
- Identify individuals with hostile intent
- Homemade or novel explosives
- Novel explosives characterization
- Detect VBIED / large threat mass

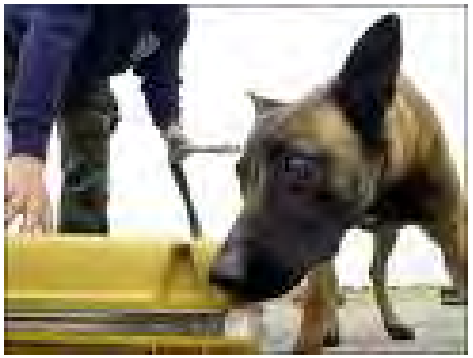
- Operational Protocols for training, techniques & tactics
- Blast mitigation in the transit environment
- Response: Assessment / Render Safe / Neutralize explosive threats
- Mitigation of standoff ballistic & guided projectiles in the transportation environment
- Canine explosive detection optimization

Homeland Security

Exploring New Methods to Train Canines

Thrust – To provide a deeper understanding of the potential contributions that trained canines can contribute in support of those on the front lines of homeland security.

- Researching technologies and methods aimed at improving the performance of working dogs, increasing their results/yields, and extending their working life
- Currently being investigated by DHS S&T and our partners:
  - Best Practices for breeding and training programs
  - Genetic markers for identifying most successful breeds
  - Enhancing accuracy of canine behavioral filters to guide their placement in areas that are best suited to their traits.



