

A ROADMAP FOR SECURITY? EXAMINING
THE SCIENCE AND TECHNOLOGY
DIRECTORATE'S STRATEGIC PLAN

HEARING

BEFORE THE

SUBCOMMITTEE ON EMERGING
THREATS, CYBERSECURITY, AND
SCIENCE AND TECHNOLOGY

OF THE

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A ROADMAP FOR SECURITY? EXAMINING THE SCIENCE AND TECHNOLOGY DIRECTORATE'S STRATEGIC PLAN

Wednesday, June 27, 2007

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON HOMELAND SECURITY,
SUBCOMMITTEE ON EMERGING THREATS, CYBERSECURITY,
AND SCIENCE AND TECHNOLOGY,
Washington, DC.

The subcommittee met, pursuant to call, at 2:16 p.m., in Room 311, Cannon House Office Building, Hon. James R. Langevin [chairman of the subcommittee], presiding.

Present: Representatives Langevin, Lofgren, Christensen, Etheridge, Green and McCaul.

Mr. LANGEVIN. The subcommittee will come to order.

The subcommittee is meeting today to receive testimony on: A Roadmap for security? Examining the Science and Technology Directorate's Strategic Plan.

Good afternoon. I want to begin by thanking Under Secretary Cohen for testifying at today's hearing.

If I can, before we begin, I just want to take a quick minute. Before we get to today's topic, I would like to say a special thanks to you, Secretary Cohen, for making time to come recently to my home State of Rhode Island earlier this month for the Rhode Island Defense and Oceanography Days, the first annual event, as you know. The organizers, from everything I have heard, and the attendees were incredibly grateful for your participation; and I have heard from many of the people that were there that your speech was a real highlight of the event. So just let me once again add my personal thanks to you for being here.

Well, let me start off the hearing by saying that, Secretary, you have many admirers on this committee, and myself included. We all want you to succeed in making the S&T Directorate the finest research, development, testing and evaluation organization in the Federal Government. As I said many times before, we couldn't have a better person than you in running that outfit right now; and we are grateful for your service once again.

Let me start off by saying that a strategic plan is an extremely important document for any organization but particularly a research and development organization like yours. Sadly, I believe a lack of strategic planning contributed to the significant problems that plagued the S&T Directorate in previous years, certainly prior to your arrival.

(1)

Now, although I believe, Mr. Secretary, that you are moving the S&T Directorate in the right direction, I am somewhat disappointed in the plan that we are here to discuss today fully. But let me say there are a few highlights that I wanted to just kind of point to on the positive side before we get to addressing the concerns that some of us have about the plan itself and maybe some lack of the details.

But on the, certainly, positive side, I am happy with the formal and rigorous IPT process. It certainly connects the S&T Directorate to the consumer.

Second point, I would like to acknowledge the strategic plan has goals for future investment and describing the percentage that budgets will be allocated. Those are important.

And, finally, your R&D plan has work statements and budget numbers.

So all of those I was certainly pleased to see.

What I am somewhat disappointed about centers around two areas. First, I have to say this isn't quite the strategic plan that I had expected to see; and, second, the plan is plagued by several deficiencies.

The Homeland Security Act of 2002 required the Department to produce a National Strategic Plan for Science and Technology. But, despite repeated calls from Congress over the years, the Department still hasn't released the plan. And I understand this doesn't completely rest just with S&T. This is overall the Department of Homeland Security itself that needs to be more involved here.

But what we have before us today is called the S&T strategic plan, but it really appears to have been submitted merely to satisfy report language in the fiscal year 2007 appropriations bill, and this is not the strategic plan that is more than 5 years overdue.

During the consideration of the Homeland Security Authorization Bill, again this year many of us again urged that DHS finish this plan; and we included in the bill some additional measures for S&T to consider in developing the plan. Now those measures include plans to enhance the workforce, a methodology for prioritization and funding research and, most importantly, program performance measurements, in other words, metrics.

Now the bipartisan coalition that worked on this measure believes that these are extremely important elements of a good strategic plan, yet the document that is before us today really lacks a sophisticated discussion of these topics in particular.

So, Secretary Cohen, I am concerned about these deficiencies. I understand that you intend submitting a National Strategic Plan to the committee soon, and I certainly will hope that it comes in the following weeks and not months, and certainly not years. But, in the meantime, the plan that you submitted, I see it lacks much of the substance necessary to make it an effective strategic document. The plan before us might be described as a business or an organizational document, but it is certainly not what I was looking for in terms of a strategic document.

Although you have described the organizational structure and roles and responsibilities of the organization, the document seems to lack a high-level strategy or vision for the S&T Directorate. The plan in several areas misses several critical points.

Now, though the committee specifically requested the inclusion of metrics, the plan doesn't discuss the use of metrics to evaluate the effectiveness of R&D programs within S&T; and, according to the strategic plan, metrics and measures are still under development. Now the failure to include metrics raises questions about the Directorate's ability to evaluate its own programs for effectiveness; and, further, the plan doesn't describe how the Integrated Product Teams process connects to a larger Homeland Security R&D strategy.

Now it doesn't explain also how IPT topics are chosen or how IPTs relate to the attainment of strategic rather than tactical goals. Nor does the plan explain the origin of future year budget estimates and prioritization decisions. The plan contains no explanation for the prioritization of different divisions, which makes it difficult to justify your 5+year research and development budget.

I am also curious as to why some divisions are valued higher than others. For instance, I would like to know why the chem/bio division receives almost 35 percent of the entire budget, while the Command, Control and Interoperability Division receives less than 10 percent. And the plan divides funding goals for basic research, innovation, transition and other spending, but there are no clear explanations of how each program's budget is being split to meet these percentage goals.

And the plan fails to clarify the distribution of performers of S&T Directorate research. Though industry, government and university interactions are briefly mentioned, it doesn't appear from the strategic plan or the R&D plan whether a strategic choice has been made about who will perform S&T R&D.

Now from my years of work on the Armed Services Committee, where you and I had the opportunity to work closely before, I can tell you that this plan really pales in comparison to the strategic plans submitted by the Department of Defense. Now DOD traces a clear path from concept to required capabilities, to goals and implementations, to possible technical solutions; and as I read the plan that is before us today, it doesn't really do that.

Now, finally, the plan contains gaps between innovative capabilities and basic research activities. DHS basic research funding may not be fully utilized if effective policies are not placed to transition the technology development, and we have no way of assessing those policies, because they haven't been spelled out here.

So though I am eager to discuss this in further detail—and I guess I will stop there, and I won't get into the 5-year research and development budget right now, but, needless to say, I am troubled by some of the numbers I am seeing in critical programs like cybersecurity.

But these—all the things I have raised, Secretary, are, you know, not to detract away from the good work that is being done at S&T; and, in many ways, I am sure there is much more good that we can point to. We are in this together as a team, and I want to make sure that you have all the resources at your disposal so that the S&T and DHS is functioning at maximum capacity.

I look at this as a team effort, and we want to be partners with you in this. So I guess tough love is what the philosophy is we are working with today and always. But, again, it is a team; and,

Under Secretary, I know that the Directorate is in better shape now than it was even a year ago. I applaud you, your team for that and all the hard work and your dedication and your patriotism.

I guess, you know, the points we have raised here just highlight that we still have a long way to go, but again look forward to continuing to work together. Again, I thank you for your time, your service, and I look forward to our continued work together. And I want to thank you and your staff for what you are doing.

