

DEPARTMENT OF HOMELAND SECURITY
REPORT ON THE ASSESSMENT OF THE
SECURE BORDER INITIATIVE-NETWORK (SBInet) PROGRAM

EXECUTIVE SUMMARY

The Secure Border Initiative-network (SBInet) program, as conceived in 2005, was intended to cover the entire Southwest border with a highly integrated set of fixed sensor towers. Since its inception, SBInet has had continued and repeated technical problems, cost overruns and schedule delays, raising serious questions about the system's ability to meet the needs for technology along the border.

Soon after she became Secretary of Homeland Security, Secretary Napolitano asked Customs and Border Protection (CBP) for an analysis of the SBInet program. Based on the findings from this analysis, in January 2010, Secretary Napolitano ordered a Department-wide reassessment of the SBInet program that incorporated an independent, quantitative, science-based "Analysis of Alternatives" to determine if SBInet is the most efficient, effective and economical way to meet our nation's border security needs.

DHS completed the first phase of the assessment in Fall 2010, focused on the Arizona border, where half of all illegal border crossings currently occur. The assessment combined the quantitative, science-based results of the Analysis of Alternatives, the input of U.S. Border Patrol agents on the front lines and the analysis of the Department's leading science and technology experts. The assessment--the first of its kind the Department has ever undertaken for SBInet--focused on the viability and cost-effectiveness of the program and evaluated the operational value against projected costs.

Based on the assessment, the Department has concluded the SBInet program, as originally proposed, does not meet current standards for viability and cost-effectiveness. While it has generated some advances in technology that have improved Border Patrol agents' ability to detect, identify, deter and respond to threats along the border, SBInet does not and cannot provide a single technological solution to border security. As a result, Secretary Napolitano has directed CBP to end SBInet as originally conceived and instead utilize existing, proven technology solutions tailored to the distinct terrain and population density of each border region. This is a significant departure from the original SBInet concept of a single, one size fits all integrated fixed tower-based solution across the entire border.

As a result of the Secretary's border security review, DHS is currently developing a comprehensive border technology deployment plan that will build upon successful technology currently deployed and provide the optimum mix of proven surveillance technologies by sector. Where appropriate, this technology plan will also include elements of the former SBInet program that have proven successful.

The Department believes that the new plan provides better coverage that is tailored to the unique needs of each area along the border and more effective balance between cost and capability. It is

also expected to lead to significant cost savings as technology is deployed across the Southwest border. The original *SBI_{net}* program has cost taxpayers nearly one billion dollars for two regions in Arizona—covering 53 miles overall. The new way forward for technology in Arizona is expected to cost less than \$750 million and will cover the rest of the Arizona border—totaling 323 miles. The plan will also result in faster deployment of technology, as well as better linkage between operations and technology, complementing the unprecedented investments in manpower, infrastructure and resources the Administration has already made over the past two years to secure the Southwest border.

The new plan will utilize funding previously requested for *SBI_{net}* and provided in the continuing resolution. The FY 2011 budget request supports this new approach. CBP intends to acquire all the technologies in the new plan, including the integrated fixed towers, through full and open competitions.

While the initial phase of this assessment focused on Arizona, further independent, quantitative, science-based assessments will continue along each sector of the Southwest border to determine the optimal combination of technology, and eventually across the Northern border.

DHS remains committed to a process that is transparent, where technology deployments are based on mitigating the greatest border risk and providing the highest level of security, and cost is controlled and managed.

OBAMA ADMINISTRATION SOUTHWEST BORDER INITIATIVE

Since the beginning of this Administration, DHS has dedicated unprecedented personnel, technology, and resources to the Southwest border to bolster security and combat transnational criminal organizations by preventing illegal border crossings and interdicting illicit trafficking in weapons, drugs, and currency. Today, the Border Patrol is better staffed than at any time in its 86-year history, having more than doubled the number of agents from approximately 10,000 in 2004 to more than 20,500 today with another 1,000 agents to be added over the next year. DHS has doubled the number of personnel assigned to Border Enforcement Security Task Forces; tripled the number of U.S. Immigration and Customs Enforcement (ICE) intelligence analysts working along the U.S.-Mexico border; quintupled deployments of Border Liaison Officers; and begun screening 100 percent of southbound rail shipments for illegal weapons, drugs, and cash-- for the first time ever. DHS has also deployed additional canine teams trained to detect drugs and weapons and non-intrusive inspection technology that help identify anomalies in passenger vehicles at the Southwest border.

