

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

March 10 - 11, 2016

Committee Meeting

Location: Department of Homeland Security, S&T

1120 Vermont Ave, Washington, DC 20005

Minutes

Summary: About 52 people attended the meeting (please see list below). A recording of the meetings can be found at:

March 10 - morning: <https://share.dhs.gov/p6oop0osphx/>

March 10 - afternoon: <https://share.dhs.gov/p86kcuscb11/>

March 11 - afternoon: <https://share.dhs.gov/p2iqti3hbfk/>

Day One (Thursday, March 10th):

1. CONVENE AND OPENING

HSSTAC Designate Federal Officer, **Bishop Garrison**, convened the meeting at 9:00 a.m. **Garrison** welcomed the committee members back to the session. He went over the agenda and stated that this was an open Federal Advisory Committee meeting with no discussions on classified information. He then asked the committee members to briefly introduce themselves.

2. HSSTAC DELIVERABLES UPDATE

Dr. Steven Flynn presented information on the whitepaper covering resiliency on behalf of the group and asked the committee for feedback. Flynn stated that for the concept of resiliency to be useful as a homeland security notion, measurable metrics are needed to quantify levels of damages and residual performance as caused by natural forces and/or adversarial attacks. These metrics must be also used to quantify the efficacies of mitigation and restoration/reconstitution techniques and constantly used as a development tool. **Dr. Hendler** concluded by asking the members to provide feedback to the draft they would be circulating (see attached document).

3. FUTURING: WHAT IS COMING NEXT?

Garrison introduced Dr. Brothers. **Brothers** lead a discussion on the new realities of research and development. He mentioned potential funding challenges with new structuring and placing more money in support of national labs and facilities. He added that S&T will be using Integrated Product Teams (IPTs) to narrow down the focus of the mission space and look at the cross-cutting opportunities across the government. The IPTs will help to address the gaps and provide S&T leadership with data on how to fill the gaps. Brother's proposed a few questions to the group; how do we make the information actionable? Is mapping necessary? IPTs are in place in order for S&T to be able to set visionary goals for the next 5-

10 years. We need to find the best way to empower humans with the threat of increasing capabilities, threats, decreasing budgets in a massive mission space. **Brothers** then invited comments from the committee members and from the public.

4. S&T GROUP CHALLENGES & DISCUSSION

As a part of this meeting Dr. Brothers requested that each S&T group leads provide one issue or problem their group has faced that the HSSTAC membership could help address. The committee was split up into areas of expertise to discuss the issues and work out solutions to produce a deliverable in the form of an action memo that provides specific, actionable recommendations. The groups were directed to address approaches to problems along with providing best practices rather than providing technological solutions.

Dr. Steven Hutchinson, Director of Capability Development Support (CDS) Science and Technology Directorate discussed the challenge that his division has “What current industry best practices in systems engineering and developmental test can DHS adopt to ensure production units satisfy reliability requirements?”

Following, **Bob Burns**, Director of Homeland Security Advanced Research Projects Agency (HSARPA), discussed the challenge that his division has “How can DHS best develop a framework for managing constantly changing information from various Internet of Things (IoT) data streams, particularly in circumstances of limited time and imperfect information such as one or more networks experiencing latency or outages during an emergency response?”

Lastly, **Joseph Martin**, Director of Research and Development Partnerships (RDP), discussed the challenge that his division has “Does S&T use the right tools to build a collaborative R&D model that operates at the pace of innovation in the private sector?” See attached.

In addition to the issues presented, futuring was also included in the discussions. The challenge for S&T was broken down into two questions: How to do business in the new Research and Development reality? What are fourth coming threats and technology?

5. RECONVENE

The committee regrouped before finishing for the day in order to take any questions from the public.

6. **ADJOURN: Garrison** adjourned the meeting at approximately 4:30 p.m.

Day Two (Friday, March 11th)

1. Reconvene and Opening

Garrison welcomed the committee members at 9:00 a.m. and summarized the agenda for the day. Subsequently, he provided instructions for the HSSTAC small working group sessions.

2. Small Working Group Sessions

Members broke out into their assigned groups in order to develop an action memo on the issue or challenge they had been discussing. An executive summary was also prepared by the groups in order to present their findings to the committee.

3. Group Outbriefs

Group #1 Challenge: What current industry best practices in systems engineering and developmental test can DHS adopt to ensure production units satisfy reliability requirements?

Group members: Phil Coyle, Marian Greenspan, Suzy Dixon (SETA Support), and Everett Rhoades

Recommendation: Greenspan presented the group recommendations. She stated that the group realizes the difficulties faced in addressing this challenge, to include difficulties of affecting a culture shift within an organization as large as DHS. Therefore, we recommend a collaborative, coalition building approach between S&T and Department Acquisition stakeholders. We also recommend pursuing Secretary level support for the final solution set.

In Testing,

- Get the system in front of intended users early and often and get the system into a realistic environment early
- Use contract incentives and penalties to influence performance goals
- Never bet your entire program on one test (Corollary: Don't fail in public)
- Beta test small to large, rapidly

In Systems Engineering:

Track and capitalize on lessons learned from previous attempts with similar systems, help developers experience shortcomings of previous systems first hand, and emphasize systems engineering training and engagement at the Program Office level.