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www.hsarpabaa.com/

For information on S&T Broad Agency Announcements

www.FedBizOpps.gov

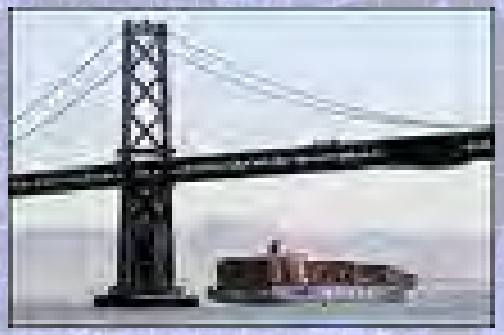
Federal Business Opportunities

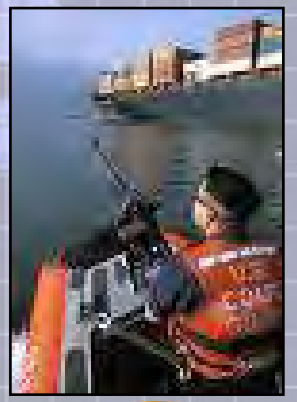
Homeland Security

Homeland Security

CAPT Paul Wiedenhoeft

Commander, Sector Los Angeles – Long Beach





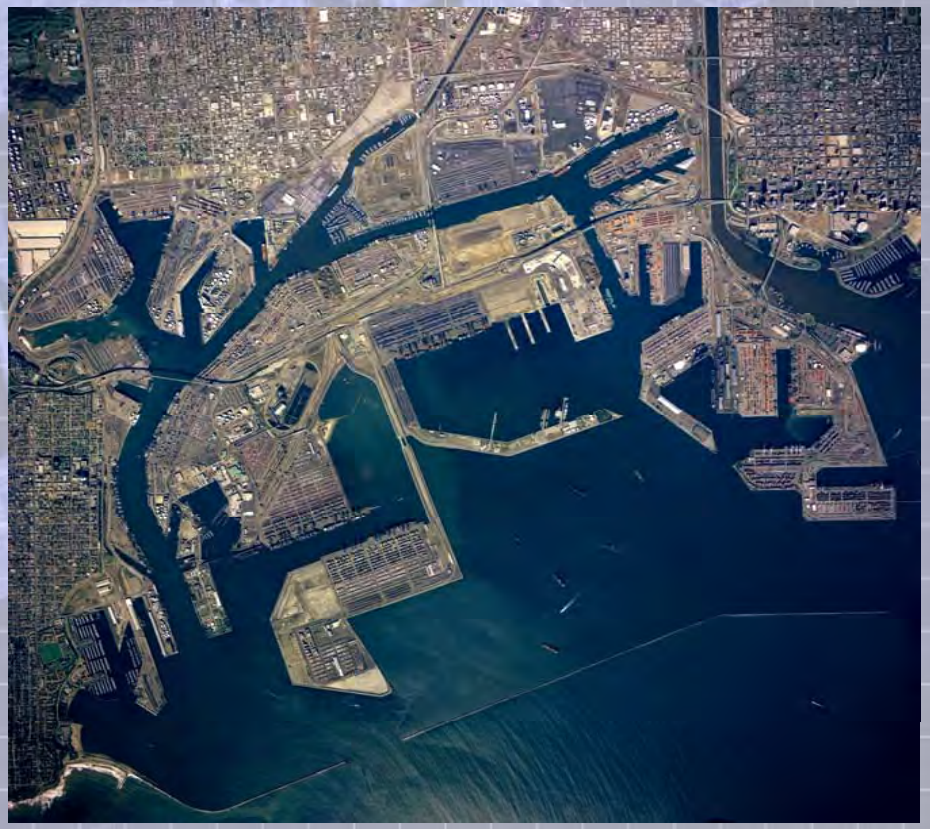
Today's Objectives

- Quick overview of the USCG / Port Activities
- "What keeps me up at night"
  - Communication
  - Security
  - Maritime Domain Awareness
- Future plans for Sector Los Angeles – Long Beach

Homeland Security

Ports of Los Angeles & Long Beach

- Nation's largest port complex
- World's 5th largest port complex
- Over $235 billion in annual trade
- 15.5 million containers annually
- 6,000 vessel arrivals annually
- 43 % of containers entering U.S.
- 235 million metric tons of cargo
- 1 million passengers
- 500,000 autos
- 50% of California's oil (370M BBLS/YR)
- 3 million jobs nationwide



A Typical Day

Los Angeles & Long Beach Seaports

- 16 Vessel Arrivals
- 13,000 Containers
- 33.6 Million Gallons Petroleum Products
- $520M worth of cargo
- 2,800 Cruise / Ferry Passengers

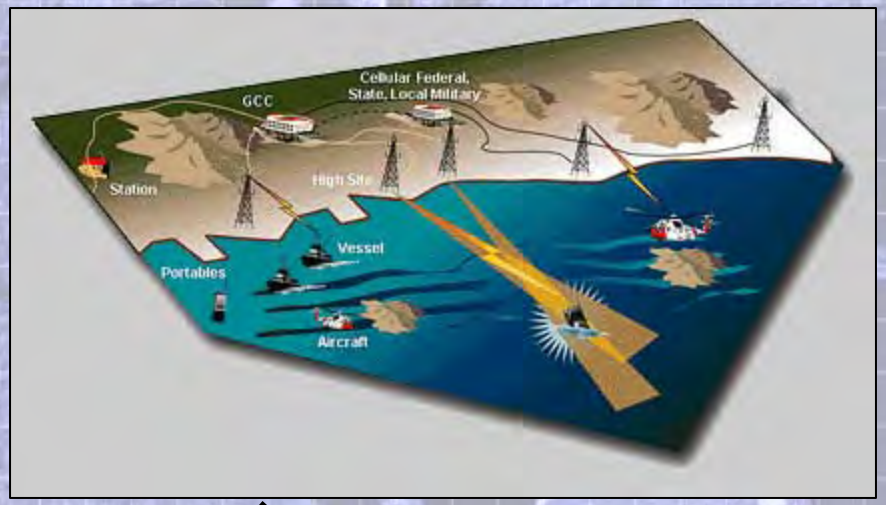
Communications

- ✓ VHF
- ✓ UHF
- ✓ SATCOM
- ✓ HF

Homeland Security

Communication Enhancements

Rescue 21



Communication Desktop
- Identifies call source and strength
- Access radios, telephones, intercoms
- Conference formation
- Access recent calls

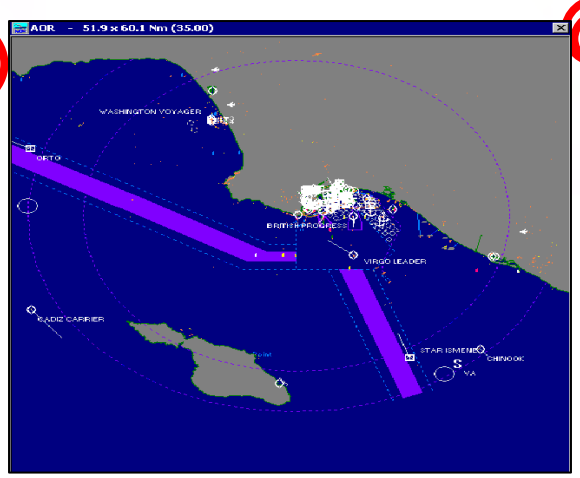
Single integrated interface supporting:
- Communications
- Direction Finding,
- Marine Broadcast,
- DSC

