

**U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY  
SUBCOMMITTEE ON RESEARCH AND TECHNOLOGY  
SUBCOMMITTEE ON OVERSIGHT**

**HEARING CHARTER**

*Technology Needed to Secure America's Border*

**Thursday, July 31, 2014  
10:00 a.m. – 12:00 p.m.  
2318 Rayburn House Office Building**

**Purpose**

On Thursday, July 31, 2014, the Subcommittee on Research and Technology and the Subcommittee on Oversight of the Committee on Science, Space, and Technology will hold a joint hearing to receive testimony from witnesses outside the Science and Technology (S&T) Directorate of the Department of Homeland Security (DHS) on the technologies needed to better secure our nation's borders. This hearing will inform the Committee on potential issues for discussion during a later hearing with the DHS Undersecretary of Science and Technology planned for September and subsequent legislation re-authorizing research and technology development projects within the S&T Directorate.

**Witnesses**

- **Dr. K. Jack Riley**, Vice President, RAND National Security Research Division; Director, RAND National Defense Research Institute
- **Mr. David C. Maurer**, Director, Homeland Security and Justice, U.S. Government Accountability Office
- **Dr. Joseph D. Eyerman**, Director, Health Security Program, RTI International; Director for Research and Management, Institute for Homeland Security Solutions, Duke University

**Background**

U.S. Customs and Border Protection (CBP) “welcomes nearly 1 million visitors, screens more than 67,000 cargo containers, arrests more than 1,100 individuals and seizes nearly 6 tons of illicit drugs” on a typical day.<sup>1</sup> CBP is also responsible for monitoring between legal entry points along the Northern and Southern borders and intercepting individuals attempting to cross the border. The Northern border of the United States and Canada is over 5,000 miles long. The Southwest border of the United States and Mexico is nearly 2,000 miles long.

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<sup>1</sup> DHS U.S. Customs and Border Protection, available at: <http://www.cbp.gov/about>.

Surveillance technologies act as force multipliers for border patrol agents to augment “boots on the ground” with persistent observations from ground-based and airborne platforms. Many off-the-shelf surveillance technologies that are used at government and commercial facilities today are still not feasible to operationally deploy along the Southwest border. The DHS S&T Directorate has primary responsibility for bringing new technologies to full readiness, including technologies needed to better secure our nation’s border, with support from other agencies, including the Department of Defense and National Institute of Standards and Technology.

**Department of Homeland Security Science and Technology Directorate**

In 2002, Title III of the Homeland Security Act (PL 107-296) established the role of Undersecretary for Science and Technology, the Directorate for S&T, and the Homeland Security Advanced Research Projects Agency (HSARPA) within DHS. The S&T Directorate is responsible for managing and carrying out science and technology research on behalf of federal homeland security needs and coordinating this research with other federal research entities.<sup>2</sup> The Committee on Science, Space, and Technology shares oversight of the S&T Directorate with the Homeland Security Committee. The current organization of the directorate has been in place since 2010:<sup>3</sup>

The S&T Directorate is currently funded at approximately \$1.2 billion in FY2014, and the Administration has requested \$1.07 billion for FY 2015.

*Science and Technology Directorate (DHS S&T) Spending  
(dollars in millions)*

Account	FY13* Enacted	FY14** Enacted	FY15 Request	FY15 Request versus FY14 Enacted	
				\$	%
<b>Science and Technology Directorate</b>					
<i>Acquisition and Operations Support</i>	46.0	41.7	41.7	-	-
<i>Laboratory Facilities</i>	158.1	547.8	435.2	(112.6)	(21)
<i>Research, Development, and Innovation</i>	425.3	462.0	433.8	(28.2)	(6)
<i>University Programs</i>	38.3	39.7	31.0	(8.7)	(22)
<i>Management and Administration</i>	126.5	129.0	130.1	1.1	.85
<b>Totals:</b>	<b>797.1</b>	<b>1,220.1</b>	<b>1,071.8</b>	<b>(148.3)</b>	<b>(12)</b>

\*FY 13 totals include emergency/supplemental funding and rescission.

\*\*FY 14 totals include a rescission.

