

**Department of Homeland Security (DHS) Science and Technology Directorate (S&T)  
Homeland Security Science and Technology Advisory Committee (HSSTAC)**

**December 4 -5, 2013  
1120 Vermont Ave. NW  
Washington D.C. 20005**

**MEETING MINUTES**

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**December 4, 2013**

**Summary:** About 40 people attended, including six committee members, eight representatives of Customs and Border Protection (CBP), and 24 members of the public. (See list at end.)

**1. CONVENE AND INTRODUCTION TO DHS S&T**

**Acting Under Secretary for S&T Daniel Gerstein** convened the meeting at 8:55 a.m. He explained that he wants feedback on how S&T is supporting the components and invites the committee's ideas in this regard. He noted that S&T is focused more on capabilities. He explained that this meeting will test a new methodology for HSSTAC which focuses on DHS components. He then provided an update on S&T, explaining that it brings key technical and analytical capacity, is operationally focused, and has its own labs. He emphasized that S&T is not only about technology but also process enhancements and business reforms.

**STRAS Overview**

**Gerstein** explained the new Science and Technology Resource Allocation Strategy (STRAS) process (slides #26-30), through which S&T will ask components about their capabilities and gaps and will then use their input to generate a "signature document." The signature document will help S&T and the component reach agreement on a schedule for all phases of development projects. **Gerstein** announced that the 2<sup>nd</sup> day of this meeting will represent the pilot of this process with CBP. **Gerstein** and the HSSTAC members then discussed the documentation requirements, competing requirements, and the decision-making process.

**HSARPA Overview**

**Adam Cox, Acting Director of the Homeland Security Advanced Research Projects Agency (HSARPA)**, briefed the committee on HSARPA's role and mission (slides #34-55). He explained that HSARPA is moving toward more consistent metrics and is considering new ways to use BAAs and "term" Program Managers to facilitate creativity. He then briefed the committee on the missions of each HSARPA division and discussed S&T's two current Apex projects: AEER (Air Entry/Exit Re-Engineering) and BEAP (Border Enforcement Analytics Program).

## **FRG Overview**

**Jay Martin, Deputy Director of the First Responders Group (FRG)**, briefed the committee on FRG's role and mission (slides #56-85), noting that FRG has a broad constituency. He then gave an overview of the five FRG divisions, noting that FRG is a small part of S&T's R&D budget, with the majority allocated to technology development. He explained how FRG developed its foundational document by partnering with FEMA to commission a report which defined 40 broad capability areas. He explained that the First Responders Resource Group (FRRG) helps to develop operational requirements. He noted that travel restrictions have reduced FRG's ability to do outreach and engagement, and remote options do not adequately fill the gap. He explained FRG's process to identify needs (slide #69), and that technology foraging is a key element in solving them. Martin and the HSSTAC members then discussed examples of FRG-funded technologies, the acquisition process, and the need to measure impact and investment.

## **ASOA Overview**

**Debra Durham, Director of the Acquisition Support Operations and Analysis (ASOA)**, briefed the committee on ASOA's role and mission (slides #86-112) and explained how S&T leverages enterprise architecture that is managed by DHS operations. She noted that the ASOA budget has decreased, along with the early emphasis on standards. She explained its oversight of S&T's two Federally Funded Research and Development Centers (FFRDCs) and its focus on analysis of alternatives (AOAs) and transition. She highlighted the Rio Grande Valley (RGV) project with CBP. Durham and the HSSTAC members then discussed systems integration, components' ability to analyze their needs, the development and application of standards, and the management of the Transportation Security Lab (TSL), which is TSA's designated test authority. Durham highlighted ASOA's first systems analysis guidebook, which standardizes process and steps and is available to the public (slide #95.) **Gerstein** interjected that S&T has developed more than 250 knowledge products since the last HSSTAC meeting (slide #110).

## **RDP Overview**

**Keith Holtermann, Director of Research and Development Partnerships (RDP)**, briefed RDP's mission and goals (slides #113-131) and explained how RDP fosters collaboration across the government, creates and manages partnerships, and provides a bridge between internal partners and external ones. He noted that most of RDP's budget goes to the Office of National Labs (ONL) in direct support of the labs, and emphasized that RDP has equal access to the DOE labs. Holtermann and the HSSTAC members then discussed S&T's engagement with labs (including DoD's and HHS's), international and interagency engagements, and the Joint Interagency Field Experiments (JIFX).

