United States Government Accountability Office

Testimony

Before the Subcommittee on Border and Maritime Security, Committee on Homeland Security, House of Representatives

For Release on Delivery
Expected at 10:00 a.m. EST
Tuesday, March 4, 2014

ARIZONA BORDER SURVEILLANCE TECHNOLOGY PLAN

Additional Actions Needed to Strengthen Management and Assess Effectiveness

Statement of Rebecca Gambler, Director, Homeland Security and Justice

Chairwoman Miller, Ranking Member Jackson Lee, and Members of the Subcommittee:

I am pleased to be here today to discuss the findings from our March 2014 report, being released today, in which we assessed the Department of Homeland Security's (DHS) U.S. Customs and Border Protection's (CBP) efforts to develop and implement the Arizona Border Surveillance Technology Plan (the Plan).[1] In recent years, nearly half of all annual apprehensions of illegal entrants along the southwest border with Mexico have occurred along the Arizona border, according to DHS data. A top priority for CBP is preventing, detecting, and apprehending illegal entrants. In November 2005, DHS announced the launch of the Secure Border Initiative (SBI), a multiyear, multibillion-dollar program aimed at securing U.S. borders and reducing illegal immigration. CBP intended for the SBI Network (SBI*net*) to include technologies such as fixed sensor towers, a common operating picture, and tactical infrastructure to create a "virtual fence" along the southwest border to enhance CBP's capability to detect, identify, classify, track, and respond to illegal breaches at and between land ports of entry.[2] At a cost of about $1 billion, in 2010, CBP deployed SBI*net* systems, referred to as Block 1 systems, along the 53 miles of Arizona's 387-mile border with Mexico that represent one of the highest-risk areas for illegal entry attempts. However, in January 2011, in response to internal and external assessments that identified concerns regarding the performance, cost, and schedule for implementing the systems, the Secretary of Homeland Security announced the cancellation of further procurements of SBI*net* systems.[3]

[1]GAO, *Arizona Border Surveillance Technology Plan: Additional Actions Needed to Strengthen Management and Assess Effectiveness*, GAO-14-368 (Washington, D.C.: Mar. 3, 2014).

[2] The SBI*net* fixed sensor towers were intended to transmit radar and camera information into a common operating picture at workstations manned at all times by U.S. Border Patrol agents. The SBI*net* Common Operating Picture was intended to provide uniform data through a command center environment to Border Patrol agents in the field and all DHS agencies, and to be interoperable with the equipment of DHS external stakeholders, such as local law enforcement. Tactical infrastructure includes pedestrian and vehicle fences, roads, and lighting. Ports of entry are officially designated places that provide for the arrival at, or departure from, the United States.

[3]See, for example, GAO, *Secure Border Initiative: DHS Needs to Reconsider Its Proposed Investment in Key Technology Program*, GAO-10-340 (Washington, D.C.: May 5, 2010), and *Secure Border Initiative: DHS Needs to Address Significant Risks in Delivering Key Technology Investment*, GAO-08-1086 (Washington, D.C.: Sept. 22, 2008).

After the cancellation of SBI*net* in January 2011, CBP developed the Plan, which includes a mix of radars, sensors, and cameras to help provide security for the remainder of the Arizona border. Under the Plan, CBP identified seven programs to be implemented ranging in estimated costs from $3 million to about $961 million. The three highest-cost programs under the Plan are the Integrated Fixed Tower (IFT), Remote Video Surveillance System (RVSS), and Mobile Surveillance Capability (MSC), accounting for 97 percent of the Plan's estimated cost.[4] In November 2011, we reported on CBP's development of, and estimated life-cycle costs for, implementing the Plan.[5] Specifically, we reported that CBP needed more information for the Plan and its costs before proceeding with implementation, and we recommended that CBP, among other things, determine the mission benefits to be derived from the implementation of the Plan and develop and apply key attributes for metrics to assess program implementation, conduct a post implementation review and operational assessment of SBI*net*, and update the cost estimate for the Plan using best practices.[6] DHS concurred with these recommendations and has actions under way to address some of them.

