Opportunities for the Private Sector

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Science and Technology
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Homeland Security

Discussion Guide

- Overview of Department of Homeland Security
- Reasons to Partner with DHS-S&T
- Integrated Product Teams: IPTs
- Market Potential is Catalyst for Rapid New Product Development
- Safety Act Protection
- Tech Clearing House
- SBIR Opportunities
- Getting Involved
- Summary

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Homeland Security Mission

- Lead Unified National Effort to Secure America
- Prevent Terrorist Attacks Within the U.S.
- Respond to Threats and Hazards to the Nation
- Ensure Safe and Secure Borders
- Welcome Lawful Immigrants and Visitors
- Promote Free Flow of Commerce

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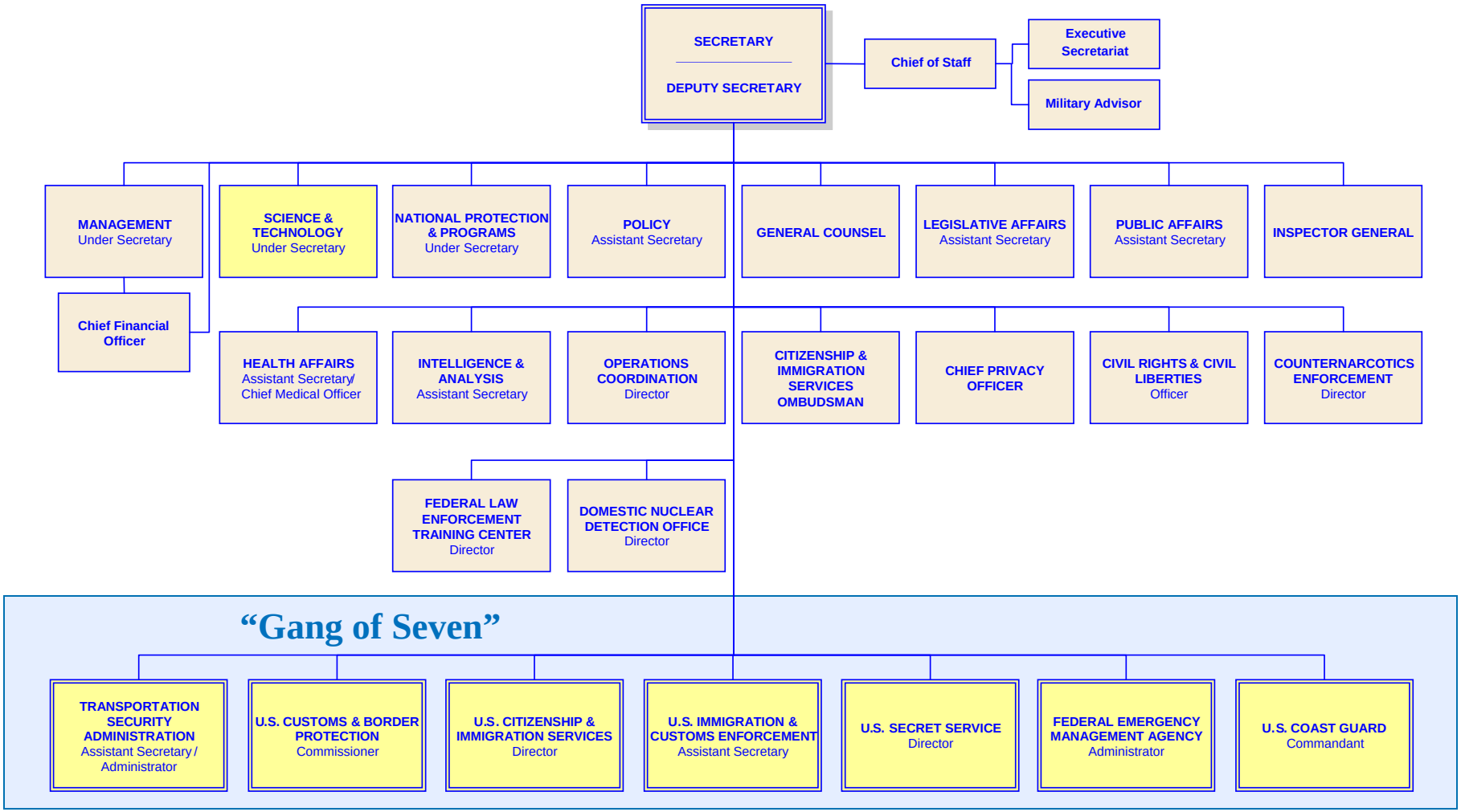
U.S. Department of Homeland Security



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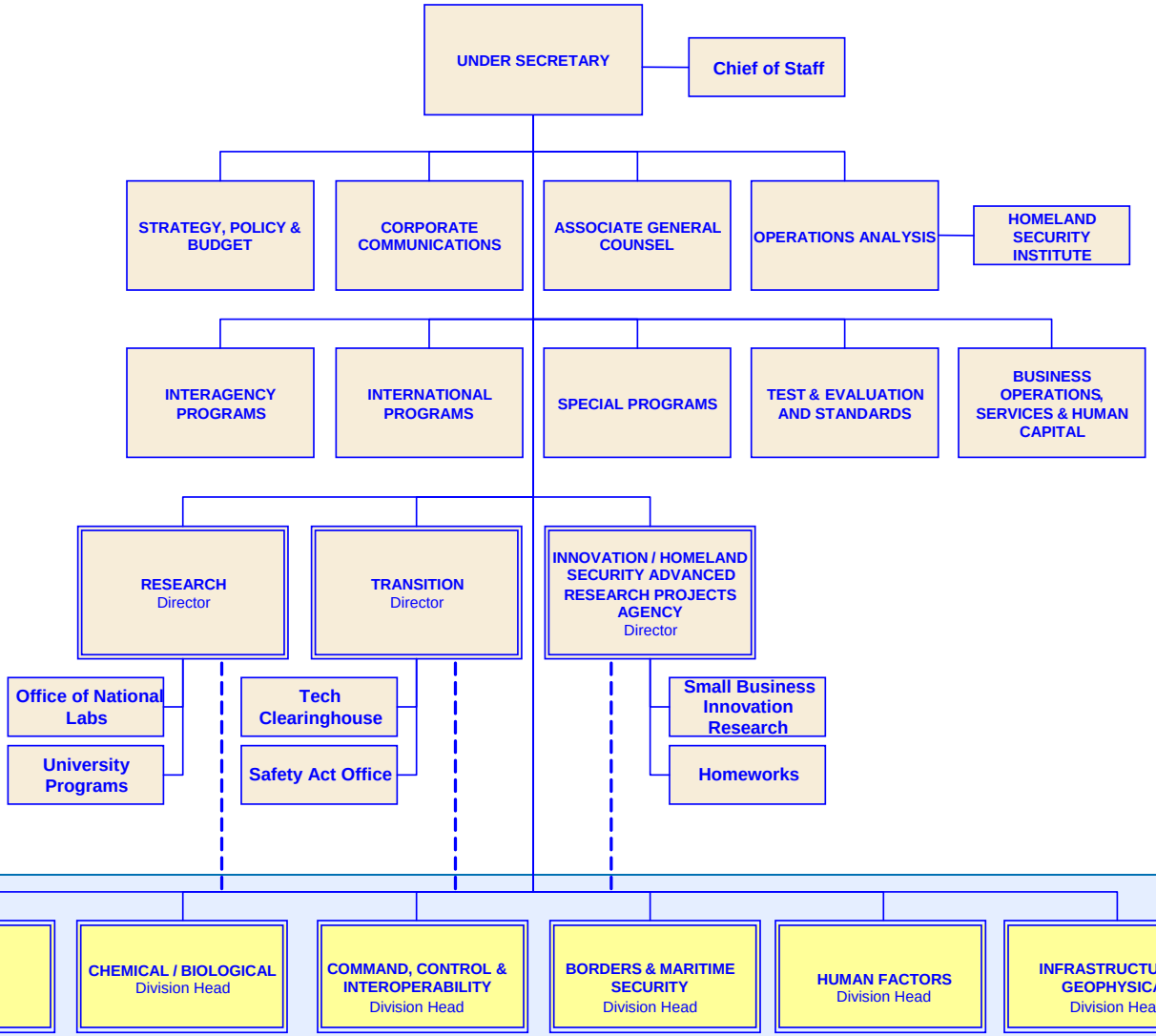
Office of the Under Secretary for Science and Technology



Divisions Drive S&T Interactions with Customers

S&T Goals

Consistent with the Homeland Security Act of 2002

- **Accelerate the delivery of enhanced technological capabilities** to meet the requirements and fill capability gaps to support DHS agencies in accomplishing their mission.
- Establish a lean and agile world-class S&T management team to deliver the technological advantage necessary to ensure DHS Agency mission success and prevent technological 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.