The Chair now recognizes the ranking member of the subcommittee, the gentleman from Texas, Mr. McCaul, for the purposes of an opening statement.

**PREPARED STATEMENT OF THE HONORABLE JAMES R. LANGEVIN, CHAIRMAN,
SUBCOMMITTEE ON EMERGING THREATS, CYBERSECURITY, AND SCIENCE, AND
TECHNOLOGY**

Good afternoon, and thank you Under Secretary Cohen for testifying at today's hearing.

If I can take a quick moment before we get to today's topic. I'd like to say a special thanks to you for making the time to come to my home state earlier this month for the first annual Rhode Island Defense and Oceanography Day. The organizers and the attendees were so grateful for your participation, and I have heard from many people that your speech was a real highlight of the event. So let me just add my personal thanks to you for being there.

You have many admirers on this Committee, and we all want you to succeed in making the S&T Directorate the finest research, development, testing and evaluation organization in the Federal government. A strategic plan is an extremely important document for any organization, but particularly a research and development organization like yours. Sadly, I believe a lack of strategic planning contributed to the significant problems that plagued the S&T Directorate in previous years.

Although I believe the Under Secretary has been moving the S&T Directorate in the right direction, I am disappointed in the plan that we are here to discuss today. I am disappointed for two reasons: first, this is not the strategic plan I expected to see. And second, this plan is plagued by significant deficiencies. The Homeland Security Act of 2002 required the Department to produce a national strategic plan for science and technology. Despite repeated calls from Congress over the years, the Department still hasn't released this plan.

What we have before us today is called the "S&T Strategic Plan." But this appears to have been submitted merely to satisfy report language in the FY07 Appropriations bill. This *not* the national strategic plan that is 5 years overdue. During consideration of the Homeland Security authorization bill this year, many of us again urged that DHS finish this plan. And we included in the bill some additional measures for S&T to consider in developing the plan. Those measures include plans to enhance the workforce; a methodology for prioritization and funding of research; and, most importantly, program performance measurements. In other words, "metrics." The bipartisan coalition that worked on this measure believes that these are extremely important elements of a good strategic plan. Yet the document before us lacks any sophisticated discussion of these issues.

Under Secretary Cohen, I am disappointed in these deficiencies. I understand that you intend on submitting the "national strategic plan" to this Committee soon—and I hope it will come in the following weeks—not months, and certainly not years. But, in the meantime, the plan you have submitted lacks much of the substance necessary to make it an effective strategic document. The plan before us might be described as a business or an organizational document. But it is certainly not a strategic document. Though you have described the organizational structure and roles and responsibilities of the organization, this document lacks a high-level strategy or vision for the S&T Directorate.

Your plan misses several critical areas. Though the Committee specifically requested the inclusion of metrics, your plan does not discuss the use of metrics to evaluate the effectiveness of programs within S&T. According to the Strategic Plan, metrics and measures are still under development. The failure to include metrics raises questions about the Directorate's ability to evaluate its own programs for effectiveness. Further, your plan does no describe how the Integrated Product Teams (IPT) process connects to a larger homeland security R&D strategy. It does not explain how IPT topics are chosen or how IPTs will lead to the attainment of strategic,

rather than tactical, goals. Nor does this plan explain the origin of future-year budget estimates and prioritization decisions. The plan contains no explanation for the prioritization of different Divisions, which makes it difficult to justify your "five year research and development" budget.

I am curious why some Divisions are valued higher than others. For instance, I'd like to know why the chem/bio division receives almost 35% percent of the entire budget, while the Command, Control, and Interoperability division receives less than 10%. Your plan divides funding goals for basic research, innovation, transition, and other spending, but there is no clear explanation of how each program's budget is being split to meet those percentage goals. Your plan also fails to clarify the distribution of performers of S&T Directorate research. Though industry, government, and university interactions are briefly mentioned, it is not apparent from the Strategic Plan or the R&D Plan whether a strategic choice has been made about who will perform S&T R&D. From my years of work on the Armed Services Committee, I can tell you that this plan pales in comparison to the Strategic Plans submitted by the Department of Defense. DOD traces a clear path from concept to required capabilities, to goals and limitations, to possible technical solutions. Yours does not.

Finally, your plan contains gaps between innovative capabilities and basic research activities. DHS basic research funding may not be fully utilized if effective policies are not in place to transition them to technology development, and we have no way of assessing those policies because they have not been spelled out here. Though I am eager to discuss this in further detail, I will stop there. I will not get into the "five year research and development budget" right now, but needless to say I'm troubled by some of the numbers I'm seeing in critical programs like cybersecurity.

Under Secretary Cohen, the Directorate is in better shape now than it was a year ago, and I applaud you and your team for that. But this document should remind us all that there is still a long way to go. I thank you for your time and your service, and look forward to continuing to work with you and your staff on these issues.

Mr. McCaul. Thank you, Mr. Chairman.

And, Admiral, I welcome you back to the hallowed halls of Congress. It is a trip that some people don't like to make, but I am glad you are here and smiling.

I also want to say how delighted I was to hear about your trip to Texas, to my home State, to Austin and the University of Texas A&M and to get a little bit of taste of the hill country with the Peach Festival in Fredericksburg. It is great to hear.

War spurred the creation of most U.S. Government science agencies. Likewise, since 9/11, the global war on terrorism mandated the creation of the Homeland Security Research Enterprise. Our future homeland security capabilities will be determined by today's investment in science and technology. The Science and Technology Directorate has to evaluate carefully what our homeland security needs are, think creatively about how technology can help meet those needs and then direct the resources necessary.

You have made many changes in the management of S&T, and they have occurred in the past 9 months. This oversight hearing gives us sitting here an opportunity to provide you with feedback and to give constructive criticism and praise where it is certainly deserved. You deserve praise for finally standing up a Homeland Security Research Enterprise and for bringing some order to the chaos that ensued at the S&T Directorate before you arrived.

You also deserve praise for finally getting the Directorate to execute a coherent strategic plan. The strategic plan clearly describes research areas and programs for each division and provides a list of technology needs, milestones, budget projections and qualitative mission statements for each program. It is, in my view, a solid organizational document that demonstrates how you have positioned the Directorate for success, and I thank you for that.

But I will say the plan lacks some fundamental information that is needed to up the strategic factor, if you will, in what is supposed to be a strategic document; and there are four areas I want to focus on.

The first is that the S&T needs discrete goals and target metrics. Without quantifiable metrics, it would be difficult to gauge success of S&T's research programs.

Second, those metrics must be used as part of a review and assessment process to assess the program's strengths and weaknesses, provide recommendations and review overall program effectiveness.

The third, the plan needs to do a better job at conveying the balance of its investment across basic applied and advanced research and development.

Fourth, and finally, S&T needs to identify and document areas in which other Federal agency resources are relied upon.

S&T has a complex and difficult mission which requires a rigorous strategic planning process. The plan which we are examining today is a first step in this process, and I look forward to seeing more improvements in the S&T's strategic planning.

Let me again thank you for being here. It is always a delight having you here.

I yield back my time.

Mr. LANGEVIN. Thank the gentleman.

Other members of the subcommittee are reminded that, under the committee rules, opening statements may be submitted for the record.

[The information follows:]

PREPARED STATEMENT OF THE HONORABLE MICHAEL T. McCaul, RANKING MEMBER, SUBCOMMITTEE ON EMERGING THREATS, CYBERSECURITY, AND SCIENCE AND TECHNOLOGY

Thank you Mr. Chairman.