My testimony today is based on and summarizes the key findings of our report on the status of the Plan, which was publicly released today.[7] Like the report, my statement will address CBP's efforts to (1) develop schedules and Life-cycle Cost Estimates for the Plan in accordance with

[4]The IFT consists of towers with, among other things, ground surveillance radars and surveillance cameras mounted on fixed (that is, stationary) towers. The RVSS includes multiple color and infrared cameras mounted on monopoles, lattice towers, and buildings and differs from the IFT, among other things, in that the RVSS does not include radars. The MSC is a stand-alone, truck-mounted suite of radar and cameras that provides a display within the cab of the truck.

[5]GAO, *Arizona Border Surveillance Technology: More Information on Plans and Costs Is Needed before Proceeding*, GAO-12-22 (Washington, D.C.: Nov. 4, 2011). A Life-cycle Cost Estimate provides an exhaustive and structured accounting of all resources and associated cost elements required to develop, produce, deploy, and sustain a particular program.

[6]Measures and key attributes are generally defined as part of the business case in order to explain how they contribute to the mission's benefits. See Office of Management and Budget, *OMB Circular No. A-11, Part 7, Section 300, Planning, Budgeting, Acquisition, and Management of Capital Assets* (Washington, D.C.: Executive Office of the President, July 2010).

[7] GAO-14-368.

best practices, (2) follow key aspects of DHS's acquisition management framework in managing the Plan's three highest-cost programs, and (3) assess the performance of technologies deployed under SBI*net* and identify mission benefits and develop performance metrics for surveillance technologies to be deployed under the Plan. To conduct work for the March 2014 report, we analyzed DHS and CBP program schedules and Life-cycle Cost Estimates and interviewed DHS and CBP officials responsible for developing and overseeing schedules and cost estimates, including officials from CBP's Office of Technology Innovation and Acquisition (OTIA), which manages implementation of the Plan. We also analyzed DHS and CBP documents, including DHS Acquisition Management Directive 102-01 and its associated DHS Instruction Manual 102-01-001, program briefing slides, budget documents, Acquisition Decision Memorandums, and program risk sheets.[8] Finally, we analyzed performance assessment documentation and metrics used by CBP to determine the effectiveness of technologies deployed under SBI*net* and interviewed CBP officials responsible for performance measurement activities, and analyzed CBP data on apprehensions, seizures, and asset assists from fiscal year 2010 through June 2013 to determine the extent to which the data could be used to measure the contributions of SBI*net* technologies in enhancing border security.[9] We conducted this work in accordance with generally accepted government auditing standards. More detailed information on the scope and methodology of our published report can be found therein.

[8]DHS Acquisition Management Directive 102-01, Jan. 20, 2010, and DHS Instruction Manual 102-01-001, *Acquisition Management/Instruction Guidebook*, Oct. 1, 2011.

[9] An asset assist is what happens when a technological asset, such as a SBI*net* surveillance tower, or a non-technological asset, such as a canine team, contributes to apprehensions or seizures. In our March 2014 report, apprehensions data included individuals arrested and identified as deportable aliens, consistent with Border Patrol's definition.

CBP's Program Schedules and Life-cycle Cost Estimates Reflect Some but Not All Best Practices

In our March 2014 report, we assessed OTIA's schedules as of March 2013 for the IFT, RVSS, and MSC programs and found that these program schedules addressed some, but not all, best practices for scheduling. The *Schedule Assessment Guide* identifies 10 best practices associated with effective scheduling, which are summarized into four characteristics of a reliable schedule—comprehensive, well constructed, credible, and controlled.[10] According to our overall analysis, OTIA at least partially met the four characteristics of reliable schedules for the IFT and RVSS schedules (i.e., satisfied about half of the criterion), and partially or minimally met the four characteristics for the MSC schedule, as shown in table 1. For example, we reported that the schedule for the IFT program partially met the characteristic of being credible in that CBP had performed a schedule risk analysis for the program, but the risk analysis was not based on any connection between risks and specific activities.