Integrated regional display
- Raster Nautical Charts
- LOBs and Fixes
- DSC Positions

Regional Display Control
- Time bar identifies time range of interest
- Pan and scale identify area of interest DVD like replay of audio and data
- Freeze an instant in time for close analysis

Homeland Security

Security – National Automated Identification System (NAIS)



Automated Identification System (AIS)

Security – Facilities

(Transportation Worker Identification Credential - TWIC)

- 57 MTSA-Regulated Facilities
  - ✓ 13 Container Terminals
  - ✓ 17 Bulk Liquid Terminals
  - ✓ 2 Cruise Ship Terminals
  - ✓ 3 RO/RO Terminals
  - ✓ 1 Break Bulk
  - ✓ 21 Other Terminals (Chemical, Lumber etc.)

Maritime Domain Awareness

Global Maritime Intelligence

+

Global Maritime Situational Awareness

MDA

Better understanding of Operational Environment

- ✓ Collection
- ✓ Fusion
- ✓ Analysis
- ✓ Dissemination

Homeland Security

MDA Enhancements

Command 21

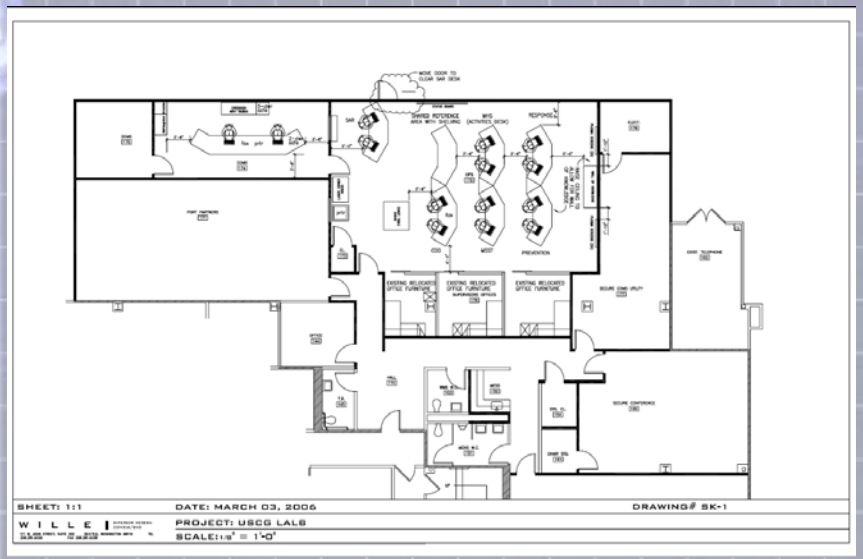
- ✓ Surveillance
- ✓ Decision & Mission Support
- ✓ Multi-agency collaboration

1. C4ISR
2. Increased sensors
3. Historical data
4. Common operational picture (COP)

Homeland Security

Future Plans
CG Sector Los Angeles Long Beach

- ✓ SCC expansion
- ✓ Continue to conduct joint exercises & training
- ✓ Upgrade communications equipment
- ✓ Integrate port sensor info
- ✓ DHS S&T Test bed



Security

Expanding the RKB

George Ryan
Director
Test & Evaluation and Standards
Science and Technology Directorate
Department of Homeland Security

"Putting First Responders First"

Homeland Security
Science & Technology

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"Created to provide Emergency Responders, purchasers, and planners with a trusted, integrated, on-line source of information on products, standards, certifications, grants, and other equipment-related information."

Partnerships

View all RKB Partners

NAEMT National Association of Emergency Medical Technicians
http://www.naemt.org/

RKB Recommends

DHS S&T Tech Solutions

The goal of TechSolutions is to field technologies that meet 80% of the operational requirement, in a 12 to 15 month time frame, at a cost commensurate with the proposal (but less than $1 million per project). Goals will be accomplished through rapid prototyping and the identification of existing technologies that satisfy identified requirements.