## **2. BRIEF: DHS S&T RESILIENT SYSTEMS DIVISION (RSD)**

**RSD Division Director Jalal Mapar** briefed on S&T's newest division (slides # 132-159), which was formed in 2012. He explained that resilience cuts across many disciplines and its definition varies. He described how he used a systems approach to build the division and defined the attributes of resilience (slide #136) in order to build a framework. He described

RSD's thrust areas (slide #140) and the objectives under them. He emphasized the need to focus on end users, and to work closely within S&T and with DHS components regarding end-user requirements. He emphasized the need to increase the speed and effectiveness of disaster response and to reduce recovery times, and highlighted areas where RSD efforts can make a big impact. **Mahar, Gerstein** and the HSSTAC members then discussed RSD coordination with other divisions, how it leverages work by others, the emphasis on and difficulties surrounding transition, and the development of best practices and roadmaps.

### **3. DISCUSSION AND FEEDBACK**

HSSTC members commented on the importance of relationships with components and getting feedback from end users. They discussed outcomes and metrics, the complex environment of DHS, how to determine the value of S&T's work, the need for adaptability in the budget, and the need for a strategic element. Members applauded the closer relationship with components and the increased emphasis on an operational and systems approach. They suggested a better feedback loop for user impact, a possible market analysis, better metrics for success (especially regarding knowledge products), and possible cross-cutting themes.

### **4. STATUS REPORT: HSSTAC TASK FORCE ON THIRD PARTY PRE-SCREENING**

**Task Force Vice Chair Brian Toohey** briefed the committee on the task force which was created under HSSTAC in July 2013 to advise TSA in its goal to make travel both safer and more convenient, possibly by using industry to facilitate passenger pre-screening. The task force has held two webinars and one full-day meeting. TSA invites task force input during the early stages of T&E, and also invites input about whether prototyping should be pursued. The task force plans to meet in early 2014 to develop recommendations regarding next steps. Toohey and the HSSTAC members then discussed the issue of threat identification, the potential impact of third-party screening on airport lines, and the task force timeline.

### **5. PUBLIC COMMENTS**

**Andy McDonald, BAE Systems**, commented on DHS's acquisition process. An Army veteran with acquisition experience, he compared DoD's and DHS's acquisition history and noted that the two agencies are on some parallel paths. He suggested that DHS standardize and integrate its equipment, and team up with DoD when appropriate.

**David Armour, Cypress International**, commented on the impact of sequestration. He expressed concern that S&T's budget numbers may portray business as usual and may not show the impact of sequestration.

### **6. UPDATE AND DISCUSSION: INDUSTRY ENGAGEMENT WITH DHS S&T**

**Gerstein** briefed the committee on S&T's industry engagement (slides #162-169), gave some examples of successful partnerships that led to transitions, and asked for discussion and feedback on the current S&T tools for industry collaboration. The discussion centered on competitions, the need to publish well-defined needs, how to find industry partners, how to communicate to industry that a market exists, and the role of industry in helping to transition technologies. **Cox** described how HSARPA has used webinars to communicate with industry and has tried to stimulate competitions through Broad Area Announcements (BAAs).

HSSTAC members suggested that S&T consider sponsoring an X Prize; be more explicit about needed capabilities and whether it is seeking a new capability or an improvement on an existing one; use other avenues besides FedBizOps; consider tapping the investment community; and consider business models that might help industry understand the market. **Gerstein** asked for input on how to find industry partners for the mid to late stages of a product and emphasized the hope that webinars would help to communicate the transition needs. HSSTAC members suggested talking to the customer base; the need to develop standards, which can require international buy-in; and the need for S&T to know its risk tolerance. **Gerstein** noted that connecting with industry partners is a key challenge for S&T.

## 7. HSSTAC WAY AHEAD

**Gerstein** announced that the second day of the meeting will focus on S&T engagement with Customs and Border Protection (CBP).

## 8. ADJOURN: Hanson adjourned the meeting at 4:30 p.m.

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**December 5, 2013**

## 1. CONVENE AND BRIEF: CBP OVERVIEW AND TECHNOLOGY NEEDS

**Acting Under Secretary for S&T Daniel Gerstein** convened the second day of the HSSTAC meeting at 9:05 a.m. He reminded attendees that the over-arching goal for DHS S&T and for the HSSTAC meetings is to better perform the S&T mission, and HSSTAC will now focus its quarterly meetings on DHS components. Today's component of focus is Customs and Borders Protection (CBP).