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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 • Gov't 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

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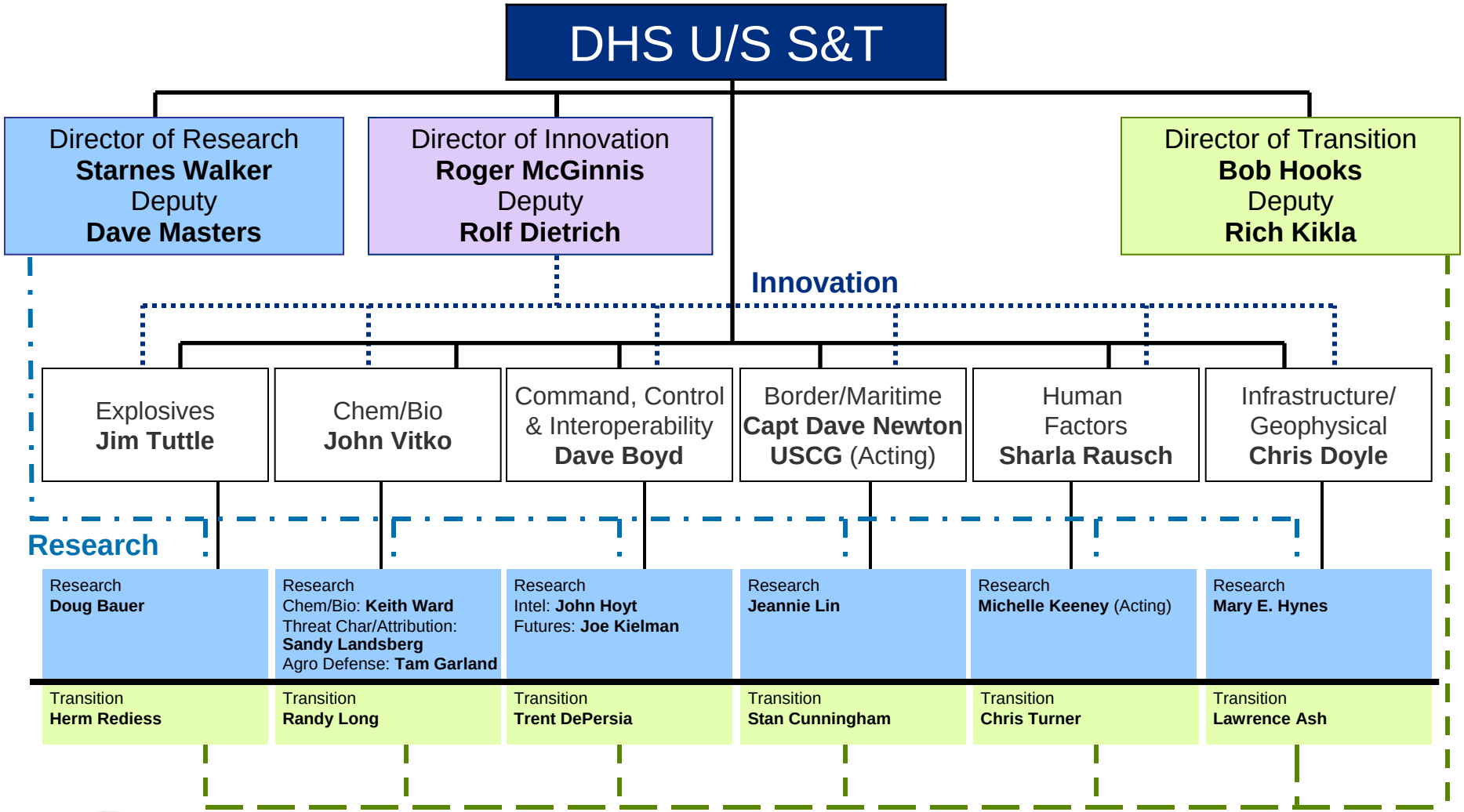
S&T Organization



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Three Step Approach:
Keep it Simple and Make it Easy

1. Develop Detailed Requirements And Relay Conservative Market Potential

2. Establish Strategic Partnerships
   - Business Case Information
   - Open Competition
   - Detailed Mutual Responsibilities

3. Deliver Products!

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Private Sector Outreach Process

Requirements Identification through Product Release

PHASES	Requirements Development	Market Assessment & Strategy	Open Competition	Product Development	Product Release, Marketing and/or Deployment
ACTIVITIES	• Prioritized capability gaps from Capstone IPTs • Identification of representatives of end users and end customers • Operational and technical requirements • Validation of price points • Technology Commercialization Agreement (TCA) between DHS S&T and its DHS customer • Project plan	• Market survey • Technology scan • Communications plan and implementation (public relations and marketing communications) • Technology Commercialization Plan (TCP) • Test and Evaluation Master Plan (TEMP) • Standards assessment and/or development by S&T • Grant program development by DHS customer	• CRADAs • BAAs • RFPs • RFQs • RFIs • MoUs / MoAs • Technology transfer licenses • OTAs • Influence the private sector	• New Product Development (NPD) process implemented by private sector partner(s) • Project reviews • Test and Evaluation	• Transition to manufacture • QC/QA • Deployment (to Federal users) or Marketing (to independent users) • Measure product effectiveness

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Legend: Black text = Government activities
Grey text = Private-sector activities

10 Reasons to Partner with DHS Science & Technology

Reasons:

Economics-based

Public Relations-based

Business Development-based

Strategic Marketing-based

Technical Resources-based

1. Access the Sizeable DHS Market and Ancillary Markets
2. Leverage the Financial Strength/Stability of DHS and off-set R&D costs through participation in mutually beneficial cost-sharing Programs
3. Utilize the SAFETY Act to gain liability protection and access DHS' array of PR and Market Communications services
4. Effectively reach the First Responders Market through FEMA-sponsored grant programs, the AEL (Approved Equipment List), other sponsored equipment lists and fast-track programs
5. Team with Science & Technology Personnel to leverage a vast Network of Laboratory Facilities for Technology and Product Development
6. Gain access to Test and Evaluation (T&E) Facilities for Product Development and actively participate in the generation of Standards, T&E methods and Regulations used at the tribal, local, state, and federal levels
7. Meet and establish Partnerships with others in the University, Business, and National Lab Communities
8. Potentially generate Licensing revenue and capture potential Derivative Product revenue
9. Leverage SBIRs, HITS and HIPS to gain experience with homeland security applications
10. Make a Real Difference by Developing Products to Defend the Homeland for Generations to come as well as gain recognition as a Corporate Citizen contributing to the Security of our Homeland