War spurred the creation of most U.S. government science agencies. Likewise, 9/11 and the broad scope of threats against the homeland mandated a new technology enterprise to face down these threats—a homeland security research enterprise. Indeed, in this political landscape in the midst of this war on terror, technology is every bit as important in ensuring homeland security as it has been historically in establishing military superiority in the Cold War and the Gulf War.

Our future homeland security capabilities will be substantially determined by today's investment in science and technology. That's a tall order. To determine investment areas, prioritize them, and rationally balance the investments across all disciplines, the Science & Technology Directorate (S&T Directorate) has to evaluate carefully what our homeland security needs are, think creatively about how technology can help meet those needs, and have the wherewithal to marshal and direct the resources necessary.

In addition, the S&T Directorate has to operate unlike any other U.S. science enterprise before. In the short term it needs to survey and promote the deployment of existing technologies, often across agency lines. In the long term, it will need to develop breakthrough technologies. And it must be both lean and flexible enough to respond to emerging threats. The S&T Directorate represents a new kind of organization purposely created to cross agency, disciplinary, and pectoral lines.

Under Secretary Cohen, your appointment at the helm of S&T has been a turning point. It is especially true that Members of this subcommittee have witnessed many needed changes in the management of S&T in your nine months at DHS. This oversight hearing gives us sitting here an opportunity to provide you with feedback—to give criticism or guidance where needed and praise where deserved. I think there'll be a bit of both today.

You deserve praise for finally standing up a homeland security research enterprise, building the organizational framework and capacity that will enable you to

support your customers and end users in their homeland security missions. You deserve praise for bringing some order to the chaos that was S&T by finally getting the Directorate to execute a classic technology road-mapping exercise, the result of which is your 5 year Strategic Plan. It is only through this type of coherent planning that you will win the allegiance of other agencies and fix their technology roles and commitments, as well as entice the Department's components to adopt the technology S&T develops.

The 138 page Strategic Plan clearly describes research thrust areas and programs for each division and office and provides a list of technology needs, milestones, budget projections, and qualitative mission statements for each program. It is a solid organizational document that demonstrates how you have positioned the Directorate for success. However, the Plan lacks some fundamental information that is needed to up the "strategic" factor in what is supposed to be a "strategic" document. Now that you have clearly built capacity, I would like to see the next iteration of this Plan address some key strategic issues that will demonstrate S&T's capability—four of which I will mention today.

First, S&T needs discrete goals and target *metrics*. Without quantifiable metrics, not just qualitative, it will be difficult to gauge the success of S&T's research programs.

Second, those metrics must be used as part of a *review and assessment* process. S&T's strategic planning process can be improved by incorporating internal and external reviews of its programs—where outside experts can be brought in to assess the program's technical, budgetary, and programmatic strengths and weaknesses, provide recommendations, and review overall program balance and the adequacy of the approaches used.

Third, the Plan needs to do a better job at conveying the *balance of its investment across basic, applied, and advanced* research and development. While S&T has stated investment goals for Basic Research, Innovation, and Transition, the Plan does not identify which programs are in which of these categories, thereby making it difficult to determine whether there is an appropriate balance across the stages of research.

Fourth, and finally, the Homeland Security Act of 2002 purposely created S&T to cross agency lines, to coordinate federal homeland security research activities. Identifying and documenting programmatic areas in which other federal agencies resources are relied upon is an important exercise, if only to be able to plan for future years.

S&T has a complex mission which requires a rigorous strategic planning process. The Plan which we are examining today is the first step in this process and I look forward to witnessing successive improvements in S&T's strategic planning with the goal of elevating the Directorate to a powerful U.S. research entity that commands respect, marshals cooperation from other parts of the government, and delivers technology that allows Americans to feel safe again.

Thank you, Mr. Chairman, I yield back my time.

Mr. LANGEVIN. I now welcome our witness, the Honorable Jay Cohen, who is the Under Secretary of Science and Technology at the Department of Homeland Security.

Jay M. Cohen is a native of New York. He was commissioned in 1968 as an ensign upon graduation at the United States Naval Academy. Admiral Cohen has a long and distinguished career in the Navy, commanding several ships and submarines during his tenure. He was promoted to the rank of Rear Admiral in 1997. Prior to his arrival at S&T, he served as Chief of Naval Research.

Under Secretary Cohen was sworn into his current position at the Department of Homeland Security in August, 2006. And I reiterate what I said in my opening statement, that all of us here appreciate your service to our country. We could not have a better person, more capable and more talented than you serving in the Under Secretary position at S&T.

So, without objection, Under Secretary Cohen's full statement will be inserted in the record; and I now ask you to summarize your statement for 5 minutes.

Secretary COHEN.

**STATEMENT OF HON. JAY M. COHEN, UNDER SECRETARY,
SCIENCE AND TECHNOLOGY DIRECTORATE, U.S.
DEPARTMENT OF HOMELAND SECURITY**

Mr. COHEN. Chairman Langevin, Congress McCaul, Congresswoman Lofgren, Congresswoman Christensen, and Congressman Etheridge, it is a great honor and privilege for me to come and testify before your committee.

It seems like just the blink of an eye from last August when we discussed the four “gets”: get the books right, get the content right, get the people right, get the process right, and the four B’s, which I saw as the threats: bombs, borders, bugs, and business, which I defined as the underlying cyber backbone that enables our electronic society to this day.

I know you can’t read it, and I can’t read it, but this caterpillar chart, as we call it, just is an attempt to give an appreciation for all of the interaction with the Congress, with industry and all of the other initiatives that we have put in place, as you so eloquently addressed, over that period of time.

But it is about making the Nation safer, and we have a ways to go. And I appreciate your tough love. It reminded me of my mother. I won’t use adjectival grades here, but I am sure, much like you, when I would come home with my report card, she never concentrated on the highest grades. It was always, what is this B or what is this C? And through that tough love she motivated me to achieve more. So I know together we will do that.

I do appreciate very much your recognition of the progress that we have made, and I am also very mindful of the progress that needs to be made. I know in your questions I think we will be able to address some of the details, and I look forward to that.

I feel a little bit like the Verizon commercial today. Behind me—I normally don’t bring my team with me. I don’t want them to see, you know, the Christians versus the lions, but in this case they have worked so hard for so long, they are my network. And I know they can hear me. So to the extent that you think we had made progress, I want to give them the credit; and perhaps they will stand just for a moment to be recognized, please. Thank you.

Mr. LANGEVIN. Ladies and gentlemen, thank you for your dedication and your service. As we well know, you are an important part of the team; and it is good to know you are there behind Secretary Cohen. Thank you.

Mr. COHEN. To the extent that we have more to do, I know you will—and I expect you to—hold me accountable.

But it has been an exciting time. As you know, I believe in an open and interactive process. We had our first S&T Stakeholder Conference in May here at the Reagan Center, and we are so pleased that more than half a dozen of the congressional staff members came and participated in that. It was a 4-day conference; and the message we gave to industry, laboratories, universities and our international partners is that we are open for business, and we know how to do business. And I think they got it.

I know you read the press on a regular basis, and I think an important part of what we do is to continue the optimism that America has always enjoyed in its dependence on science and technology to solve the problems of the day. As Congressman McCaul has indi-

cated, so many things are born out of tragedy or war, but in the end it is a good thing.

So I have had the Inspector General involved in all of our IPT process, your staff, as they have desired. I take your admonitions very seriously. It is a new Department. We are working hard. It is a work in progress, and I am satisfied that we will continue to make progress with your help.