Grants >> DHS S&T Tech Solutions

Other Recommendations

Decontamination Efficacy Matrix

RKB Today

Thursday, Dec 20, 2007

Receive priority news via Email

- NEW! Comments Deadline Extended for Proposed Practice Standard for Radiological Emergency Response
  December 18, 2007
- NEW! Proposed Practice Standard for Radiological Emergency Response Now Available for Comment
  December 14, 2007
- RKB Releases New Product Comparison Table Feature
  November 27, 2007
- RKB System Maintenance Sunday between 8am and 12pm EST
  November 15, 2007
- Personal Protective Equipment Conference on November 28-29, 2007
  November 9, 2007

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  - Communications (412)
  - Detection (744)
  - Decontamination (259)
  - Medical (318)
  - Default (143)
  - Explosive Detection (50)

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Title

3M™ Canister CP3N - 3M
Tear gas canister - CP3N Canister offers protection for CS/ CN/ P100.
CBRN

3M™ CBRN PAPR System with Hood - 3M
NIOSH CBRN approved PAPR with butyl rubber hood.
CBRN

3M™ FR-15-CBRN Canister - 3M
This canister is designed for first responder applications commonly found in law enforcement, fire and emergency response (paramedics) environments. 40mm DIN thread. 5 year shelf life.
CBRN

3M™ FR-7800B Full Facepiece - 3M
The 3M™ Full Facepiece FR-7800B is NIOSH approved with the 3M™ Canister FR-15-CBRN for use in CBRN environments (Cap 1). Also approved with the 3M™ Canister CP3N (CS/CN/P100) for tear gas exposure.
CBRN

3M™ FR-M40B Full Face Respirator - 3M
Assembly includes 3M™ Full Facepiece FR-M40, Second Skin FR-M40-5 (small) or Second Skin FR-M40-5 (medium/large) and Eyepiece Outserts, Clear FR-M40-1.
CBRN

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Title

Reveal CT-80 – Reveal Imaging Technology, Inc
First explosive detection system designed for 100% checked baggage inspection.

IONSCAN 400B – Smiths Detection
Desktop explosives or narcotics trace detector

L-3 eXaminer 6000 – L-3
Explosive detection system providing multiple computer tomography (CT) images in one pass.

Itemiser - GE
Explosive and narcotics detection in a desktop system.

GE CTX 5500 DS - GE
Uses technology derived from medical Computed Tomography (CT) to help locate and identify explosive devices concealed in checked baggage .

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Products

Explosive Detection \ Trace & Bulk Detection

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CT-80

Information Provided By: Reveal Imaging Technologies
Manufacturer: Reveal Imaging Technologies, Inc.
Detector Technology: X-Ray
Model Number: 80
Part Number: 80
National Stock Number: 80
Description:
The CT-80 utilizes Reveal's proprietary Dual Energy, Computed Tomography (CT) architecture. This is a unique approach to EDS design that enables full size checked baggage to be inspected in the smallest possible footprint. The Reveal CT-80's superior detection and false alarm performance is available for as little as one quarter the cost of traditional certified CT scanners.

Availability Date: Contact Company
MSRP: Contact Company
Length of Time Fielded: Contact Company
Current User/Period of Use: Contact Company

Information Provided By:
Reveal Imaging Technologies
201 Burlington Road
Bedford , MASSACHUSETTS 01730
UNITED STATES
781-276-8463
Email: nancy.norton@revealimaging.com

CT-80 X-Ray Security Screening System

Knowledge Links

Third Party Certification(s)
- TSA Certification for Reveal CT-80

Declaration(s) of Conformity
- None

Operational Assessment(s)
- None

Developmental Test(s)
- TSL Developmental Test of Reveal CT-80

Operational Test(s)
- TSA Operational Test of Reveal CT-80

Safety Test(s)
- CHDR 21 CFR 1020 Cabinet X-ray Systems
- CT-80 UL Approval
- CT-80 CE Approval
- CT-80 CSA Approval

SAFETY Act Designated and Certified Products
- The Support of Anti-terrorism by Fostering Effective Technologies Act of 2002 (SAFETY Act)

Capabilities and Limitations List
- Reveal CT-80 Capabilities and Limitations

Relevant Weblink(s)
- DHS Technical Resource for Incident Prevention (TRIPwire)

Certification

Reveal CT-80 is a TSA certified Explosive Detection System. Details of this certification can be obtained by calling XX.

Responder Knowledge Base - ISOARK Collapsible/Portable Negative Pressure Isolation System [Prod - Microsoft Internet Explorer

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Reveal CT-80

Developmental Testing

Reveal CT-80 was developmentally tested by the Transportation Security Laboratory. Details of this testing are classified and can be obtained by calling XX.

against contamination threats

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Reveal CT-80

Operational Testing

Reveal CT-80 was operationally tested by the Transportation Security Agency. Details of this testing are classified and can be obtained by calling XX.

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Reveal CT-80

Safety Testing

CE, UL, CSA approved

CDHR 21 CFR 1020.40 Cabinet X-ray Systems

Responder Knowledge Base - ISOARK Collapsible/Portable Negative Pressure Isolation System [Prod - Microsoft Internet Explorer

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