These initiatives and investments have yielded significant results. During this Administration, seizures of contraband along the Southwest border have increased across the board and illegal crossings continue to decline. In fiscal years 2009 and 2010, CBP seized more than \$104 million in southbound illegal currency—an increase of approximately \$28 million compared to 2007-2008. CBP and ICE also seized more than \$282 million in illegal currency, more than 7 million pounds of drugs, and more than 6,800 weapons in fiscal years 2009 and 2010 along the Southwest border—increases of more than \$73 million, more than 1 million pounds of drugs and

more than 1,500 weapons compared to 2007-2008. Moreover, Border Patrol apprehensions decreased 36 percent from nearly 724,000 in fiscal year 2008 to approximately 463,000 in fiscal year 2010—indicating that fewer people are attempting to cross the border. Further, in fiscal years 2009 and 2010, ICE made over 20,100 criminal arrests along the Southwest border, an increase of approximately 12% compared to the two previous years. Over 12,850 of these arrests were of drug smugglers and over 2,560 were of human smugglers.

The passage and signing of the 2010 Emergency Border Security Supplemental Appropriations Act provides for additional capabilities to secure the Southwest border at and between our ports of entry and reduce the illicit trafficking of people, drugs, currency and weapons. Specifically, this bill provides:

- \$14 million for improved tactical communications systems along the Southwest border;
- \$32 million for two additional CBP unmanned aircraft systems;
- \$176 million for 1,000 additional Border Patrol agents to be deployed between ports of entry;
- \$68 million to hire 250 new CBP officers at ports of entry and to maintain 270 officers currently deployed to ports of entry;
- \$80 million for 250 new ICE agents; and
- \$6 million to construct two forward operating bases along the Southwest border to improve coordination of border security activities.

Further, President Obama has deployed 1,200 National Guard troops to the Southwest border to contribute additional capabilities and capacity to assist law enforcement agencies.

MEASURING PROGRESS IN SECURING THE BORDER

Reducing the flow of illegal traffic between the ports of entry depends on the appropriate combination of personnel, tactical infrastructure, and technology. Personnel are the most robust and adaptable of these resources, as Border Patrol agents conduct surveillance and respond to incursions. Tactical infrastructure, primarily focused on physical fencing, enhances the ability of personnel to respond by creating delays or by making it easier for agents to reach a particular area.

The Border Patrol primarily uses technology for detection and surveillance between ports of entry, enabling CBP to maximize its effectiveness in responding to and disrupting illicit activity. In other words, technology enhances situational awareness of the amount and types of illegal activity at the border, enabling officers to spend more of their time responding to incursions and less of their time detecting them.

As shown in Figure 1, below, the Department's recent efforts have generated significant improvements in border security, as measured by a decline in apprehensions and an increase in drug seizures. Figure 1 shows that improvements in border security correlate with increases in the number of Border Patrol Agents.