So, with that, I welcome your questions, I welcome your oversight, and, to the extent that we can do better, I look forward to engaging with the committee in a bipartisan, nonpartisan way, which I am so appreciative of. I look forward to your questions, Mr. Chairman and gentlemen and ladies.

Mr. LANGEVIN. Thank you, Secretary Cohen. I just want to again thank you for your testimony and for being here.

[The statement of Mr. Cohen follows:]

PREPARED STATEMENT OF THE HONORABLE JAY M. COHEN, UNDER SECRETARY SCIENCE AND TECHNOLOGY DIRECTORATE, U.S. DEPARTMENT OF HOMELAND SECURITY

Good morning Chairman Langevin, Ranking Member McCaul, and distinguished members of the Subcommittee. It is an honor to appear before you today to present the strategic plan for the Department of Homeland Security (DHS) Science and Technology Directorate (S&T Directorate).

I want to thank the committee for its leadership in support of the S&T Directorate. With your guidance, the S&T Directorate has strengthened its organization and processes to better serve the American people and secure our homeland.

This strategic plan provides the framework that will guide the Directorate's activities over the next five years. It focuses on the four key areas ("the four gets") that we must excel in to accomplish our mission: We must get the organization, the people, the books, and the program content right.

This plan presents my strategic approach and business model for "the four gets".

The focus of the first section of the plan, *The S&T Directorate—Aligned for Success*, is on getting the organization right. It lays out how the S&T Directorate's re-aligned structure breaks down organizational barriers and fosters connections and collaborations among programs.

The second section of the plan, *Balancing S&T Directorate Investment*, addresses getting the program content and the books right. It speaks to how the S&T Directorate will stay customer-focused and output-oriented by investing in a balanced portfolio of advanced research programs, the planning of which is guided by customer-led Capstone Integrated Product Teams. This approach enables us to more clearly define what we will do for our customers, how we will do it, and how we will measure results. We will also ensure that we stay focused on the priority areas for the S&T Directorate. This approach will ensure we deliver critical homeland security technologies that our nation needs in the quickest, most cost-effective manner.

The third and fourth sections of the plan address how to populate this business model with the right mix of people and skills to accomplish our mission. The third section, *Enabling U.S. Leadership in Science and Technology*, discusses how the S&T Directorate will leverage the DHS laboratories, the Homeland Security Institute, the DHS Centers of Excellence, the DOE National Laboratories, and international and intergovernmental partnerships to meet homeland security research requirements.

The fourth and final section of the plan, *Developing our Professional Workforce*, recognizes that as a knowledge-based organization, the S&T Directorate's most valuable resource is its people. The leadership principles and management initiatives outlined in this plan make hiring, retaining and motivating a quality workforce a priority.

Accompanying this strategic plan are three attachments that provide more details on topics discussed in the plan:¹

Attachment 1: S&T Directorate Five-Year Research and Development Plan (FY 2007–2011)

¹See the Committee file.

Attachment 2: HIPS and HITS (S&T Directorate Homeland Innovative Prototypical Solutions and High Impact Technology Solutions)

Attachment 3: Capstone IPT Representative High Priority Technology Areas

Members of the Subcommittee, I thank you for the opportunity to meet with you today to present the S&T Directorate's strategic plan and business model. This strategic plan and all the initiatives we have undertaken in the DHS S&T Directorate since August 2006 have been with the full knowledge and bi-partisan engagement of the Congress. I welcome and very much appreciate the wise counsel, advice, and oversight in helping me meet DHS mission requirements. As we move forward, I am confident that this plan will allow us to address our customers' needs and drive the development of technologies that will make our Nation safer. The world is a dynamic place and we must remain flexible and responsive as threats and opportunities evolve. I will be happy to take your questions now.

Mr. LANGEVIN. I will remind each member that you each have 5 minutes to question the Secretary, and I now recognize myself for questions.

Secretary this committee, along with several other committees, has asked repeatedly for the strategic plan required by the Homeland Security Act. Several months ago, your staff had notified me that you were planning on releasing two plans for delivery in June. Now, according to your staff, the first 5-year plan and business model for S&T was required by the fiscal year 2007 appropriations bill, while the other is a strategic plan required by Section 302 of the Homeland Security Act of 2002.

I have two questions here, is where is the National Strategic Plan required by the Homeland Security Act and how would this be different from the strategic plan that you sent us a few weeks ago? And the other is just we need to know why you submitted a report to satisfy report language prior to submitting a report required under the statutes.

Mr. COHEN. Yes, sir. Your questions are right on. I will answer the second question first.

As you may remember—and I apologize for any miscommunication on this. When I testified at the start of this Congress, you and other members addressed this specifically, the national plan, as well as the need to get my house in order with a strategic plan. And at that time, as I remember, I testified that with all the process improvement and the changes that we were making, not just at S&T in Homeland Security but this was a process change in how we do business throughout the Department, that my first focus was on getting my house, my processes, my planning in order; and I committed to get that to you in June.

As you know from our many years of working together, I try and be a man of my word; and so I am pleased that, with a lot of jawboning and arm-twisting through the bureaucracy and hard work by my people, we got you the S&T Directorate Strategic Plan. So that is what I delivered.

I believe I also stated at the time that I felt very strongly in support of the enabling legislation and that being the national plan. I do in fact have the national plan. It had been worked on for 3 years, long before I got there.

But the enabling legislation, which states developing in consultation with other appropriate executive agencies, has to this point been interpreted, not by the Congress but by my people, as to mean concurrence by other departments, executive departments, HHS, DOD, and on and on. Because the responsibilities are very broad,

as you have indicated; and that is a torturous process, as you can imagine.

So what I said in my testimony was, to the extent that I could get this to you by June, I would work hard to do that. I have not been able to achieve that. But because I feel so strongly about the need to integrate the national plan, in addition to my Directorate's plan, I am going to take a different interpretation. I am going to take the literal interpretation of "in consultation", and I will work this through the shop chain now, where the other departments, executive branches, et cetera, get to make comment. But I will work to get this through OMB, and I will try and do that to the best of my ability before the end of this fiscal year, and we will incorporate in that many of the issues that you have raised where I may not have met the mark with my strategic plan.

Mr. LANGEVIN. Mr. Secretary, I know you are a man of your word. I respect you as being such, and I know that you will do your best to get that to us as soon as possible.

Mr. COHEN. Sure.

Mr. LANGEVIN. The subcommittee on another topic heard devastating testimony, to be quite honest with you, just last week about the myriad cybersecurity vulnerabilities within DHS itself. Through the committee's work, we have identified hacking and viruses and other threats in cyberspace to be one of our greatest vulnerabilities and one that can have significant real-world consequences, as you would well know. Virus makers and hackers are improving their skills much faster than protective measures are being created. I am disappointed and concerned, actually, that cybersecurity is not highlighted in the strategic plan; and I consider the plan of wanting to spend a total of only \$37 million in cyber R&D from now through fiscal year 2011 to be a serious oversight.

This program has not really been supported properly, taken seriously, as I think it needs to be. Just last month, the House passed a measure authorizing \$50 million in cybersecurity R&D at the S&T Directorate for fiscal year 2008 alone.

Now, can we ask you to answer this, that why haven't we seen more interest in the S&T Directorate regarding cybersecurity RDT&E, and why aren't we seeing any cyber High Impact Technology Solutions, HITS as you called them, and Homeland Innovative Prototypical Solutions, or HIPS as they are called? And my final part of this question, are you funding any innovative game-changing research for cybersecurity?