**Mark Borkowski, Assistant Commissioner for the Office of Technology Innovation and Acquisition (OTIA)**, explained the mission and roles of CBP, including as an economic driver. He described its operational context and technology needs. Discussion followed regarding technology readiness levels (TRLs) and the transition and acquisition process.

**Colleen Manaher, Executive Director for Planning, Program, Analysis and Evaluation, Office of Field Operations (OFO)**, gave an overview of OFO's mission and challenges. Discussion followed regarding the impact of flat budgets, the need for more personnel, the need for partnerships (including with industry), the proper balance of security with privacy, the role of technology, and how to measure return on investment.

**Andrew Scharnweber, Patrol Agent In Charge, Office of Border Patrol (OBP)**, explained OBP's risk-based strategies and the necessity to make choices under tight budgetary constraints. He emphasized partnerships and explained how technology can help agents, including for process improvement. Discussion with HSSTAC members followed regarding how requirements are collected, the pace of technological change, and CBP's use of gear that is redeployed from DoD.

**Ron Reichel, Director, Requirements, Office of Air and Marine (OAM)**, described the OAM organization, missions, assets, and recent performance results. Discussion followed regarding the collection and analysis of data, how regional missions within OAM can differ,

the use of unmanned aerial vehicles (UAVs) and risk assessment models, a recent focus on hand-held devices to help agents on the ground, and the need for better surveillance.

**Thomas Manning – Director, Collections Division, Office of Intelligence and Investigative Liaison (OIIL)**, described his office’s role and some recent enhancements in forensics, sensors, and predictive tools. He highlighted current S&T/CBP projects such as threat and anomaly detection models, and possible future collaborations such as space visualization.

**Troy Riley, Executive Director, Commercial Targeting & Enforcement, Office of International Trade (OT)**, described OT’s operational environment as it works to move legitimate trade quickly while interdicting illegal flows, and emphasized the need to keep up with changes in the industry and technology. He described how commodities are organized and how data is managed. Discussion followed regarding cyber security and the support that OT receives from the DHS S&T Centers of Excellence.

## 2. HOW S&T SUPPORTS CBP

**Dan Gerstein** explained that all four groups in S&T support CBP and offered some budget numbers. He emphasized S&T’s desire to be operationally-focused while remaining innovative, which requires a good understanding of component needs. He emphasized the need for better lines of communication.

**Adam Cox, Acting Director, Homeland Security Advanced Research Projects Agency (HSARPA)**, briefed on HSARPA engagement with CBP (slides #20-34). He gave an overview of HSARPA’s operational setting and budget environment, described specific projects that support CBP, and highlighted HSARPA’s interest in new technology development, in-depth assessments of commercially-available technology, and prototype development. A discussion followed regarding HSARPA’s relationships with components generally (and CBP in particular), how new technologies are tested, the rate of technology transfer, and the need for cyber security. **Cox** then described the HSARPA portfolio of 21 current CBP projects (slide #24).

**Jay Martin, Deputy Director, First Responder Group (FRG)**, gave an overview of FRG projects that relate to CBP (slides #35-45), emphasizing that the tools are generally available to first responders.

**Debra Durham, Director, Acquisition Support and Operations Analysis (ASOA)**, described ASOA links to CBP (slides #46-55), emphasizing the Rio Grande Valley (RGV) Systems Analysis. Discussion followed regarding how quickly the recommended changes are implemented, whether improvements were realized, the impact of cost, who has responsibility for testing, and whether a need exists for doctrinal solutions, training, or a cost-benefit analysis.

**Keith Holtermann Director, Research and Development Partnerships**, explained RDP as the support entity which facilitates the other work of S&T through partnerships (slides #56-63). He then reviewed RDP projects of interest to CBP.

**Gerstein** asked if there were any surprises in the preceding presentations. CBP representatives responded that there were none. This segment of the agenda concluded with a consensus that communication and cooperation between CBP and S&T has improved and should continue to increase. **Gerstein** emphasized that the STRAS process will be the tool to improve cooperation.