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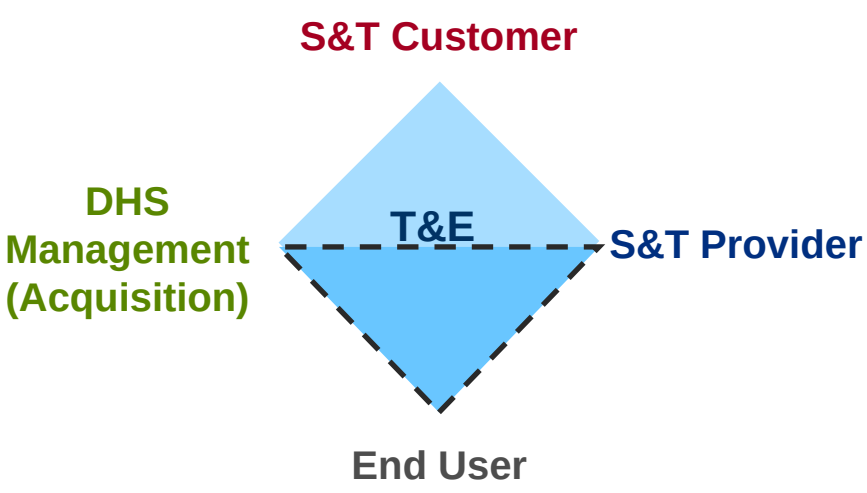
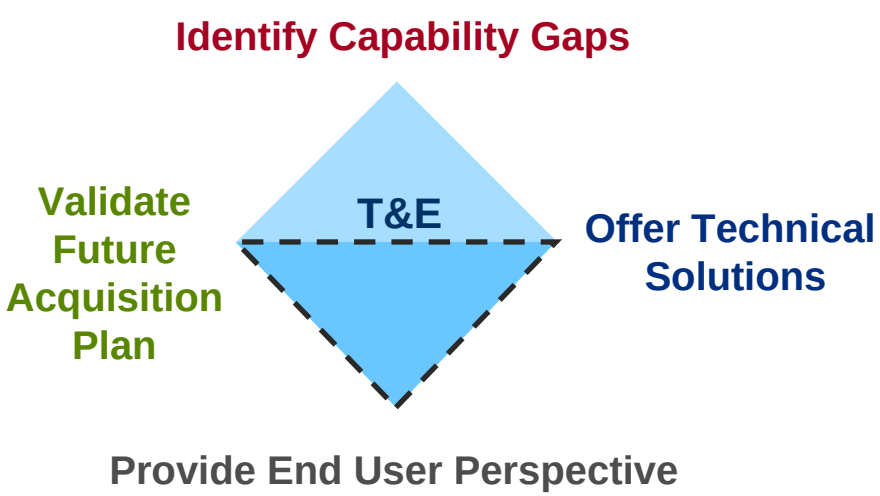
S&T Transition IPT Members and Function



- Industry Board of Directors Model
- Consensus-driven Process



End Result :
Prioritized Investments in S&T

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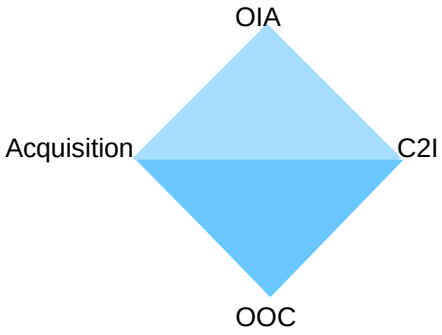
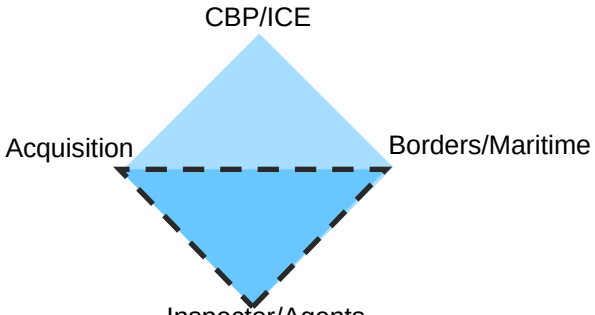
DHS Requirements/Capability Capstone IPTs