Mr. COHEN. Well, Chairman, number one, I appreciate very much your leadership in this area.

As you know, on day one, my very first testimony, we talked about the four B's, and the final B was business. I testified that that was the underlying cyber backbone that enables our economy; and we know, as you stated and this subcommittee is very aware, real-world events, that this is a new form of warfare.

Responsibilities for that are divided and distributed, as I believe they should, throughout the government. But I have a clear responsibility to enable, with science and technology, the underlying breakthroughs, where they are possible, for the DHS Department to make the Nation more secure.

Now this is something that every one of us deals with every day. We spend 100 or more dollars out of our own pockets on Norton or McAfee, et cetera, as we try to protect our own computers. And you are much more familiar than I am with the threats to identity theft and how people are now being much more hesitant in using the Internet, which is the wild, wild west. This is a case of where the technology has outstripped the regulations and the safeguards that are necessary; and all of us, individually and different components of government, are trying to come to grips with this.

While I am not an expert in this area, and I won't say I stayed at a Holiday Inn last night, I did do Y2K for the Navy, and we seem to have gotten through that New Year's Eve fairly well. So I do appreciate this very much.

In my model, I have made, and you know this, S&T in large measure 50% of my budget, customer-focused, output-oriented. I slave my precious dollars to the customer. In this case, the customer in cyber is predominantly Greg Garcia, who we call the cyber czar in the Department of Homeland Security. This process started in earnest in November, about the time Greg came on board. He has been working very closely with my Director of Transition, Bob Hooks; and we have satisfied about 80 percent of the requests that he has made in that Integrated Product Team for underlying S&T investment to enable his mission. That is not enough. We can and will do more.

A comment was made about how the overall budget is handled. As you are aware, when the Department was first stood up, the Congress and the administration allocated about a third of the S&T, about \$500 million to nuclear/radiological, about a third to chem/bio, and a third to everything else. And "everything else" for me addresses the 22 components and agencies that are my customers in law for Homeland Security.

Is that balance right? I don't know. That is up to the Congress and the leadership. I can make suggestions. We make technology opportunities available.

Now, you asked about our innovation, which represents 10 percent of my budget. This area falls under Command, Control and Interoperability; and I had to go from—my words—zero to hero. We had to quick-start an innovation portfolio, because none existed focused on the customer or on our divisional structure, because we weren't organized that way.

I do not currently have an innovative initiative for the cyber world, but I would welcome Greg Garcia, Charbo, or others to come forward, and I talk about it as their hopes and dreams. What can't they do with existing means but need to do to make the Nation safer? And as they do that, as you know, I am prepared to come to the Congress, request above threshold reprogramming. I am not shy. Cancel other programs as appropriate.

In the CCI area, we have been much more focused on interoperability for the first responder in time of a major catastrophe. So it is an important area.

We have a methodology called the Technology Oversight Group, which involves the Deputy Secretary, the Under Secretary for Management Policy and the CFO, where I bring unfunded mandates from my customers and make proposals to the Technology Over-

sight Group to then reallocate funds. This is an important area. It must be addressed. I look forward to working with the committee on this.

I hope that is a satisfactory answer, because it is an honest answer.

Mr. LANGEVIN. We will definitely work closely with you on this cybersecurity issue. And I would hope to see not only Secretary Garcia coming to you with his needs and ideas, but I would like to see S&T be much more proactive, too, in developing in a sense that next generation cybersecurity defense so that we are staying one step ahead of the bad guys.

You know, in our last hearing on cybersecurity, when we looked at the FISMA scores and DHS basically got a D on the FISMA scores, that was really disturbing. It should concern all of us. I asked the folks in the cybersecurity division how can they expect to be the leader for the rest of the country and the rest of the government on cybersecurity issues when they are getting a D on their FISMA scores?

Now I recognize we also, in fairness, asked the question, if everybody did everything right and everybody in government, all agencies, got an A on FISMA scores, would we be safe? And the experts universally acknowledged, no, we wouldn't be completely cybersecure, so to speak.

But, clearly, just at the very basic level, Homeland Security Department has a long way to go toward closing the vulnerabilities with respect to cybersecurity; and that is one area I plan to spend a lot of time in the future trying to close those gaps.

My time has long expired; and I would now recognize the ranking member, the gentleman from Texas, for 5 minutes.

Mr. McCaul. Well, thank you.

I think the work of this subcommittee and of your office is probably the most important work in the homeland security arena. I think technology is going to be the answer for so many of our problems and so many of our threats. I say that very sincerely; and I know you believe that as well, Admiral. I think you are doing a darn good job just 9 months into it.

I want to pick up on where the Chairman left off, because we are joined in this issue in a very bipartisan way.

Imagine agents of a foreign power breaking into the Pentagon and taking file cabinets out and getting caught. That would be a sensational national incident. National security would be invoked. Yet in the virtual world—that is the physical world, but in the virtual world that is happening. I think it is something that the American people really don't seem to understand.

I think, since 9/11, cybersecurity needs to be taken more seriously. When you consider the capabilities that foreign governments have to break in and steal information from the United States Government, when you consider the even more worse-case scenario of a foreign government terrorist rogue nation that has capability to break in and shut down critical infrastructures, power grids, electricity, financial institutions that could be hacked into and modified, this is all very serious.

So the one is a follow-up to the chairman. When I saw the budget at 1 percent—I did appreciate your answer previously. And when

I saw the cybersecurity at 1 percent in the budget, I got to tell you I really feel like we can do better than that. If you need the funding, I think it is incumbent upon you to ask for that as well.

I want to see if you could comment on that statement but also the idea that the chairman and I hope to introduce together and that is the idea of a National Vulnerability Assessment on Cybersecurity. That would encompass not only the Federal agencies, Federal Government but also the private industry infrastructures that, frankly, are, 97 percent of it, outside the Federal Government. In my view, after the testimony we heard, the briefings we have received, I believe that is something that is really long overdue.

And not to inundate you with too much in one round of questioning, I don't know if we will get a second round before the bills go off, but, obviously, one of the biggest issues in this Congress is the border, border security.

Mr. COHEN. Sure.

Mr. McCaul. I think, in my view, technology is going to be the answer for that. I would like to see more technology than fencing. I would like to see more virtual walls than physical walls. And I know that was budgeted at 5 percent as well. If you could comment on the needs there, where are we going in terms of securing the border technology and is 5 percent an adequate number?

Mr. COHEN. Well, Congressman McCaul, first of all, I could not agree with you more. I think it is appropriate that this sub-committee is entitled Emerging Threats, because so much of what we are dealing with is emerging. And in the area of cyber and so many other areas of warfare it is measure, countermeasure, counter-countermeasure. You never get to the end point. You continuously have to work, remain alert and improve.

So the threat in cyber is real. You have identified that. You just have to look the Estonia incident of earlier this year to understand the magnitude of what it can do to a society.

We talked a little bit about the innovation profile. At the end of the day, I believe that New York was a target on 9/11 not because of ethnicity or other reasons, but it was the financial capital of the world. It was the World Trade Centers. It was Wall Street. This is an image that resonates around the world.