Southwest Border Agents, Apprehensions and Marijuana Seizures FY93-FY10

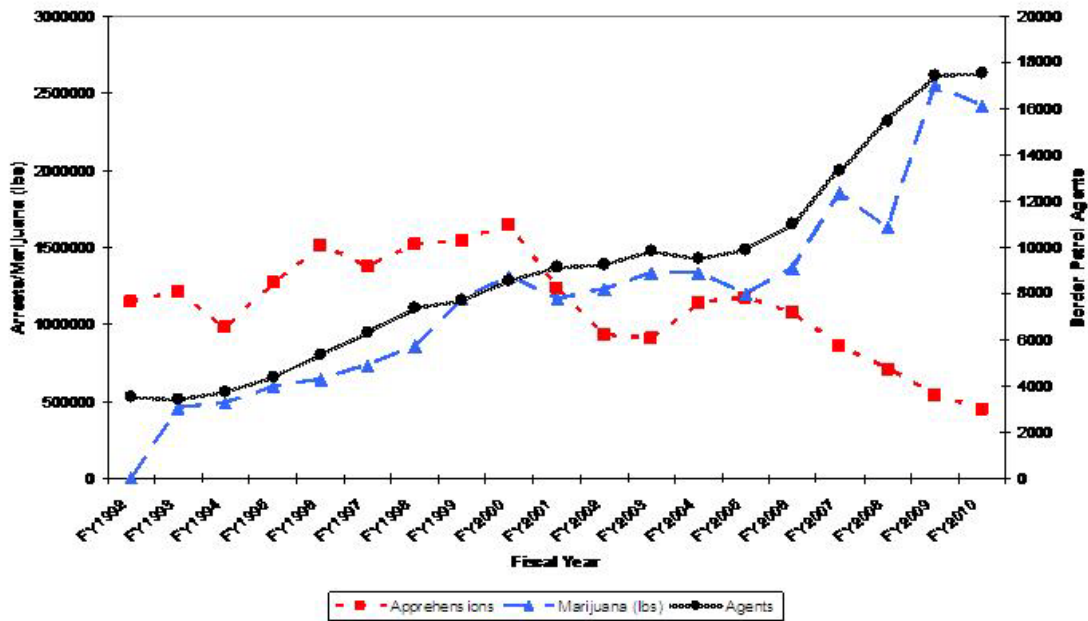


Figure 1: Correlation Among Number of Agents, Apprehensions, and Marijuana Seizures

Figure 2 (below) shows that increases in physical fencing—tailored appropriately for the specific needs of individual areas of the border—show a similar effect.