### 3. PUBLIC COMMENT

**Ella Schiralli, Manager, Federal Government Markets, 3M Identity Management**, emphasized the importance of partnership and engagement with industry; the sooner industry is brought into the loop, the better it can add effectively to the conversation

### 4. DHS DIRECTION TO HSSTAC

**Gerstein** asked HSSTAC members to discuss what they had heard during the two days of meetings and present their initial input to him in an hour.

### 5. HSSTAC FEEDBACK AND INITIAL RECOMMENDATIONS

Members held a one-hour working session to develop an out-brief to S&T and then presented their input to Dr. Gerstein. They applauded the format of the meeting and the evidence of closer links between S&T and CBP, and recommended that HSSTAC meetings continue the focus on DHS components but perhaps include a more strategic element in the future. Regarding CBP, they suggested that S&T consider developing a cyber strategy for CBP, and suggested that CBP operators may benefit from more engagement with S&T's technology foraging efforts. They also recommended that S&T continue to pursue better metrics of success and consider academic research beyond the DHS S&T Centers of Excellence.

### 6. ADJOURN: Hanson adjourned the meeting at 4:30 p.m.

**Certified by:** Phil DePoy (HSSTAC Chairman Phil Depoy) **Date:** 4 MARCH2014

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## MEETING ATTENDEES

### HSSTAC Members:

1. Steven Bellovin
2. Kathleen Carley
3. Julie Casani (Dec. 4 only)
4. Phil DePoy
5. Mark Lister
6. John Parow

### DHS/CBP: (Dec. 5 only)

1. Mark Borkowski – Asst. Comm. for Office of Technology Innovation and Acq. (OTIA)
2. Colleen Manaher – Exec. Dir, PPAE, Office of Field Operations (OFO)
3. Thomas Manning – Dir., Collections Division, Office of Intel. and Inv. Liaison (OILL)
4. Troy Riley – Exec. Dir., Comm. Targeting & Enf., Office of International Trade (OT)
5. Ron Reichel - Director of Requirements, Office of Air and Marine (OAM)

6. Rick Dorsey - Program Manager, Office of Air and Marine (OAM)
7. Andrew Scharnweber - Associate Chief, Office of Border Patrol (OBP)
8. Jennifer Pennese – Dir., Strategic Transformation Office, Office of Field Operations (OFO)

**Members of Public:**

December 4, 2013:

1. John McGowan - Sandler & Travis Trade Advisory Services
2. Ella Schiralli – 3M Identity Management
3. Eric Juttelstad – Morpho Trust
4. David Olive – Catalyst Partners
5. Andrew Jay MacDonald - BAE Systems
6. Dave McWhorter – Catalyst Partners
7. Irelene P. Ricks - American Assn. of State Colleges and Universities, Grants Resource Ctr.
8. Paul Brenner - ICF INTERNATIONAL
9. Jesse Rauch – HP Autonomy
10. David T. Armour - Cypress International
11. Diana Fossett – Noblis
12. Andrea C. Marsh - Battelle Memorial Institute
13. Barbara Zalinsky – Implant Sciences Corporation
14. Kevin Brenker – Symetrica Inc.
15. Tarry Kirkland – SAIC
16. Joseph Gresenz – Battelle Critical Infrastructure Business Unit
17. Rick Muntz –Arktix Radiation Detectors, Ltd.
18. Rico Chandra – Arktis
19. Caroline Eliaser - P66
20. Margaret Goldberg – Noblis

December 5, 2013

1. John McGowan (see Dec. 4)
2. Ella Schiralli (see Dec. 4)
3. David Olive (see Dec. 4)
4. Andrew Jay MacDonald (see Dec. 4)
5. Dave McWhorter (see Dec. 4)
6. Paul Brenner (see Dec. 4)
7. David T. Armour (see Dec. 4)
8. Kevin Brenker (see Dec. 4)
9. Joseph Gresenz (see Dec. 4)
10. Diana Fossett (see Dec. 4)
11. Michael Butler - Deloitte Consulting, LLP
12. Robert Jacksta - Deloitte Financial Advisory Services, LLP
13. Shaq Sontakke - Deloitte Consulting, LLP
14. Andres Rodriguez – Wire Media

**NOTE:** Meeting materials are posted at <http://www.dhs.gov/st-hsstac>.