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

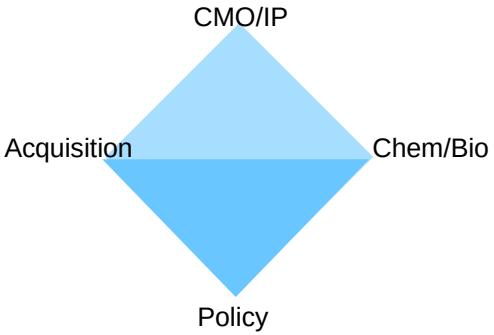
Information Sharing/Mgmt



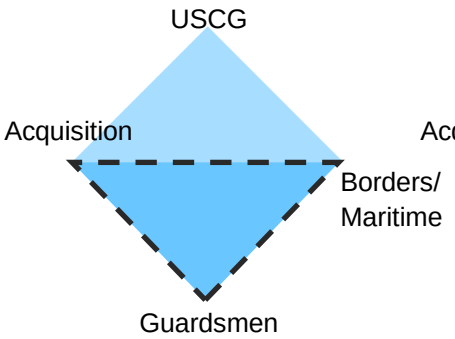
Border Security



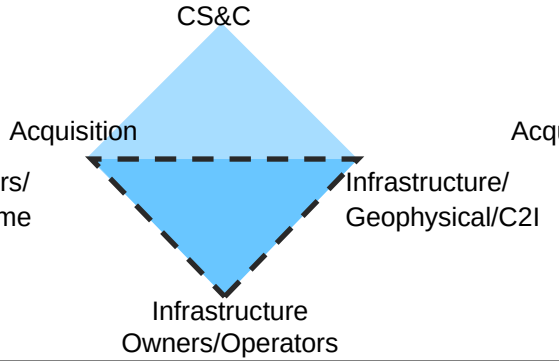
Chem/Bio Defense



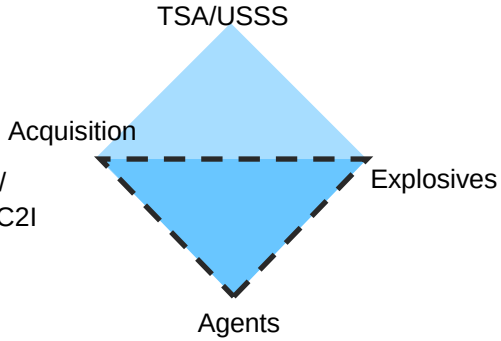
Maritime Security



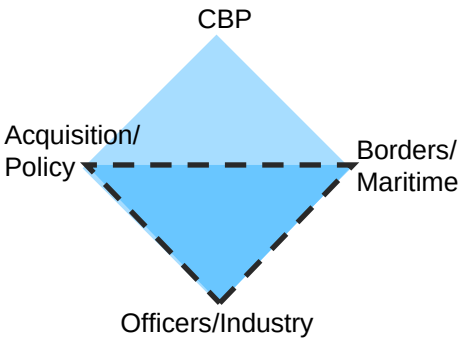
Cyber Security



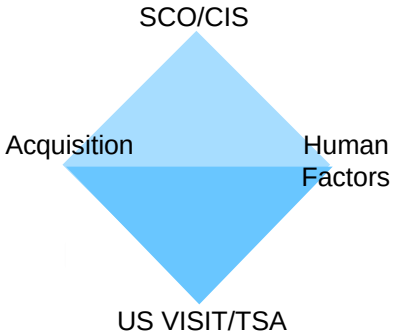
Explosive Prevention



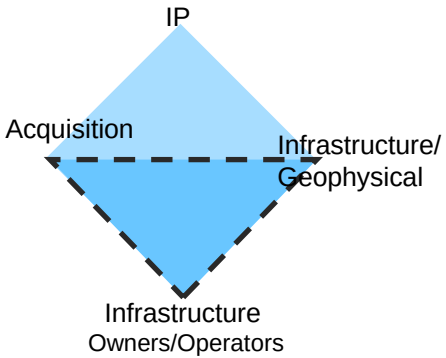
Cargo Security



People Screening

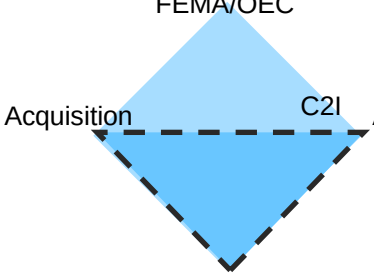


Infrastructure Protection

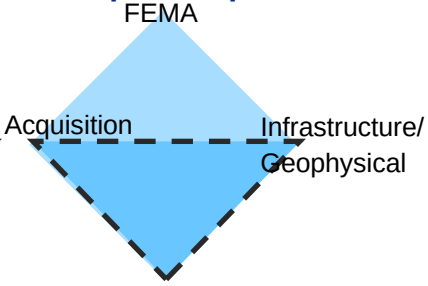


Incident Management

Interoperability

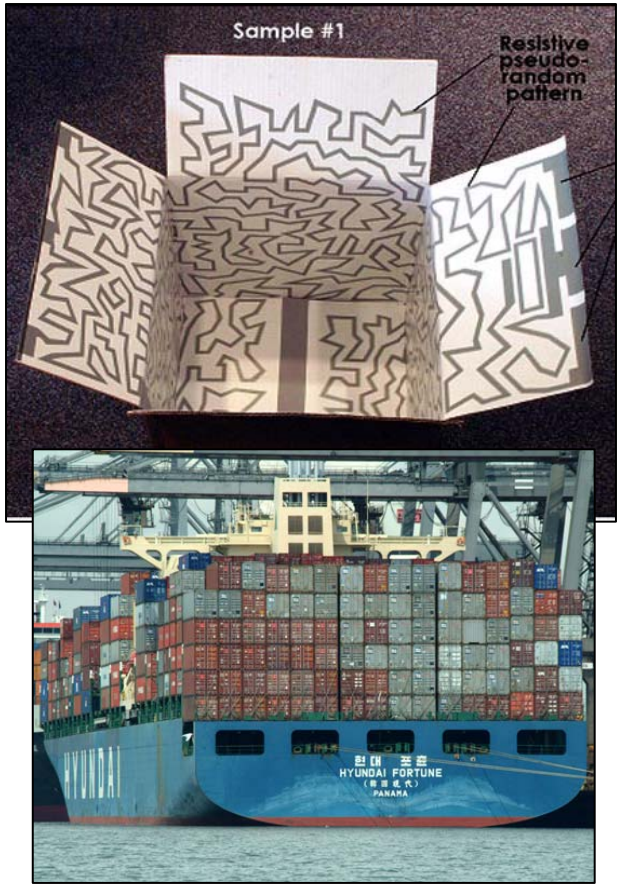


Prep & Response



Cargo Security

Representative Technology Needs



- Enhanced screening and examination by non-intrusive inspection
- Increased information fusion, anomaly detection, Automatic Target Recognition capability
- Detect and identify WMD materials and contraband
- Capability to screen 100% of air cargo
- Test the feasibility of seal security; detection of intrusion
- Track domestic high-threat cargo
- Harden air cargo conveyances and containers
- Positive ID of cargo and detection of intrusion or unauthorized access

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Maritime Security

Representative Technology Needs

- Wide-area surveillance from the coast to beyond the horizon; port and inland waterways region – detect, ID, and track
- Data fusion and automated tool for command center operations
- Vessel compliance through non-lethal compliance methods
- Enhanced capability to continuously track contraband on ships or containers
- Improved ballistic personal protective equipment for officer safety
- Improved WMD detection equipment for officer safety; improved screening capability for WMD for maritime security checkpoints

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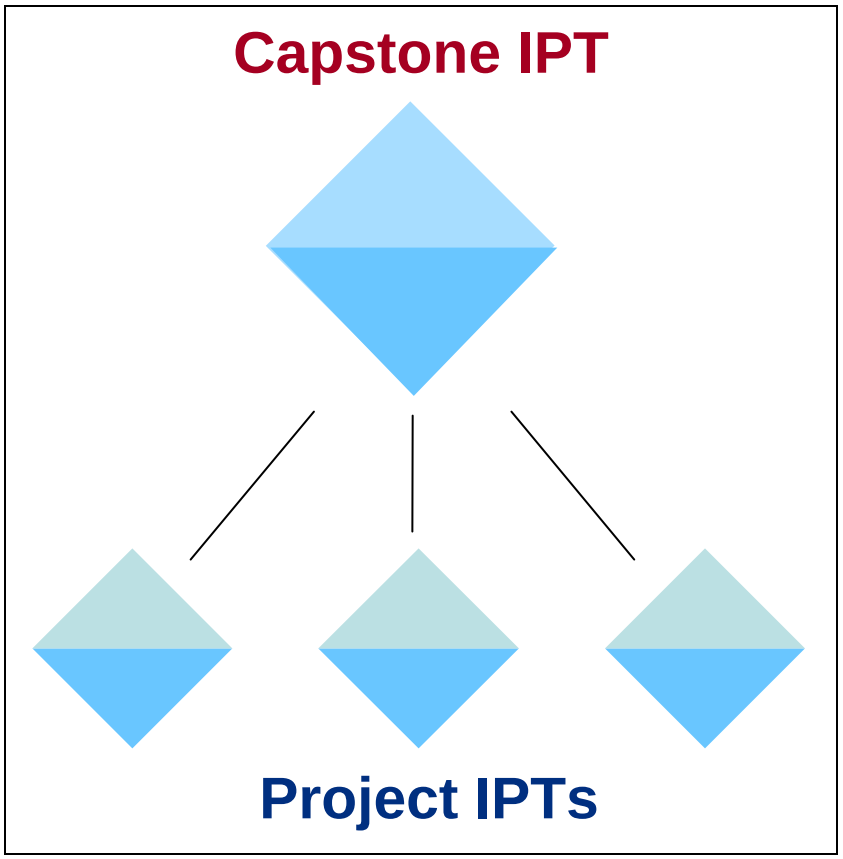
Establishment of Project IPTs: Detailed Specifications/Requirements

- Members:
  - S&T Program Manager(s)
  - Operating Component's Program Manager(s)
  - End-User
  - Supplier/Provider
- Meet at Least Monthly
- Report to Capstone IPT Quarterly



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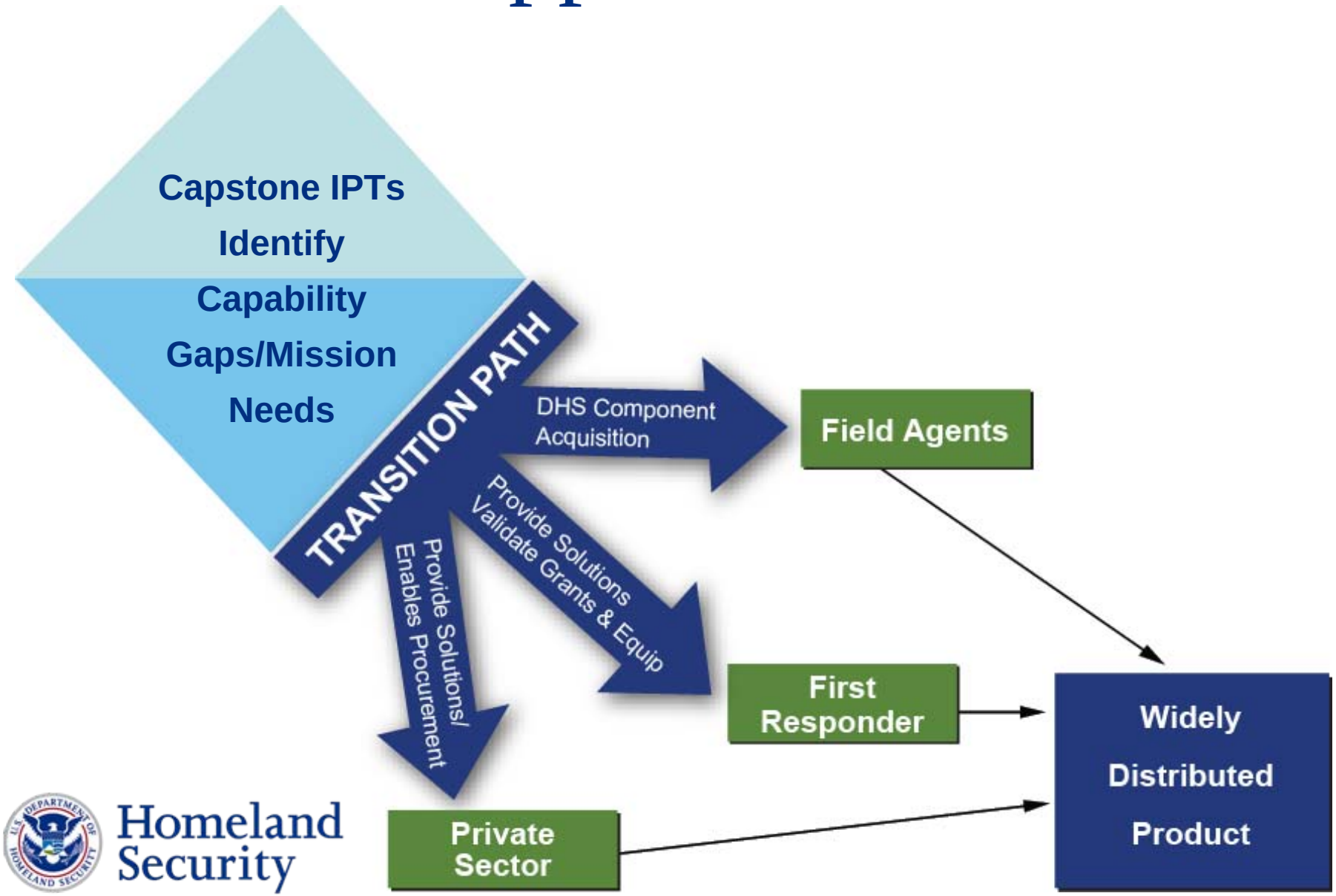
Transition Approaches