[10] GAO, *GAO Schedule Assessment Guide: Best Practices for Program Schedules,* GAO-12-120G (exposure draft) (Washington, D.C.: May 2012). We developed this guide through a compilation of best practices that federal cost-estimating organizations and industry use. According to this guide, for a schedule to be comprehensive, among other things, the schedule should (1) capture all activities, as defined in the work breakdown structure, (2) reflect what resources are needed to do the work, and (3) establish the duration of all activities and have specific start and end dates. To be well-constructed, among other things, all schedule activities are sequenced in the order that they are to be implemented with the most straightforward logic possible. To be credible, the schedule should reflect the order of events necessary to achieve aggregated products or outcomes, and activities in varying levels of the schedule map to one another. Moreover, a schedule risk analysis should be conducted to predict a level of confidence in meeting the program's completion date. For a schedule to be controlled, the schedule should be updated periodically using actual progress and logic to realistically forecast dates for program activities, and a baseline schedule should be maintained to measure, monitor, and report the program's progress.

Table 1: Summary of Our Schedule Assessments for the Three Highest-Cost Programs under the Arizona Border Surveillance Technology Plan

Schedule characteristic	Integrated Fixed Towers	Remote Video Surveillance Systems	Mobile Surveillance Capability
Comprehensive	Partially met	Partially met	Partially met
Well constructed	Substantially met	Partially met	Partially met
Credible	Partially met	Partially met	Minimally met
Controlled	Partially met	Partially met	Minimally met

Source: GAO analysis of Customs and Border Protection data.

Note: Not met—CBP provided no evidence that satisfies any of the criterion. Minimally met—CBP provided evidence that satisfies a small portion of the criterion. Partially met—CBP provided evidence that satisfies about half of the criterion. Substantially met—CBP provided evidence that satisfies a large portion of the criterion. Met—CBP provided complete evidence that satisfies the entire criterion.

We recommended that CBP ensure that scheduling best practices are applied to the IFT, RVSS, and MSC schedules. DHS concurred with the recommendation and stated that OTIA plans to ensure that scheduling best practices are applied as far as practical when updating the three programs' schedules.

Further, in March 2014 we reported that CBP has not developed an Integrated Master Schedule for the Plan in accordance with best practices. Rather, OTIA has used the separate schedules for each individual program (or "project") to manage implementation of the Plan. OTIA officials stated that an Integrated Master Schedule for the overarching Plan is not needed because the Plan contains individual acquisition programs as opposed to a plan consisting of seven integrated programs. However, collectively these programs are intended to provide CBP with a combination of surveillance capabilities to be used along the Arizona border with Mexico. Moreover, while the programs themselves may be independent of one another, the Plan's resources are being shared among the programs.

OTIA officials stated that when schedules were developed for the Plan's programs, they assumed that personnel would be dedicated to work on individual programs and not be shared between programs. However, as OTIA has initiated and continued work on the Plan's programs, it has shared resources such as personnel among the programs, contributing, in part, to delays experienced by the programs. According to schedule best practices, an Integrated Master Schedule that allows managers to monitor all work activities, how long the activities will take, and how the activities are related to one another is a critical management tool for complex

systems that involve the incorporation of a number of different projects, such as the Plan.[11] Thus, we recommended that CBP develop an Integrated Master Schedule for the Plan.

DHS did not concur with this recommendation. In particular, DHS stated that maintaining an Integrated Master Schedule for the Plan undermines the DHS-approved implementation strategy for the individual programs making up the Plan and that a key element of the Plan has been the disaggregation of technology procurements. However, we continue to believe that developing an Integrated Master Schedule for the Plan is needed. As we reported in March 2014, this recommendation is not intended to imply that DHS needs to re-aggregate the Plan's seven programs into a "system of systems" or change its procurement strategy in any form. The intent of the recommendation is for DHS to insert the individual schedules for each of the Plan's programs into a single electronic Integrated Master Schedule file in order to identify any resource allocation issues among the programs' schedules. Developing and maintaining an Integrated Master Schedule for the Plan could allow OTIA insight into current or programmed allocation of resources for all programs as opposed to attempting to resolve any resource constraints for each program individually.