And while it is not cyber specific, one of our very first innovations was a resilient electric grid, which I am very pleased to tell you we are on contract with Consolidated Edison and American Superconducting. The purpose of that is nationwide, but it is focused in Manhattan to ensure the reliability of the underground stations so that on hot days, when one may become overloaded and you get the sequential brownout or blackout, as California and other States have suffered, that we can use superconducting—this is cutting-edge technology from New England and from the University of Texas—to go ahead and prevent that. And, by doing that, keep up the financial district, keep up all our services that are cyber-enabled. So it is not a one-to-one correspondence but today power and cyber and IT all go together.

The 1 percent funding is at this point in time what the customer, Greg Garcia, asked for and was able to justify. But he is very rapidly coming up to speed. He is working with associations, working with industry. He hears you.

I am delighted to have not only Dr. David Boyd, who is my division director for Command, Control and Interoperability, but we have Dr. Maund, who I understand and read his testimony before your committee, where he focused on we need to drive security improvements, we need to discover solutions to select, prevent, and respond to cyberattacks.

And finally, and maybe most important, we need to deliver new, tested solutions for cybersecurity threats.

So I would say that 1 percent is minimum funding for any program I have. We have to and will do better.

I have shared with you the Technology Oversight Group. We will make the case, as the opportunities create themselves. And to the committee I commit to get smarter and to work harder with my people, Dr. Maund, et cetera, to define technology opportunities, where we might demonstrate capabilities and methodologies that we haven't thought of in the past. But I don't have those just yet.

You asked about a national assessment. I think that that would be of great value. It must be interagency. In my experience in working with the Congress, this is an area where associations in their testimony can help a great deal to focus what needs to be done. Because at the end of the day they are representing the constituents, and they have to live and execute the results of what we may do.

And, finally, on border security, this is an area where we are very much engaged with all of the border aspects. We show it, of course, in our Integrated Product Team. It is about 5 percent of my budget.

Secretary Chertoff has testified that the SBInet Secure Border Initiative is using state-of-the-art technologies, because he wants to facilitate making the border secure. Whether it is an actual fence, a virtual fence, monitoring, there are many different approaches based on geography and where it falls.

But I think you are aware that, working with Greg Giddens and working with CBP, we have established, and did this some time ago, an experimentation station, which I encourage you to visit in Nogales, where anything that is going into SBInet is tested—this is part of my test and evaluation hat—as well as new ideas, as well as feedback from our Border Patrol agents, et cetera.

So as SBInet progresses, as we look to the next round, we will have additional requirements. But in the area of innovation, what I am trying to do with tunnel detect, how we can use UAVs potentially, we have got a proposal, to find these tunnels real time before they are a danger, to have what we call SCOPE, which is Scalable Common Operating Picture, which is to have CHLOE, which is UAVs doing high-altitude surveillance in direct support of our CBP. These are areas where I am trying to embarrass the program of record, de-risk these new leap-ahead technologies. And when I have de-risked them in S&T, so I don't put the program of record acquisition billions of dollars at risk, we then make them available to CBP, to SBInet to incorporate them. And I am very pleased to tell you that Prime, Boeing and DRS are working with us in this area; and that is very good news.

And, finally, we talked a little bit about alignment in the CCI area. I previously testified as to our Centers of Excellence. And I

thank you so much. In an age when we are challenged with developing our work force and young people in middle school are turning away from science and math—and this is something we discussed at Texas A&M, we discussed in Rhode Island. It is our future.

We now are aligned, and as you can see in Command, Control and Interoperability, thanks to David Boyd and his efforts, we have strong backup there for the underlying basic research, where the breakthroughs will come. But I did not previously have the national labs aligned.

On the 1st of May, we had the first-ever meeting of all of the directors of all of my and the DOE labs. We had my two counterparts from DOE there, and we came up with a managed governance model. I asked the national labs to align as the other pillar, universities and laboratories of basic research, with my divisions; and, as you can see, Command, Control and Interoperability has Los Alamos, Livermore, Pacific Northwest, Oak Ridge, the National Test Center, et cetera—

It is exciting. This is an area where we have brought people to the table. Forty percent of my basic research budget will go to the national labs, forty percent will go to the universities, and twenty percent will be openly competed. I think that is a good model. It is the model we evolved to in Navy. It seems to have worked there. I think we are at a stepping-off point, and I know you will hold me accountable, but I want to let you know we take this very seriously.

Mr. McCaul. Thank you, Admiral.

Mr. LANGEVIN. Thank the gentleman for his questions.

The gentlelady of the Virgin Islands is now recognized for 5 minutes.

Mrs. CHRISTENSEN. Thank you, Mr. Chairman; and welcome back, Admiral Cohen.

I would just like to piggyback on the last thing that you mentioned about the Centers of Excellence. In this document you talk about having some minority serving institutions as Centers of Excellence. Can you tell me how many or what percentage of those Centers are at Historically Black Colleges and Universities, or some ballpark? If you don't have the exact number.

Mr. COHEN. The short answer is too few, which is why, with the help of the Congress, in the fiscal year 2007 legislation—as you know, the Centers of Excellence were at risk last August because we could not show an alignment of the Centers of Excellence, as mandated in the enabling legislation, to our investment portfolio. And on top of that, we couldn't show alignment of our Fellows and Scholars Program to the Centers of Excellence.

So working with the Centers of Excellence in September, we came up with this alignment. I know you have been briefed on that. And we came back to the Hill; and the Congress, bipartisan and very kindly, wrote legislation that had me come back within 60 days—Mr. Chairman, I am pleased to tell you I got back within 58 days—and did brief the appropriators on this, and they were pleased with the way ahead.

What we found was we did not have what I call the face of America represented. I will take for the record the specific numbers. But what we have now in the new four new Centers of Excellence is very strong historically black and other MSI representation. We

wrote that into the broad agency announcement. It is one of the criteria that we are applying.

Because when you look at the demographics of America, we must recruit from the best of the best; and I look forward to Puerto Rico and Virgin Islands participating, if not in the lead then in conjunction with some of these other organizations.

Mrs. CHRISTENSEN. Okay. Thank you. Because I was going to ask about in conjunction, because sometimes the minority serving institutions may not have all of the infrastructure needed to really fulfill the terms of a contract, but if they work as a mentee or a subcontractor that can work.

I have another question. Because the last time you were here I had talked about the fact that we introduced several times before a biosecurity bill to increase research to shorten the time between 1-day identification of a biologic agent and to shorten the time between the identification and the development of a vaccine or a countermeasure; and you had indicated, if I remember correctly, that you were focusing on that. You know, so I took from that that if S&T was really making that a priority that I probably didn't need to introduce my legislation again.

Last week or the week before, we had a hearing on multiple-drug-resistant TB. The Director of the CDC was here; and I asked her, isn't any research going on to shorten the time to identify TB? Because we were being told and the testimony said 12 to 16 weeks or something like that. And she said no.

Since then, we started looking around; and that is not exactly accurate. Can you tell me what—if you can tell me, as specifically as possible, what is the S&T Director doing in terms of that kind of research?

Mr. COHEN. Yes, ma'am.

First of all, there are many, many, many diseases; and I am not focused—

Mrs. CHRISTENSEN. Or even on the ones that have had the threat—the material threat assessment.

Mr. COHEN. Yes, ma'am.

Mrs. CHRISTENSEN. Because I know of research that Georgetown is doing that is called fluorescent-activated sensing technology, because we were looking, and that one came up. It is a fascinating technology that can identify from the air—has the potential to do that—agents and identify them specifically within hours.

Mr. COHEN. Yes, ma'am. I am familiar with that technology, and I did watch that particular hearing with the CDC.