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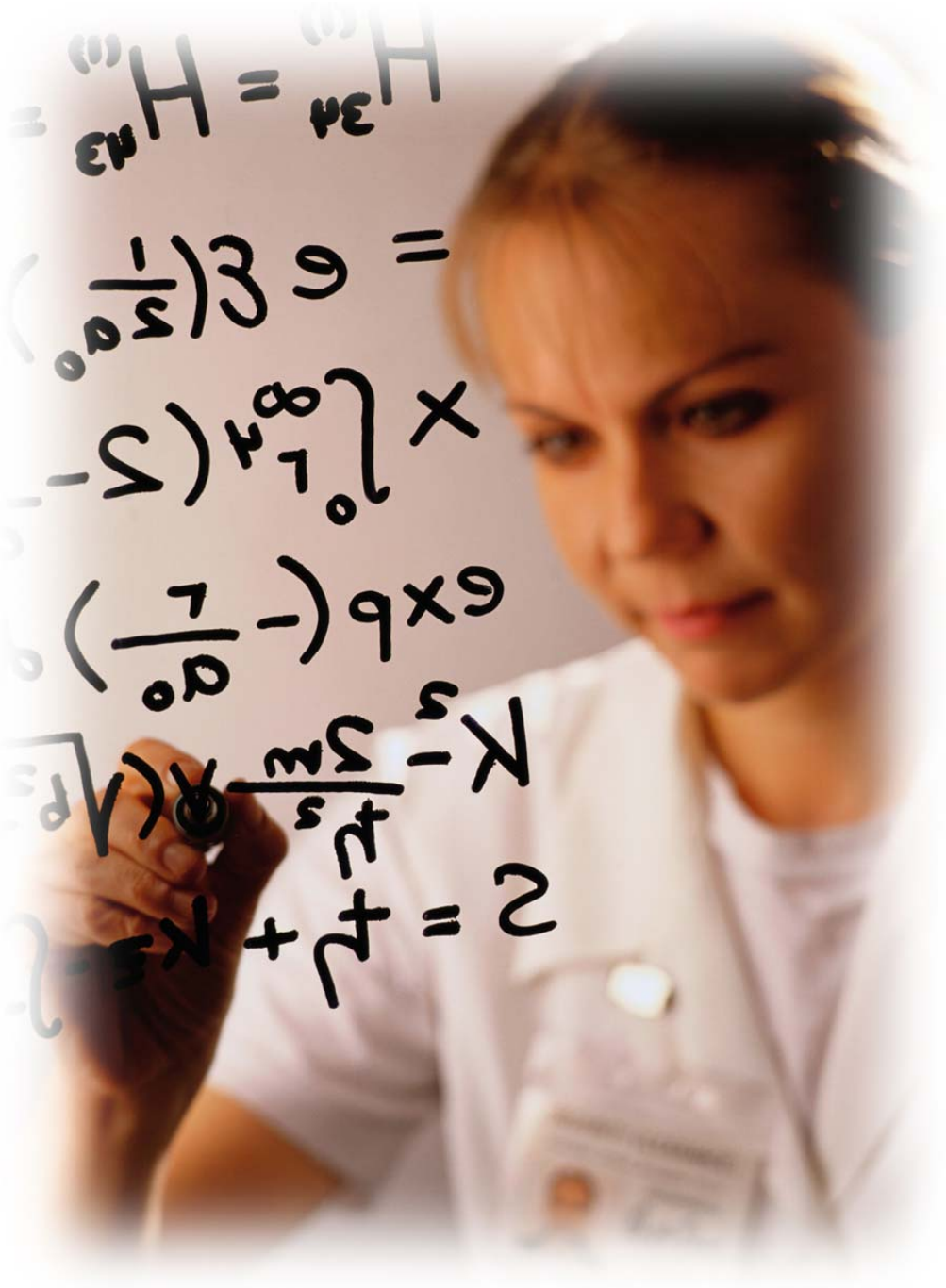
Getting on the "Same Page"

- Historical Perspective
- Language is Key
- Communication is Paramount



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Technology Readiness Levels (TRLs): Overview

TRLs are NASA-generated and Used Extensively by DoD

Basic principles observed and reported	1	Basic
Technology concept and/or application formulated	2	
Analytical and experimental critical function and/or characteristic	3	
Component and/or breadboard validation in laboratory environment	4	Applied
Component and/or breadboard validation in relevant environment	5	
System/subsystem model or prototype demonstration in a relevant environment	6	Advanced
System prototype demonstration in a operational environment	7	
Actual system completed and 'flight qualified' through test and demonstration	8	
Actual system 'flight proven' through successful mission operations	9	

TECHNOLOGY MATURITY

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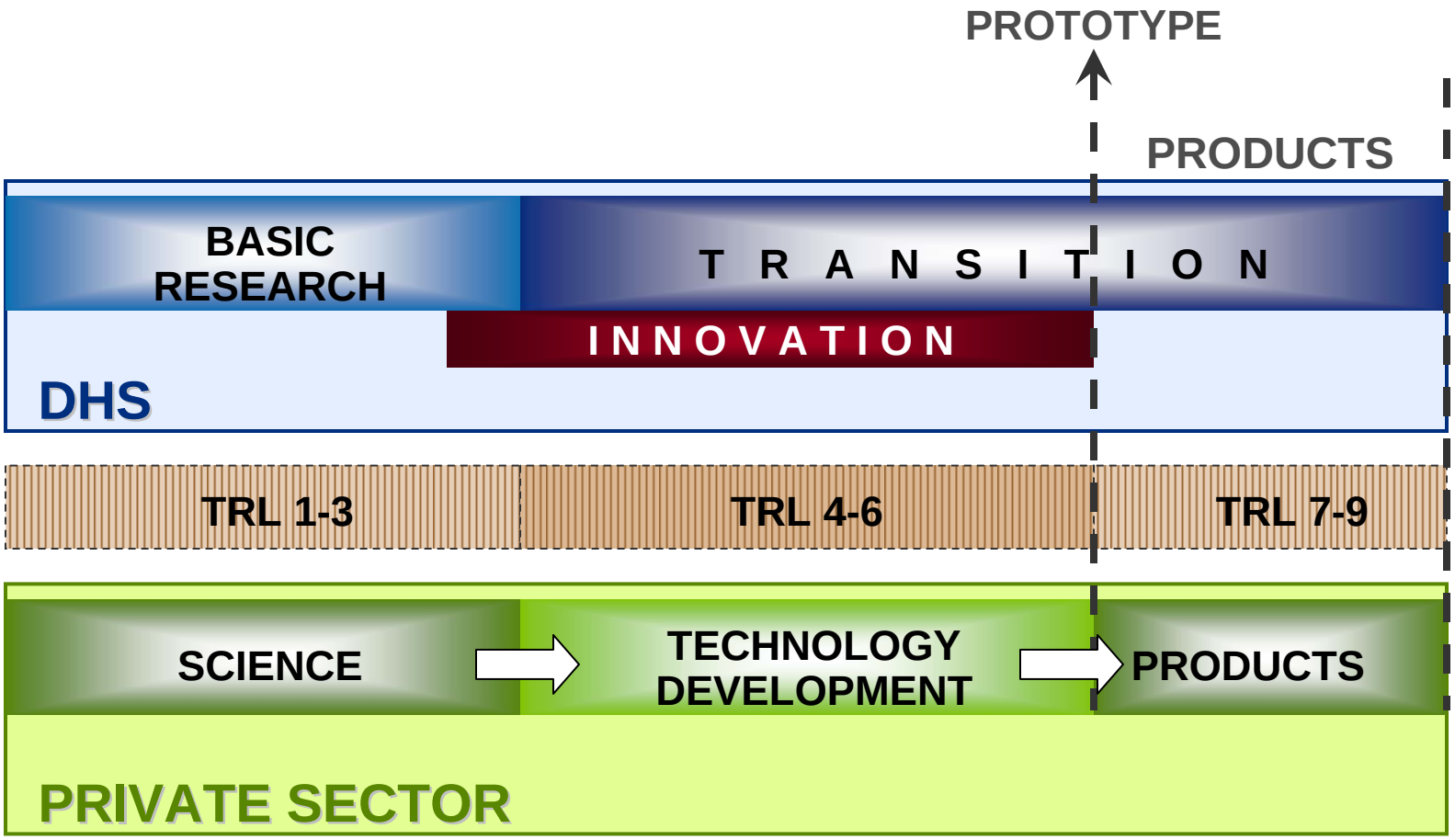
Correlation: DHS and Private Sector