In addition, this group sees that culture change is needed to build DHS Stakeholder Coalitions for a Unity of Effort for cross component, PM and test communities. This can be accomplished through Secretary and Undersecretary of Management Engagement at Developmental Test Stage, and changes to Legislation and/or DHS Policy.

Group #2 Challenge: How can DHS best develop a framework for managing constantly changing information from various Internet of Things (IoT) data streams, particularly in circumstances of limited time and imperfect information such as one or more networks experiencing latency or outages during an emergency response?

Group members: General Raduege, Annie McKee, Gary Schenkel, James Hendler, Jay Farr, James Schwartz, Chris Featherston (S&T), Ana Vazquez (SETA Support), David Olive (observer from the public)

Recommendation: Hendler presented the group recommendations addressing the HSARPA IoT challenge:

- Add Protect to Detect/Authenticate/Update
- IoT solicitation needs credible external experts from research (independent) included.
- Identify critical infrastructure requirements (technical) to influence standards for interoperability of IoT provides

Group #3 Challenge: Does S&T use the right tools to build a collaborative R&D model that operates at the pace of innovation in the private sector?

Group members: Byron Collie, Jim Decker, Mike Goldblatt, Kathie Olsen, Brian Toohey, Ted Willke, and Mitch Erickson (S&T)

Recommendation: Goldblatt presented the following recommendations from the group: Utilize novel outreach mechanisms to bring in key new players into the S&T R&D arena

- Make operational testing and evaluation facilities available at all phases of iterative development and acquisition cycle
- Two stages must be put into context of the agency goals for short-term; mid-term and long-term deliverables

Group #4 Challenge: How to do business in the new research and development reality? What are fourth coming threats and technology?

Group members: Mark Maybury, Stephen Flynn, Yacov Haimen, Vincent Chan, Eric Haseltine, John Sims, Dan Dubno, Brock Reeve, Michel Kareis (Facilitator), Gretchen Cullenberg (SETA Support), Dewey Murdick (S&T)

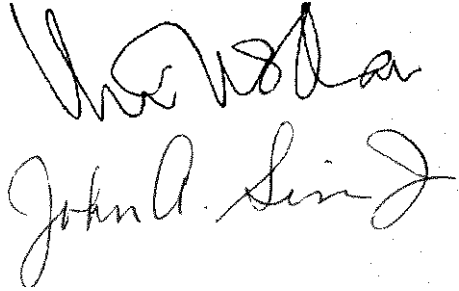
Recommendation: Dubno presented a summary of the group discussion as it relates to a metaphor of fishing and fishing poles:

- Goal to lay out clear options for “fishing poles” (not “fish”)
 - The problem of harvesting high-value technical opportunities and mitigation of technical threats is only going to get more challenging: speed, quantity, diversity of actors
 - The responsibility of DHS is to envision the future threats and opportunities and respond just ahead of that “curve”
- Elements of the effective “Fishing Pole”
 - Broad awareness, clear prioritization, and probabilistic view of the future
 - Doing, dynamic learning, self-correction methods based on feedback
 - Organization that is calibrated to act and motivated to respond to new insights

4. COMMENTS FROM THE PUBLIC

Garrison opened up the meeting to take questions from the public. There were no comments.

5. ADJOURN: **Garrison** adjourned the meeting at 3:00 p.m.



Signed: Vincent Chan, HSSTAC Co-Chair

Signed: John Sims, HSSTAC Co-Chair

Date: 3/28/16

MEETING ATTENDEES

Members:

Vincent Chan

Byron Collie

Phillip Coyle

William Crowell (Virtual)

Jim Decker

Daniel Dubno

Jay Farr

Stephen Flynn

Michael Goldblatt

Marian Greenspan

Yacov Haimes

Eric Haseltine

James Hendler

Mark Maybury

Annie McKee

Kathie Olsen

Harry Raduege

Brock Reeve

Gary Schenkel

Jim Schwartz

John Sims

Brian Toohey

Ted Willke

DHS Briefers and Observers:

Bishop Garrison (briefer)

Robert Burns (briefer)

Gretchen Cullenberg

Suzy Dixon Rhoades

Matt Sarlouis

Ana Vazquez

Tod Companion

Mitch Erickson

Michel Kareis

Joseph Martin (briefer)

Steve Hutchinson (briefer)

Kevin Brown

Daryl Kramer

Paul Ragsdale

Tyler Newton (Virtual)

Kathryn Coulter

Everett Rhoades

Others:

David Olive

Agnes Chan (virtual)

Adam Scott (virtual)

Caroline Berger (virtual)

Jessica Cox (virtual)

Christine Connell (virtual)

Kristen Wyckoff (virtual)

Sarah Moore (virtual)

Nasir Ghani (virtual)

Shawn Taylor (virtual)

Luke Tillman (virtual)

NOTE: All meeting materials (listed below) are posted at <http://www.dhs.gov/st-hsstac>. No handouts were distributed during the meeting.

Meeting Documents:

N/A

Read Ahead Materials: N/A