*Source: FY 2015 Budget in Brief – Homeland Security*

<sup>2</sup> Title III of P.L. 107-296, available at: <http://www.gpo.gov/fdsys/pkg/PLAW-107publ296/pdf/PLAW-107publ296.pdf>.

<sup>3</sup> DHS Science and Technology Directorate, available at: [https://www.dhs.gov/sites/default/files/publications/ST%20Org%20Chart-12-2012\\_0.pdf](https://www.dhs.gov/sites/default/files/publications/ST%20Org%20Chart-12-2012_0.pdf).

## **Government Accountability Office (GAO) Reports**

The Government Accountability Office has reviewed the work and produced reports related to DHS S&T as well as the technology deployment delays on the border fence for many years. In September 2012, GAO released a report titled, *Department of Homeland Security Oversight and Coordination of Research and Development Should Be Strengthened*.<sup>4</sup> GAO found that DHS does not know how much its components spend on research and development (R&D) and does not have policies and guidance for defining R&D and overseeing R&D resources across the Department. According to DHS, the S&T Directorate, the Domestic Nuclear Detection Office (DNDO), and U. S. Coast Guard are the only components that conduct R&D. However, GAO identified an additional \$255 million in R&D being conducted by other DHS components. Some of this R&D was found to be similar or duplicative of other work already on-going. As a result, GAO recommended that DHS develop policies and guidance for defining, reporting, and coordinating R&D activities across the Department. GAO also recommended that DHS establish a better mechanism to track R&D projects.<sup>5</sup>

In a September 2013 report titled, *Department of Homeland Security Opportunities Exist to Better Evaluate and Coordinate Border and Maritime Research and Development*,<sup>6</sup> GAO found that DHS border and maritime R&D components reported producing 97 R&D deliverables between 2010 and 2012, at an estimated cost of \$177 million. Customers expressed mixed views on the impact of these wide-ranging R&D products.<sup>7</sup>

According to the 2013 report, while DHS is working to develop policies to define and coordinate R&D, additional actions could strengthen internal and external coordination of border and maritime R&D. Work still needs to be done at the agency level to make sure border and maritime R&D efforts are mutually reinforcing and being directed towards the highest priority needs. As a result, GAO recommended that S&T establish “timeframes and milestones for collecting and evaluating feedback from its customers to determine the usefulness and impact of its R&D efforts.”<sup>8</sup> GAO also recommended that S&T ensure potential challenges with data reliability, accessibility, and availability are reviewed and understood before approving Centers of Excellence R&D projects.<sup>9</sup>

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<sup>4</sup> GAO Report, “Department of Homeland Security Oversight and Coordination of Research and Development Should Be Strengthened,” September 2012, available at: <http://www.gao.gov/assets/650/648152.pdf>.

<sup>5</sup> Ibid.

<sup>6</sup> GAO Report, “Department of Homeland Security Opportunities Exist to Better Evaluate and Coordinate Border and Maritime Research and Development,” September 2013, available at: <http://www.gao.gov/assets/660/658112.pdf>.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

## **Additional Reading**

Beyond these two reports focused on the S&T Directorate, GAO has published several others on the operational and technology deployment challenges to better secure our national borders. The following reports are informative to the Committee:

- Border Security: DHS's Progress and Challenges in Securing U.S. borders. GAO-13-414T. Washington, D.C.: March 14, 2013. <http://www.gao.gov/assets/660/653037.pdf>
- Border Security: Opportunities Exist to Ensure More Effective Use of DHS's Air and Marine Assets. GAO-12-518. Washington, D.C.: March 30, 2012. <http://www.gao.gov/assets/590/589797.pdf>
- Arizona Border Surveillance Technology: More Information on Plans and Costs Is Needed before Proceeding. GAO-12-22. Washington, D.C.: November 4, 2011. <http://www.gao.gov/assets/590/586102.pdf>
- Secure Border Initiative: DHS Has Faced Challenges Deploying Technology and Fencing Along the Southwest Border. GAO-10-651T. Washington, D.C.: May 4, 2010. <http://www.gao.gov/assets/90/82411.pdf>
- Secure Border Initiative: Technology Deployment Delays Persist and the Impact of Border Fencing Has Not Been Assessed. GAO-09-896. Washington, D.C.: September 9, 2009. <http://www.gao.gov/assets/300/294982.pdf>