First of all, I am committed to shortening the time from discovery and invention to delivery and utilization; and that is true in all areas.

In the area of vaccines, as we look at the major threats—

Mrs. CHRISTENSEN. Yes.

Mr. COHEN.—I am so pleased to have Dr. John Vitko here, who, hard to believe, signed on for an extra year with me to lead my chem/bio division. And it is exciting. Some of the work that has gone on used to be called DNA vaccines, is today called agile vaccines. And the goal there is, thanks to genomics, which has given us so many breakthroughs, when you identify the antigen, and it may very well be a manufactured or designer antigen—

Mrs. CHRISTENSEN. Yes.

Mr. COHEN. —we then can use DNA genomics to come up with an efficacious vaccine to then apply. And then the bad guy modifies theirs and we modify ours. We believe it is possible to get that down to weeks. But that has to go through clinical trials, et cetera—

For the 30 agents that we have identified, Dr. Vitko and I have a robust investment plan; and that also includes animal diseases, such as I used to call it hoof and mouth. I understand now it is foot and mouth. In fact, before Plum Island closes in the next 10 years, they believe, those scientists, and I visited with them, that their legacy will be an efficacious vaccine for foot and mouth, which will protect our livestock. So this is an area where we can certainly use help, but legislation in and of itself won't fix it.

There are some areas where we can make great progress and discoveries, as in Georgetown. BioWatch, as you know, has been an enormous success story. When the hydrogen sulfide cloud many months ago was over New York, Mayor Bloomberg within an hour was able to come out—

Mrs. CHRISTENSEN. That is on the chemical, but I think we need to do a lot of work on the biological.

Mr. COHEN. We agree. We agree. It is a priority. I have at least \$5 million toward this—John, you can correct me—but in several of the critical areas for vaccine development; and we are trying to use the cutting-edge technologies.

Mrs. CHRISTENSEN. Thank you.

Mr. LANGEVIN. Thank the gentlelady.

The gentleman from North Carolina, Mr. Etheridge, is recognized for 5 minutes.

Mr. ETHERIDGE. Thank you, Mr. Chairman; and, Admiral, good to have you back.

While we are on innovation, let me ask you a question in that area. Because Homeland Security's Advanced Research Project Agency is modeled after the very successful DARPA program with the military but functions quite differently. DARPA is a high-level, forward-thinking R&D think tank with no procurement responsibility, while the HSARPA mixes research and procurement and focuses on near-term needs.

My question is this. How do you promote innovation and radical thinking when you are focused, as your strategic plan says, on putting advanced capabilities in the hands of your customers as soon as possible? My question is, does Homeland Security need an agency more like DARPA?

Mr. COHEN. Well, sir, the enabling legislation, as I have told you, the 19 pages for S&T—O&R was half a page in Title 10 in 1946. So it shows you the impact of word processing over 60 years. But you all put a lot of thought into that enabling legislation, and it could have given us a camel, you know, an organization designed by committee. But it didn't.

HSARPA is different than DARPA. Let me give you a couple of examples.

Mr. ETHERIDGE. Okay.

Mr. COHEN. Remember the enabling legislation very clearly tells me, as S&T executive of Homeland Security, not to reinvent Na-

tional Institutes of Health, not to reinvent DOE or DOD labs, et cetera. And that is the right thing to do. But what you also tell me is all of those organizations and the billions they spend must be made available to me, meaning I get full disclosure. I can't tell them how to invest, but, to the extent they invest, I take my precious dollars and leverage that.

You know, right in this very building, TSWG, the Technology Working Support Group, 2 months ago we had a joint display. TSWG sits at the table of my Integrated Product Teams offering DOD solutions. DARPA does what they do independent of the customer, and that is their design, and that is how you get an Internet.

In Navy, I partnered with them and I took my highest risk. I don't have that luxury.

DARPA's budget is \$3 billion. My HSARPA budget is \$30 million, 1 percent of DARPA. So when I take in my HIPS and HITS and I tell you I am going to protect civilian aviation from 65,000 feet against MANPADS and save the cost, weight, and liability that the airlines don't want to put on their planes, I would tell you that that is innovation and that is breakthrough.

Mr. ETHERIDGE. Let me follow it up. As you identify project areas where breakthrough technologies or prototypes are currently available, you and I both know that is changing and changing very rapidly, yet a formalized procedure for identifying these areas is not described in either the strategic plan, nor is it described in the R&D plan. So my question is the extent to which the integrated product team influences these decisions is also explained. Can you enlighten me a little bit on that and clarify that point?

Mr. COHEN. Yes, sir, and I will make it fairly succinct because am actually excited about how this develops. The Chairman more than most—one of the reason I was Chief of Naval Research for 6 years, it took us 3 years to come up with this, and we finally got it right, and they said, now execute it. The integrated product team is where the customer tells us where their capability gaps are.

In Navy, we limited that process to a 2—to 5-year near-term spiral development. I talk about 3 to 5 megapixels. It enhanced acquisition. It did not challenge acquisition, and did not give leap ahead or breakthrough.

We left in Navy innovation 10 percent to leadership, the CNO, the Commandant, the Secretary of the Navy, to have me embarrass programs of record to challenge them to be better. And the basic research we left to the scientists for opportunities that occurred.

What I have found in the short time, the 9, 10 months that we have had this process in place in DHS, I have a very enlightened and educated customer in Admiral Thad Allen and in Greg Garcia and in Vice Admiral Johnson and in Chief Aguilar. And what we are finding is in IPT, they are telling me like SBInet or Deepwater, what their near-term needs are. We are giving them technology solutions from universities, laboratories, industry, international.

But what is happening with the customer, different than Navy, is the customer is sharing with me, you know, you don't have something in the near term, I need a higher-risk solution, and I am willing to work with you. That is innovation, and the customer is invested.

Where the customer does not see higher risk and does not have near term, the customer is coming to me—and they are not scientists—but they are saying, Jay, you have got to go to the universities, you have got to go to the laboratories. We need breakthrough in basic research so I can perform my mission. It is a much tighter process than I had in Navy or I imagined would develop. And I will articulate that in the next strategic plan so that everyone understands.

Mr. ETHERIDGE. Thanks. That will be helpful.

I yield back.

Mr. LANGEVIN. [Presiding.] I thank the gentleman.

The gentlewoman from California Ms. Lofgren is recognized for 5 minutes.

Ms. LOFGREN. Thank you, Mr. Chairman. I will be brief.

I agree with the comments previously made on the amount of resources being dedicated to cyberresearch and think that does need to be addressed and look forward to further information in the future on that.

I want to ask about your Centers of Excellence. You have eight right now. We had originally envisioned 10. Do you see any gaps in the existing centers? What are your thoughts about the next areas that need attention?

Mr. COHEN. Yes, ma'am. First of all, we thank the university system of California. You know, I applied three places when I was 17, Coast Guard Academy—I was a New Yorker—the Naval Academy, and the University of Southern California. And part of it was because of the Beach Boys' song, Wish They All Could Be California Girls. I was accepted to USC, but I did not get—

Ms. LOFGREN. Went to Stanford as well.

Mr. COHEN. As is my wife, so I married up. And I know you heard what I said, I won't repeat it in depth. The COEs were not alike. Individually the COEs are world-class. For example, USC is my only cross-cutting COE because because they do operations analysis, operations research, and in today's world where we do have limited resources, and we have an ingenious and devious enemy, we must use risk-informed decisionmaking. And this is an area where I have gone to national academies to develop the science, like we did operations research after World War II—

Ms. LOFGREN. But the problem is everybody can't be an expert on everything.