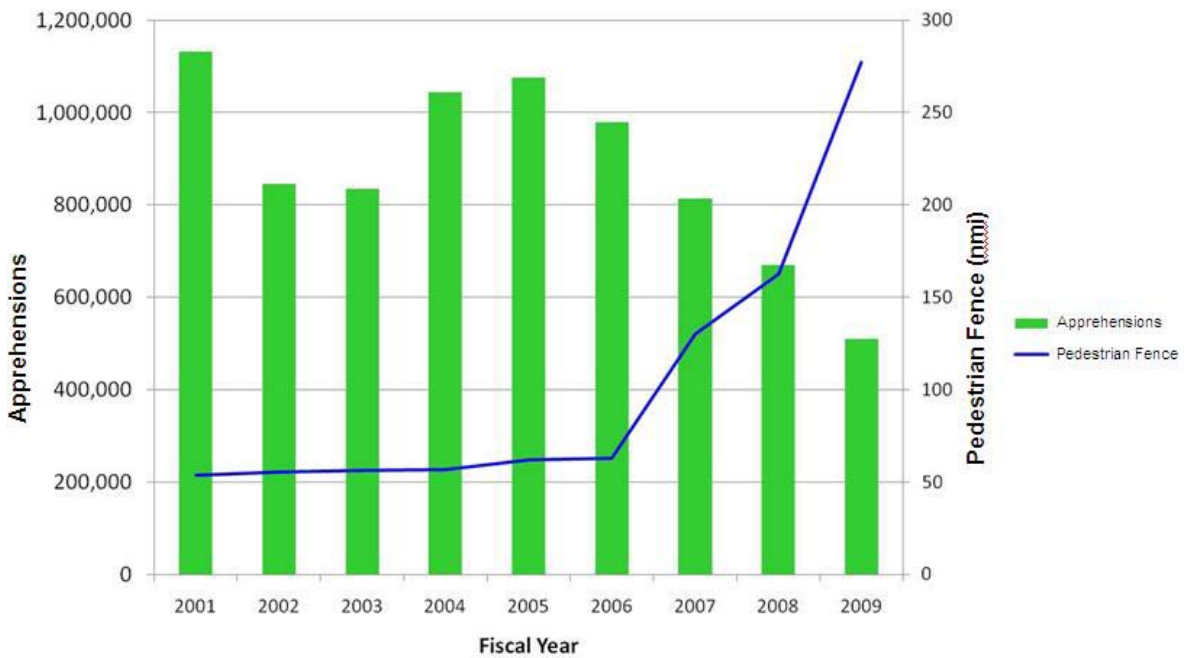


Figure 2: Correlation of Pedestrian Fence Mileage to Decreased Apprehensions

The Border Patrol, which currently utilizes a variety of measurements (such as apprehensions and drug seizures), will continue to expand on those measures to provide additional information about effectiveness in securing the border. Additional quantitative data that include measures of violence along the U.S.-Mexico border, disrupted operations of transnational criminal organizations (particularly with regard to smuggling illegal drugs, weapons and currency), interdictions of unlawful entry and exit of people and goods, and estimates of the total flow of such entries will provide an even more robust picture of effectiveness and of the impact of additional enforcement activities.

TECHNOLOGY AND BORDER SECURITY

Along the Southwest border, the primary technology system has been the Remote Video Surveillance System (RVSS), a tower with a pair of day and night cameras, which are monitored by Border Patrol Agents in a given area. There are currently 250 of these systems deployed along the Southwest border. More recently, DHS has added other systems, including truck mounted infrared camera systems and radars (Mobile Surveillance Systems, or MSSs), which are shown on an integrated display within the cab of the truck and are considered one of the most technologically advanced ground-based systems. There are currently 38 mobile surveillance systems (MSSs) deployed along the Southwest border. In addition, there are more than 130 aircraft (planes and helicopters) deployed to the Southwest border along with 3 Unmanned Aircraft Systems (UASs).

Historically, technology deployments in localized areas have contributed significantly to increased border security. For example, in 1992, the El Paso sector experienced over 20 percent of apprehensions within the Southwest border. The Border Patrol then deployed additional resources, including RVSS, near El Paso to stem the flow—with significant results. Focused deployment of RVSS in high traffic areas drove that number down to seven percent by 2000, and to less than five percent today. Another example is the San Diego sector. In 1992, almost 50 percent of Border Patrol apprehensions along the Southwest border occurred in the San Diego sector. By 2000, after the focused deployment of additional personnel and technology, apprehensions in San Diego were less than 10 percent of the Southwest border activity. After the success in San Diego moved traffic to the El Centro and Yuma sectors to the east, the deployment of RVSS to those areas assisted in decreasing that flow as well. With deployment of RVSS to El Centro, the apprehensions decreased from 15 percent in 2000 to about six percent today. Traffic in Yuma, which peaked at about 12 percent of the total Southwest border activity in 2005, is down to almost one percent after focused attention, including extensive deployment of RVSS. In short, deployment of technology systems that are continuously available correlates with the movement of activity away from those areas, and into areas without such technology.

SBI*net* HISTORY

Beginning in 2005, the Department initiated an ambitious technology program known as Secure Border Initiative-*network* (SBI*net*). SBI*net* was intended to cover the entire Southwest border (and eventually the entire border) with a single, comprehensive, and tightly integrated surveillance system where information from multiple sensors could be combined into one display, providing a clear picture of activity within a large area. Over time, the development of

*SBI*net was hindered by several factors, including technical issues that led to significant schedule delays, cost overruns, and the availability of other, less expensive technology systems that reduced the demand for *SBI*net.

Given these issues, in 2009, Secretary Napolitano asked CBP for an analysis of the *SBI*net program. Based on this analysis, Secretary Napolitano froze funding for *SBI*net beyond the ongoing, initial deployments of Block 1 and ordered a Department-wide reassessment of the *SBI*net program that incorporated an independent, quantitative, science-based “Analysis of Alternatives” to determine if *SBI*net was the most efficient, effective and economical way to meet our nation's border security needs. The assessment focused on two fundamental questions:

- Whether or not the *SBI*net program was viable—if it could be made to work effectively and fulfill the original intent of the program; and
- If *SBI*net was viable, whether other equally or more effective technologies were available at lower cost.

Prior to this assessment, the Department had never conducted a comprehensive cost-effectiveness analysis to assess the operational value of the *SBI*net system against the projected cost even though such an analysis is normally a well-established prerequisite for a project of this size.