In addition in March 2014, we reported that OTIA's rough order of magnitude estimate for the Plan and individual Life-cycle Cost Estimates for the IFT and RVSS programs met some but not all best practices for such estimates. Cost-estimating best practices are summarized into four characteristics—well documented, comprehensive, accurate, and credible.[12] Our analysis of CBP's estimate for the Plan and estimates completed at the time of our review for the IFT and RVSS programs showed that these estimates at least partially met three of these characteristics—well documented, comprehensive, and accurate. In terms of being credible, these estimates had not been verified with independent cost estimates in accordance with best practices. We recommended that CBP verify the Life-cycle Cost Estimates for the IFT

[11] GAO-12-120G.

[12] GAO, *GAO Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, GAO-09-3SP (Washington, D.C.: March 2009). The methodology outlined in the *Cost Estimating and Assessment Guide* is a compilation of best practices that federal cost-estimating organizations and industry use to develop and maintain reliable cost estimates throughout the life of an acquisition program.

and RVSS programs with independent cost estimates and reconcile any differences.

DHS said it concurred with this recommendation, although we reported that DHS's planned actions will not fully address the intent of the recommendation unless assumptions underlying the cost estimates change. In particular, DHS stated that at this point it does not believe that there would be a benefit in expending funds to obtain independent cost estimates and that if the costs realized to date continue to hold, there may be no requirement or value added in conducting full-blown updates with independent cost estimates. DHS noted, though, that if this assumption changes, OTIA will complete updates and consider preparing independent cost estimates, as appropriate. We recognize the need to balance the cost and time to verify the Life-cycle Cost Estimates with the benefits to be gained from verification with independent cost estimates. However, we continue to believe that independently verifying the Life-cycle Cost Estimates for the IFT and RVSS programs and reconciling any differences, consistent with best practices, could help CBP better ensure the reliability of the estimates.

CBP Did Not Fully Complete Documents for Acquisition Decisions Consistent with the Guidance

In March 2014, we reported for the Plan's three highest-cost programs—IFT, RVSS, and MSC—DHS and CBP did not consistently approve key acquisition documents before or at the Acquisition Decision Events, in accordance with DHS's acquisition guidance. An important aspect of an Acquisition Decision Event is the review and approval of key acquisition documents critical to establishing the need for a program, its operational requirements, an acquisition baseline, and test and support plans, according to DHS guidance. On the basis of our analysis for IFT, RVSS, and MSC programs under the Plan, we reported that the DHS Acquisition Decision Authority approved the IFT program and the CBP Acquisition Decision Authority approved the RVSS and MSC programs to proceed to subsequent phases in the Acquisition Life-cycle Framework without approving all six required acquisition documents for each program. Furthermore, we reported that one document for the IFT program, five documents for the RVSS program, and two documents for the MSC program were subsequently approved after the programs received authority to proceed to the next phase. DHS plans to complete and approve those documents for the IFT, RVSS, and MSC programs that have not yet been completed and approved.

With regard to one of the required documents—the Test and Evaluation Master Plan—we reported in March 2014 that this document for the IFT