Mr. COHEN. Exactly. Exactly. So that is one cross-cutting. What we found in our organization, we did not have a COE for explosives. I did not have a COE for the borders and maritime specifically.

Ms. LOFGREN. And now I am asking are there other similar issues where you hope to fill in with other Centers of Excellence?

Mr. COHEN. As I would tell you, as I am currently configured—and you are going to think this is a setup, and it is not—I am not satisfied with how I am configured in the cyberworld. I think the direction we went suboptimized our ability to develop like a Carnegie Institute for Cryptology. They are all universities that no one can compete with. And I am working with David Boyd and with my university people to figure out both in the chem-bio area—because I have three different, plant and animal, zoonotic—how to bring

them together to have the critical mass. We will work to do the same in command and control.

But since I align to my customer and I do that through enduring disciplines, I would tell you that I think by 1 October or shortly thereafter, when we have down-selected and have nine Centers of Excellence, each one for 6 years, rotating every 2 years with the recompetition of one-third, because I believe in competition, we will probably have the 90 percent solution. If you think I have deficiencies, I welcome—

Ms. LOFGREN. In the public setting I don't want to talk about the vulnerability that was discovered, but Lawrence Livermore is not in my district, but it is nearby, is a tremendous resource to the country and has provided a real service to the Nation in analyzing transportation vulnerabilities. And I look at the amount of people on rail transit and compare it to what we are doing on aviation, and we have done nothing or almost nothing there. Don't answer me now, I just commend that to your attention.

I would like to talk about SBInet. You mentioned it. And we were just advised that the deadline, June 13th deadline, for Project 28 has not been met because of technology problems. At least that is what we were told. You mentioned that the S&T is playing a role in derisking technology in programs including SBI. What role did S&T have in the delay issues relative to implementing Project 28? And who actually is managing SBInet? It is in CBP, but you have a role. How do we sort through this?

Mr. COHEN. I will take the specific answer on Project 28 for the record.

Mr. COHEN. But we have the Borders and Maritime Division currently headed by Captain Dave Newton, who is my Deputy Division Director, and we have dedicated program managers who work with Greg Giddens. But overall the transition comes out of my director—

Ms. LOFGREN. If you are going to answer the question later, and if you don't know the answer offhand, I just have one other quick question, and that has to do with standard setting. I remember it was almost 4 years ago, and I asked whether we could set standards on biometrics and suggested—actually I think it was the at the Science Committee at that time and then later reinforced here at Homeland—NIST, whether they could provide standards, because they do that so well. And they said of course they could, and that they would need about 6 months and several—it needs to be a funded project, a couple of million dollars, and they could set those standards that would be open standards, and of course it was never done. And now we have inconsistent standards that I personally believe ultimately will cost us billions of dollars.

Has S&T been involved in standard setting in the biometric arena, and do you plan to be? And if not, do you know whether NIST is planning to be?

Mr. COHEN. I am responsible in the law for test and evaluation for the Department and setting standards for the Department. This is an area that was not well aligned. We now have a stand-alone in my organization for test and evaluation and standards. Burt Coursey from NIST is on board with me. We have a very close relationship with NIST.

I will get back to you on the exact status of the biometric standards because you and I are in agreement. This is a very important area, one of many, and to the extent that we are not well along the power curve, I will personally get involved.

Ms. LOFGREN. I know my time has expired, but I would just like to say at this point we are going to have to deal with a way, because we failed to do this, to incorporate legacy—inconsistent legacy systems. So the opportunity to proactively set those standards is gone many years ago, and it is going to be a more difficult mission that we have.

Mr. COHEN. I certainly agree, but as you know, the refresh cycle in these technologies sometimes is less than 18 months.

Ms. LOFGREN. No, no, I understand that. I represent Silicon Valley. But we also have databases now that we don't want to abandon. And I thank the gentleman.

Mr. LANGEVIN. I thank the gentlewoman.

I have one final question, and then if the other two Members have additional questions, if you would like to go for a second round, you are welcomed to.

But my final question, Secretary, the S&T strategic plan does not discuss what specific performance metrics or other measures are used to gauge a program's progress or success as we are reading it.

How does the S&T strategic plan tie to the Department's performance and accountability report, otherwise known as PAR? The PAR uses specific measures to assess S&T programs, and why are these S&T measures not discussed in the S&T strategic plan?

Mr. COHEN. Mr. Chairman, I will correct that. But I do want to make it clear that I am a big believer, and you know that, in metrics. We have three investment areas: basic research, we have acquisition transition or product transition, and we have innovation. The metrics in those three areas are fundamentally different, but not in the HSS&T, but in the S&T community.

As you are aware, in basic research, university and laboratory, the metrics, because you don't know what you don't know, and you have to go up a lot of alleys to find out which ones are blind, and we don't control when a discovery is made, are generally focused on what are the degrees, number of peer-reviewed papers, external awards like Colliers, Nobel, the level of investment, et cetera, et cetera. Those are the softest of metrics, and that is the eternal question that NSF and everyone else has asked.

In product transition, that is acquisition lite. That is half of my budget. That is IPT-controlled, and every 6 months starting this summer, I report to DHS leadership, and the 22 components on the 217 projects that were mandated, that came out of the IPT process and the 77 high-priority technology investment areas that my customers had—and I report as to cost, schedule, and technology readiness level to insert into their acquisition programs so that I meet their requirements and don't put their capability enhancement at risk.

And that is how we did this in Navy, and I take that very personally responsible, and I do that—takes about 3 days, 12-hour days, of each project manager giving me a green light, red light, yellow light as to cost, schedule and TRL.

Finally, in innovation, this is more of a roll of the dice. This is Nike: Just do it. Success or failure. Do you have the capability, and is it exploitable? And so the metric there will be self-evident. Did it work? And if it did not work, where did it fall short? And what do I need to do in basic research or in spiral development to get me that capability in the second round?

So three different sets of metrics. I will clarify those in follow-on reports. But that is how we do business.

Mr. LANGEVIN. Well, I would appreciate that in the follow-on reports. We really do need performance standards, and I think that is vital to the success of S&T as we go forward and look forward to your continuing to work on that and other things. I know you have a lot on your plate, and it is a tall order. In many ways I don't envy you. I do know that you are up to the challenge, though, Secretary, and we appreciate the great work that you do. And there is no one that is a bigger fan of yours on the Hill than me, and I appreciate your passion for the job at S&T.

Again, I know that we have a lot of work ahead of us to do, and we have highlighted a lot of the challenges and the gaps today, but I also know that there are good things going on at S&T, and I applaud you for your work and your team behind you, and I look forward to our continuing to work together.

So I want to thank you for your valuable testimony; the Members for their questions, of course. And the members of the subcommittee, myself included, actually may have—well, have some additional questions for you, and I would ask that you respond expeditiously in writing to those questions.

Mr. LANGEVIN. Having no further business before the subcommittee, this subcommittee now stands adjourned. Thank you.

Mr. COHEN. Mr. Chairman, thank you for your leadership, and I compliment the staff on both sides of the aisle for their very professional performance and working with our people. So thank you so much.

Mr. LANGEVIN. You are welcome.

Thank you Mr. Secretary.

The subcommittee stands adjourned.

[Whereupon, at 3:30 p.m., the subcommittee was adjourned.]