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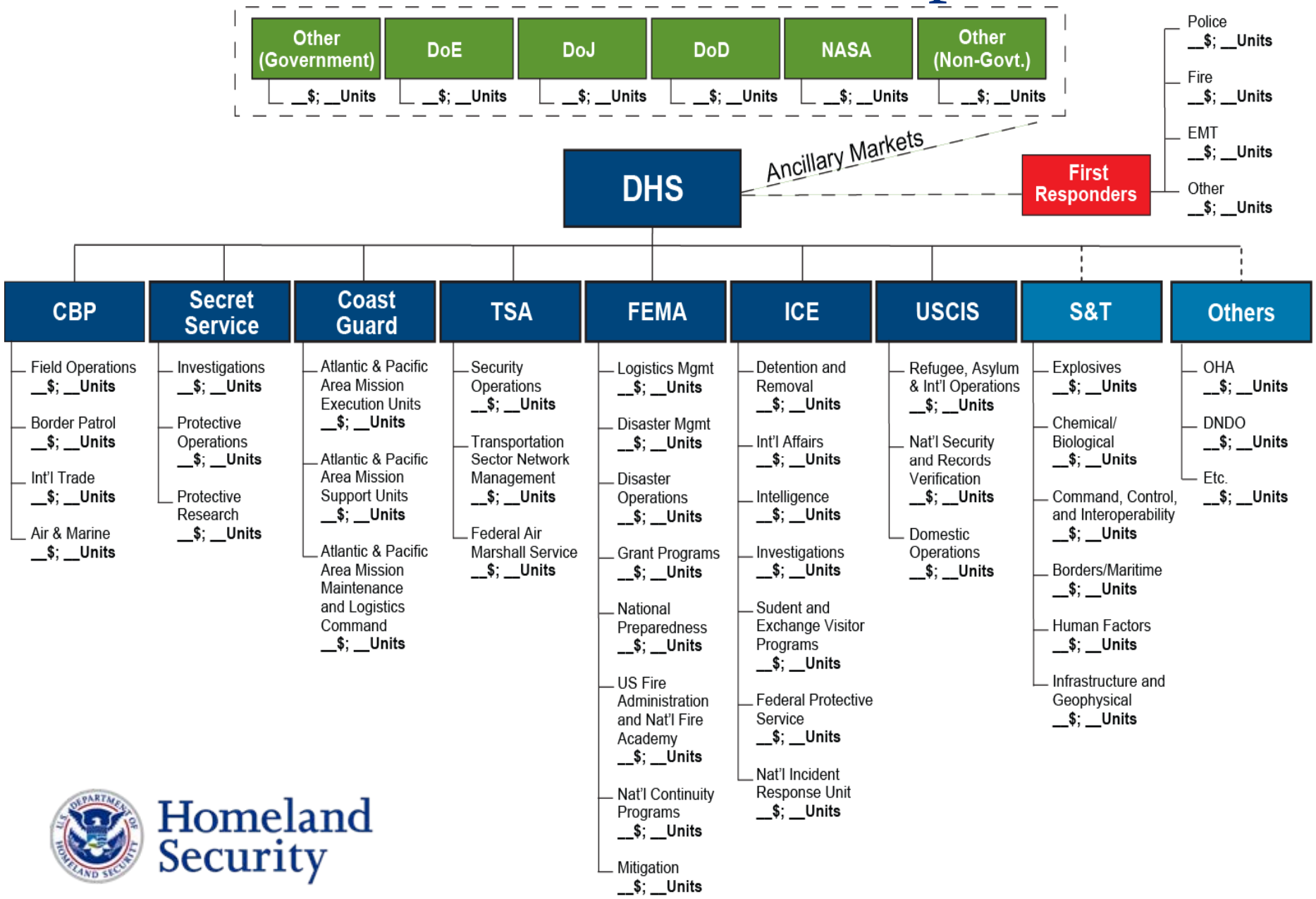
Market Potential Template



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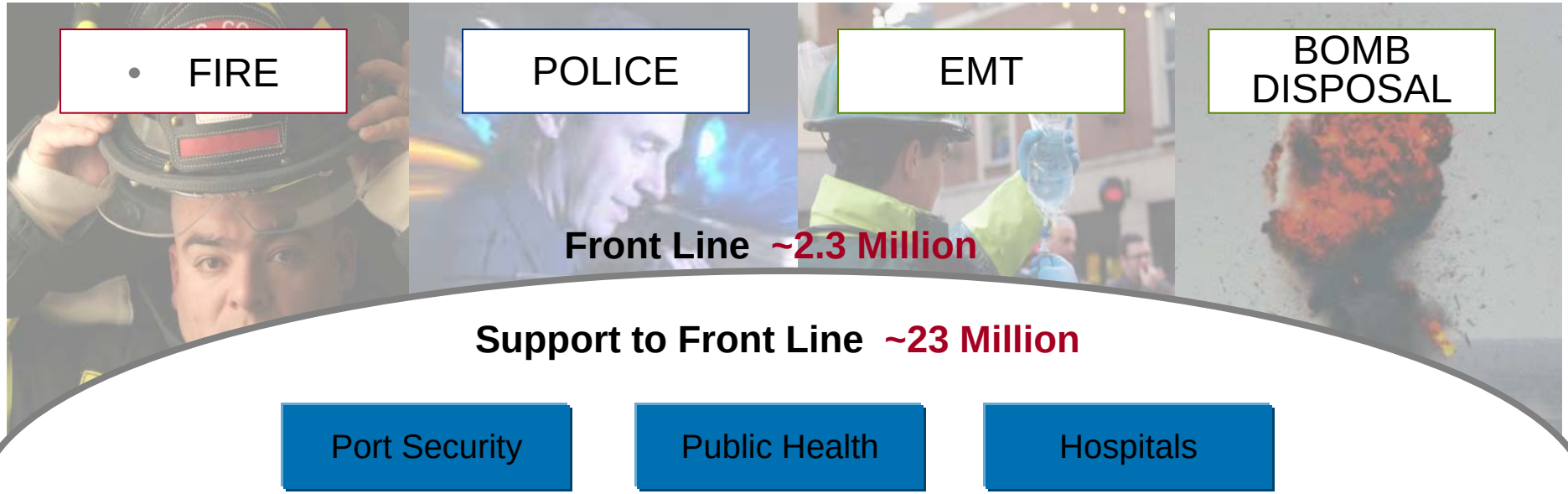
Conservative Estimate: Number of First Responders in the US

- Homeland Security Presidential Directive 8
- Steve Golubic (FEMA)