program, which was approved by DHS in November 2013, does not describe testing to evaluate the operational effectiveness and suitability of the system. Rather, the Test and Evaluation Master Plan describes CBP's plans to conduct a limited user test of the IFT. According to the Test and Evaluation Master Plan, the limited user test will be designed to determine the IFT's mission contribution. According to OTIA and the Test and Evaluation Master Plan, this testing is planned to occur during 30 days in environmental conditions present at one site—the Nogales station. CBP plans to conduct limited user testing for the IFT under the same process that is typically performed in any operational test and evaluation, according to the Test and Evaluation Master Plan. The November 2013 IFT Test and Evaluation Master Plan notes that, because the IFT acquisition strategy is to acquire non-developmental IFT systems from the marketplace (sometimes referred to as a commercial off-the-shelf system), a limited user test will provide Border Patrol with the information it needs to determine the mission contributions from the IFTs, and thus CBP does not plan to conduct more robust testing. However, this approach is not consistent with DHS's acquisition guidance, which states that even for commercial off-the-shelf systems, operational test and evaluation should occur in the environmental conditions in which a system will be used before a full production decision for the system is made and the system is subsequently deployed.

As we reported, we recognize the need to balance the cost and time to conduct testing to determine the IFT's operational effectiveness and suitability with the benefits to be gained from such testing. Although the limited user test should help provide CBP with information on the IFTs' mission contribution and how Border Patrol can use the system in its operations, the limited user test does not position CBP to obtain information on how the IFTs may perform under the various environmental conditions the system could face once deployed. Conducting limited user testing in one area in Arizona—the Nogales station—for 30 days could limit the information available to CBP on how the IFT may perform in other conditions and locations along the Arizona border with Mexico. As of November 2013, CBP intended to deploy IFTs to 50 locations in southern Arizona, which can include differences in terrain and climate throughout the year.

We recommended that CBP revise the IFT Test and Evaluation Master Plan to more fully test the IFT program, before beginning full production, in the various environmental conditions in which IFTs will be used to determine operational effectiveness and suitability. DHS did not concur with this recommendation and stated that the Test and Evaluation Master

Plan includes tailored testing and user assessments that will provide much, if not all, of the insight contemplated by the intent of the recommendation. However, as we reported in March 2014, we continue to believe that revising the Test and Evaluation Master Plan to include more robust testing to determine operational effectiveness and suitability could better position CBP to evaluate IFT capabilities before moving to full production for the system, help provide CBP with information on the extent to which the towers satisfy Border Patrol's user requirements, and help reduce potential program risks.

CBP Has Identified Mission Benefits, but Does Not Capture Complete Data on the Contributions of Its Surveillance Technologies

We reported in March 2014 that CBP has identified the mission benefits of its surveillance technologies, but does not capture complete data on the contributions of these technologies, which in combination with other relevant performance metrics or indicators, could be used to better determine the contributions of CBP's surveillance technologies and inform resource allocation decisions. CBP has identified mission benefits of surveillance technologies to be deployed under the Plan, such as improved situational awareness and agent safety.

While CBP has defined these mission benefits, the agency has not developed key attributes for performance metrics for all surveillance technologies to be deployed as part of the Plan, as we recommended in November 2011.[13] In our April 2013 update on the progress made by the agencies to address our findings on duplication and cost savings across the federal government, CBP officials stated that operations of its two SBI*net* surveillance systems identified examples of key attributes for metrics that can be useful in assessing the Plan's implementation for technologies.[14] For example, according to CBP officials, to help measure whether illegal activity has decreased, examples of key attributes include decreases in the amount of arrests, complaints by ranchers and other citizens, and destruction of public and private lands and property. While the development of key attributes for metrics for the two SBI*net* surveillance systems is a positive step, CBP has not identified attributes for metrics for all technologies to be acquired and deployed as part of the

[13] GAO-12-22.

[14]GAO, *2013 Annual Report: Actions Needed to Reduce Fragmentation, Overlap, and Duplication and Achieve Other Financial Benefits,* GAO-13-279SP, (Washington, D.C.: Apr. 9, 2013).

Plan. Thus, to fully address the intent of our recommendation, CBP would need to develop and apply key attributes for performance metrics for each of the technologies to be deployed under the Plan to assess its progress in implementing the Plan and determine when mission benefits have been fully realized.