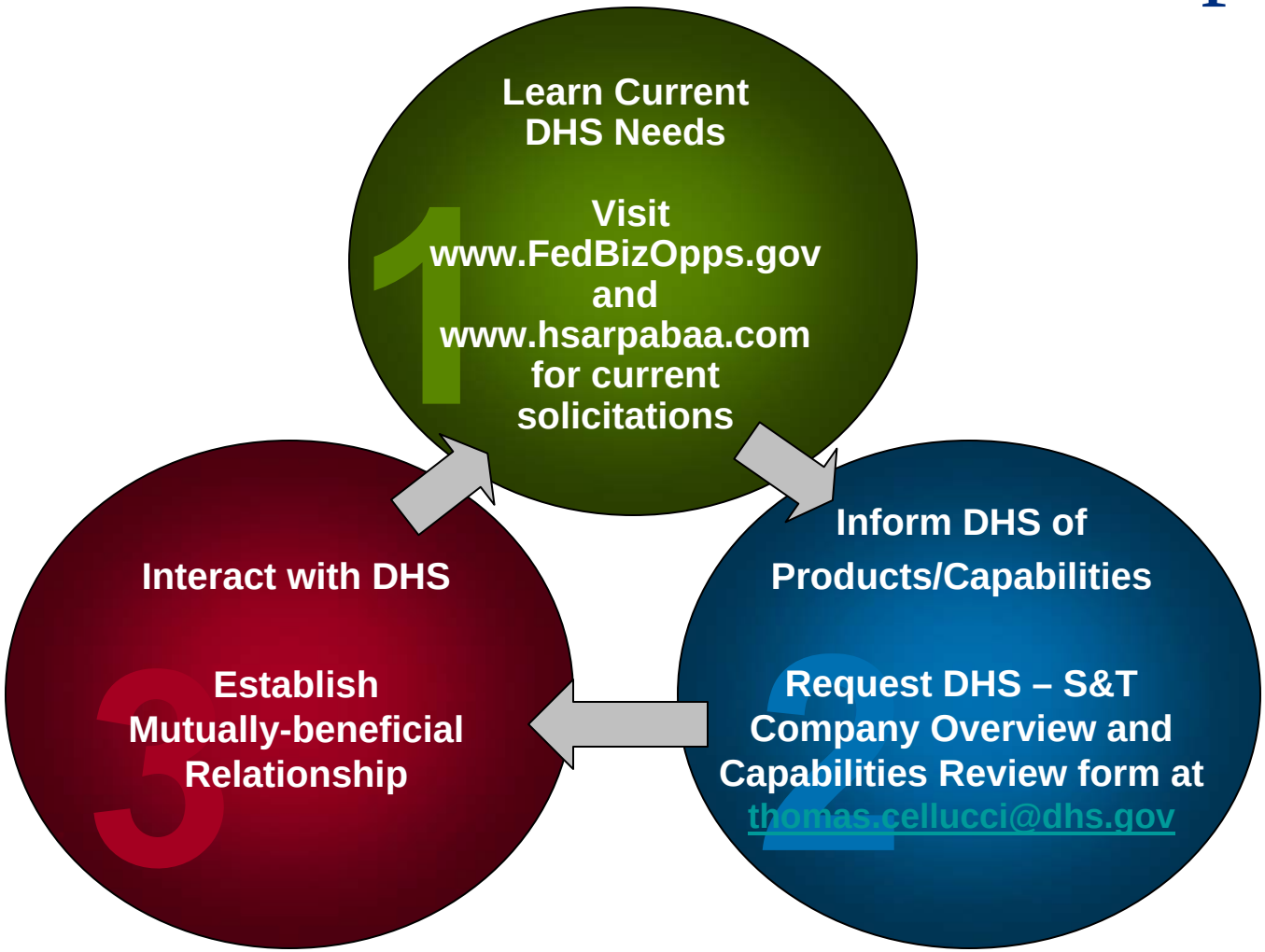
Total: ~25.3 Million Individuals



Support to Front Line ~23 Million

- Port Security
- Public Health
- Hospitals
- Transportation
- Emergency Management
- Clinics
- Venue Security
- Public Works/Utility
- School Security
- Response Volunteers

Call to Action: Mutual Benefits Create "Win-Win" Relationships



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Federal Business Opportunities

Sites where the Office of Procurement Operations (OPO) posts opportunities for perspective suppliers to offer solutions to DHS – S&T's needs:

- www.FedBizOpps.gov
- www.HSARPAbaa.com
- www.SBIR.dhs.gov
- www.Grants.gov

take advantage of...

- **Vendor Notification Service:** Sign up to receive procurement announcements and solicitations/BAA amendment releases, and general procurement announcements. http://www.fedbizopps.gov
- **S&T's HSARPA website:** Register to join the HSARPA mailing list to receive various meeting and solicitation announcements. Link to Representative High Priority Technology Areas, where DHS areas of interest can be found. http://www.hsarpabaa.com
- **Truly Innovative and Unique Solution**: Refer to Part 15.6 of the Federal Acquisition Regulation (FAR) which provides specific criteria that must be met before a unsolicited proposal can be submitted to Kathy Ferrell. http://www.acquisition.gov/far/current/html/Subpart%2015_6.html

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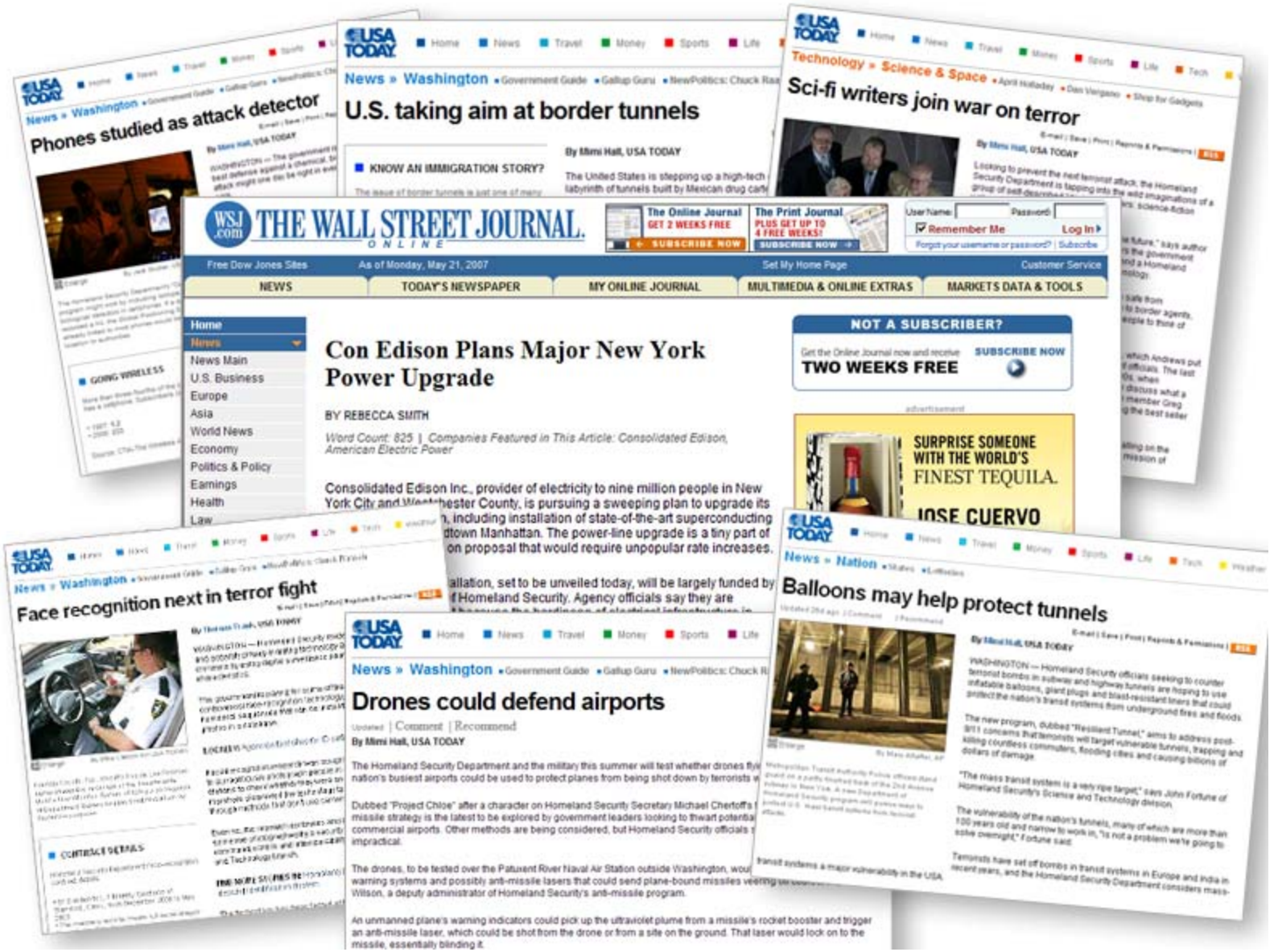
Contact Information:
Kathy Ferrell
Department of Homeland Security
Office of the Chief Procurement Officer
245 Murray Dr., Bldg. 410
Washington, DC 20528
unsolicited.proposal@dhs.gov
202-447-5576

More Opportunities with DHS Science and Technology

S&T Innovation in the News



SAFETY Act

Support Anti-Terrorism by Fostering Effective Technologies Act of 2002

- Enables the development and deployment of qualified anti-terrorism technologies
- Provides important legal liability protections for manufacturers and sellers of effective technologies
- Removes barriers to industry investments in new and unique technologies
- Creates market incentives for industry to invest in measures to enhance our homeland security
- The SAFETY Act liability protections apply to a vast range of technologies, including:
  - Products
  - Services
  - Software and other forms of intellectual property (IP)

Examples of eligible technologies:

- Threat and vulnerability assessment services
- Detection Systems
- Blast Mitigation Materials
- Screening Services
- Sensors and Sensor Integration
- Vaccines
- Metal Detectors
- Decision Support Software
- Security Services
- Data Mining Software

Criteria as stated in the SAFETY Act

- ✓ Is it an Anti-Terrorism Technology?
- ✓ Is it effective and available?
- ✓ Does it possess large potential third party liability risk exposure?
- ✓ Does Seller need SAFETY Act?
- ✓ Does it perform as intended?
- ✓ Does it conform to Seller's specifications?
- ✓ Is it safe for use as intended?

Addition SAFETY Act information…

Online: www.safetyact.gov Email: helpdesk@safetyact.gov

Toll-Free: 1-866-788-9318

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Award Criteria

	Developmental Testing and Evaluation (DT&E)	Designation	Certification
Effectiveness Evaluation Conclusion	Needs more proof, has potential	Demonstrated effectiveness, i.e. Developmental testing (with confidence of repeatability)	Consistently proven effectiveness, i.e. operational performance (with high confidence of enduring effectiveness)
Protection	Liability cap • only for identified test event(s) and for limited duration (=3yrs)	Liability cap • for any and all deployments in 5-8 year term	Government Contractor Defense (GCD) • for any and all deployments in 5-8 years term
Examples	• EDS not yet TSL Certified • Novel incident pattern matching service	• Radiological detector with laboratory success Opt-out screeners, only similar projects completed	• EDS TSL Certified • Well-documented infrastructure protection service with history of excellent performance and meeting DoE standards

EDS=Explosive Detection System TSL=Transportation Security Laboratory (TSA)

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DHS SBIR expects to release its 6.2 SBIR Solicitation in August 2006

DHS announces its 6.1 SBIR/STTR award selections.....

Homeland Security Advanced Research Projects Agency SBIR/STTR Program

Vision: Make America Safer

The top priority for everything HSARPA does is to enhance the safety and security of America's people, institutions and way of life.

SBIR Program:

The Department of Homeland Security (DHS), Homeland Security Advanced Research Projects Agency (HSARPA) launched the Small Business Innovation Research (SBIR) program, in December 2003. Our goal is to increase the participation of innovative and creative small businesses in Federal Research/Research and Development (R/R&D) programs and challenge industry to bring innovative homeland security solutions to reality.

All Federal agencies with an annual extramural R&D budget exceeding $100M are required to participate in the SBIR Program. Each fiscal year, not less than 2.5 percent of the annual extramural budget, is reserved for awards to small businesses for R/R&D through a three phase process

Other Funding Opportunities

Collaboration Opportunities

Topic Recommendations

Done

Internet

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Tech Clearinghouse Mission

To rapidly disseminate technical information concerning existing and desired products and services to/between Federal, State, Local, and Tribal Government and the Private Sector in order to encourage technological innovation and facilitate the mission of the Department of Homeland Security.

- Establishes Central Federal Technology Clearinghouse
- Issues Announcements for Innovative Solutions
- Establishes S&T Technical Assessment Team
- Provides guidance for the evaluation, purchase, and implementation of homeland security enhancing technologies
- Provides users with information to develop or deploy technologies that would enhance homeland security
- Enables technology transfer

Improved Knowledge Sound Acquisition Decisions

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TechSolutions

The mission of TechSolutions is to rapidly address technology gaps identified by Federal, State, Local, and Tribal first responders

- Field prototypical solutions in 12 months
- Cost should be commensurate with proposal but less than $1M per project
- Solution should meet 80% of identified requirements
- Provide a mechanism for Emergency Responders to relay their capability gaps
  - Capability gaps are gathered using a web site (www.dhs.gov/techsolutions)
- Gaps are addressed using existing technology, spiral development, and rapid prototyping
- Emergency Responders partner with DHS from start to finish

Rapid Technology Development

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

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TechSolutions Investments

Seatbelt Safety for Emergency Vehicles

Next Generation Breathing Apparatus

Fire Ground Compass

Under Consideration

Vehicle Mounted Chem/Bio Sensor Detection

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Getting Involved: S&T Contacts

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David Boyd	S&T-C2I@dhs.gov
Dave Newton	S&T-BordersMaritime@dhs.gov
Sharla Rausch	S&T-HumanFactors@dhs.gov
Chris Doyle	S&T-InfrastructureGeophysical@dhs.gov
Bob Hooks	S&T-Transition@dhs.gov
Starnes Walker	S&T-Research@dhs.gov
Roger McGinnis	S&T-Innovation@dhs.gov

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Summary

Detailed Requirements

Sizeable Market Potential

Delivered Products – PERIOD!

How Can You Afford NOT to Partner with DHS S&T?

Questions/Comments:

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Homeland Security

Thomas A. Cellucci, PhD, MBA

Chief Commercialization Officer

Dr. Cellucci accepted a special five year appointment from the Department of Homeland Security in July 2007 as Chief Commercialization Officer for the Science and Technology (S&T) Directorate. The Chief Commercialization Officer (CCO) is responsible for initiatives that identify, evaluate and commercialize technology for the specific goal of rapidly developing and deploying products and services that meet the specific operational requirements of the Department of Homeland Security's Operating Components and its end users. The CCO also develops and drives the implementation of DHS-S&T's outreach with the private sector to establish and foster mutually-beneficial working relationships to facilitate cost-effective and efficient product/service development efforts.

Cellucci is an accomplished serial entrepreneur, seasoned senior executive and Board member possessing extensive corporate and VC experience across a number of worldwide industries. Profitably growing high technology firms at the start-up, mid-range and large corporate level has been his trademark. He also founded in 1999 a highly successful management consulting firm—Cellucci Associates, Inc. -- that raises capital and provides strategic business services to top-tier global high technology firms. He serves on both public and private Boards and has authored or co-authored over 120 articles on Nanotechnology, Laser physics, Photonics, Environmental disturbance control, MEMS test and measurement, Mistake-proofing enterprise software, and Sales & Marketing.

He has also held the rank of Lecturer or Professor at institutions like Princeton University, University of Pennsylvania and Camden Community College. Cellucci also co-authored ANSI Standard Z136.5 "The Safe Use of Lasers in Educational Institutions".

As a result of his consistent achievement in the commercialization of emerging technologies, Cellucci has received numerous awards and citations from industry, government and business. In addition, he has significant experience interacting with high ranking members of the United States government—including the White House, US Senate and US House of Representatives—having provided executive briefs to the President of the United States and ranking members of Congress.

Cellucci earned a PhD in Physical Chemistry from the University of Pennsylvania, an MBA from Rutgers University and a BS in Chemistry from Fordham University. He has also attended and lectured at executive programs at the Harvard Business School, MIT Sloan School, Kellogg School and others. Dr. Cellucci is regarded as an authority in rapid time-to-market new product development and is regularly asked to serve as keynote speaker at both business and technical events.

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