Furthermore, we reported in March 2014 that CBP is not capturing complete asset assist data on the contributions of its surveillance technologies to apprehensions and seizures, and these data are not being consistently recorded by Border Patrol agents and across locations. Although CBP has a field within its Enforcement Integrated Database (EID) for maintaining data on whether technological assets, such as SBI*net* surveillance towers, and non-technological assets, such as canine teams, assisted or contributed to the apprehension of illegal entrants, and seizure of drugs and other contraband, according to CBP officials, Border Patrol agents are not required to record these data.[15] This limits CBP's ability to collect, track, and analyze available data on asset assists to help monitor the contribution of surveillance technologies, including its SBI*net* system, to Border Patrol apprehensions and seizures and inform resource allocation decisions.

We reported that according to our analysis of EID asset assist data for apprehensions and seizures in the Tucson and Yuma sectors from fiscal year 2010 through June 2013, information on asset assists was generally not recorded for all apprehension and seizure events.[16] For instance, for the 166,976 apprehension events reported by the Border Patrol across the Tucson sector during fiscal year 2010 through June 2013, an asset assist was not recorded for 115,517 (or about 69 percent) of these apprehension events. In the Yuma sector, of the 8,237 apprehension events reported by Border Patrol agents during the specified time period, an asset assist was not recorded for 7,150 (or about 87 percent) of these

[15] In addition to maintaining data on asset assists, the Border Patrol collects and maintains data on apprehensions and seizures in DHS's EID.

[16] In our March 2014 report, we defined an "apprehension or seizure event" as the occasion on which Border Patrol agents make an apprehension of an illegal entrant or a seizure of drugs or other contraband. The event is recorded in the EID and a date and unique identifying number are assigned. An event can involve the apprehension of one or multiple illegal entrants or types of items, and each individual illegal entrant apprehended or type of item seized in the event is associated with the assigned unique identifying number. Our analysis of apprehension events included instances in which an event had at least one deportable individual.

apprehension events. Since data on asset assists are not required to be reported, it is unclear whether the data were not reported because an asset was not a contributing factor in the apprehension or seizure or whether an asset was a contributing factor but was not recorded by agents.

As a result, CBP is not positioned to determine the contribution of surveillance technologies in the apprehension of illegal entrants and seizure of drugs and other contraband during the specified time frame. We reported that an Associate Chief at Border Patrol told us that while data on asset assists are not systematically recorded and tracked, Border Patrol recognizes the benefits of assessments of asset assists data, including those from surveillance technologies, such as the SBI*net* system. The Associate Chief further noted that these data in combination with other data, such as numbers of apprehensions and seizures, are used on a limited basis to help the agency make adjustments to its acquisition plans prior to deploying resources, thereby enabling the agency to make more informed deployment decisions.

We recommended that CBP require data on asset assists to be recorded and tracked within EID and that once these data are required to recorded and tracked, analyze available data on apprehensions and technological assists, in combination with other relevant performance metrics or indicators, as appropriate, to determine the contribution of surveillance technologies to CBP's border security efforts. CBP concurred with our recommendations and stated that Border Patrol is changing its data collection process to allow for improved reporting on asset assists for apprehensions and seizures and intends to make it mandatory to record whether an asset assisted in an apprehension or seizure. DHS plans to change its process by December 31, 2014.

Chairwoman Miller, Ranking Member Jackson Lee, and members of the subcommittee, this concludes my prepared statement. I would be pleased to answer any questions that you may have.

GAO Contact and Staff Acknowledgments

For questions about this statement, please contact Rebecca Gambler at (202) 512-6912 or gamblerr@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Individuals making key contributions to this testimony and our related report are Jeanette Espinola, Assistant Director, and Michelle Woods, Analyst-in-Charge. Additional contributors include David Alexander, Frances Cook, Joseph E. Dewechter, Jennifer Echard, Yvette Gutierrez, Richard Hung, Jason Lee, Grant Mallie, Karen Richey, Doug Sloane, Nate Tranquilli, Katherine Trimble, and Jim Ungvarsky.