***SBI*net VIABILITY**

The issue of viability was evaluated within the context of the initial *SBI*net configuration, known as *SBI*net Block 1, which has completed construction in two areas of the Arizona border—Tucson-1 (TUS-1) and AJO-1. While testing and evaluation in each of these sectors is underway¹, the Border Patrol has begun using the technology. The Border Patrol has used TUS-1 since February 2010 and AJO-1 since August 2010.

Although it is too early to quantify the effectiveness of the *SBI*net Block 1 technology, the qualitative assessments from the Border Patrol suggest that select elements of the technology such as sensor towers integrated together to observe localized areas, enhanced operational capabilities in some parts of the border. In the case of TUS-1, the Border Patrol experienced improved situational awareness and increased apprehensions of illegal entrants when they first started using the system despite no apparent increase in illegal traffic and, over time, a decrease in activity and apprehensions. In other words, it appears that the use of the TUS-1 system, in association with increased personnel and tactical infrastructure, contributed, in part, to decreasing the flow of illegal entrants and increasing the likelihood of their apprehension.

¹ Engineering testing of TUS-1 was completed last summer. In October and November, the Border Patrol conducted Operational Testing and Evaluation of TUS-1. The results of these tests are currently under analysis. AJO-1 completed its functional testing in December.

SBI^{net} COST-EFFECTIVENESS

To assess the cost effectiveness of SBI^{net}, DHS conducted an analysis using a standard practice known as an Analysis of Alternatives (AoA). The first phase, which is now complete, analyzed technology alternatives for Arizona. The Department will conduct additional phases in the coming months to complete the analysis of the entire Southwest border.

In the AoA, DHS quantified the effectiveness of various possible technology solutions by identifying the most important elements of effectiveness, and then assigning scores that reflect how well each technology option supports each of these elements. These scores are called “Measures of Effectiveness” (MOEs). Because there are several MOEs, each one was weighted, then combined into a single, overall effectiveness score.

The AoA also generated rough-order-of magnitude (ROM) cost estimates for each technology alternative. Together, the AoA compared the overall effectiveness score and ROM for each option.

The Department used this process to evaluate technology options in four specific areas along the Arizona border that were representative of other areas on the Southwest border and will complete individual assessments of additional sectors in the months ahead.

Within the AoA, the Department analyzed four types of technology options:

- Alternative 1, Agent-Centric, included small, usually handheld systems that assist individual agents in observing activity.
- Alternative 2, Fixed, focused on fixed sensor towers with radars and cameras integrated together through a common operating picture (COP)--the class of technology systems most like the existing SBI^{net} Block 1.
- Alternative 3, Mobile, focused on the class of technology systems like the existing Mobile Surveillance Systems (MSS) or Mobile Video Surveillance System (MVSS), which include cameras and radars and provide information from those sensors directly to the operator of the individual mobile system.
- Alternative 4, Aviation-Centric, focused on systems like the Unmanned Aircraft Systems (UAS), which are remotely piloted drones with sensors.

The results of the AoA also provided insight regarding possible combinations of these various options based on the relative strengths and weaknesses of each.

The AoA incorporated four Measures of Effectiveness (MOEs). Based on the Border Patrol’s assessment of relative importance, two of those counted for 85 percent of the overall effectiveness score: “Monitoring and Persistent Surveillance” and “Enable Timely and Effective Response.” “Monitoring and Persistent Surveillance” measured how well a technology option provides coverage (situational awareness) of all activities within a defined area. “Enable Timely and Persistent Surveillance” measured how well the particular technology enhanced each individual agent’s ability to focus on and respond to activity within the area. The other two

MOEs focused on the ability of the various options to support other considerations (for example, agent safety) and the ability to adapt to shifts in traffic and threats at the border.

The results of the AoA showed that the selection of technology for a given area of the border is highly dependent on the nature of that area. The heart of the *SBI_{net}* concept, a one size fits all, integrated fixed tower-based system, is not applicable across the entire border. In fact, the AoA suggested that the optimal technology deployment strategy would involve a mix of technology options tailored to each area of the border and based on the operational judgment of the Border Patrol Agents in that area.

Appendix A includes a more detailed description of the AoA process.

NEW BORDER SECURITY TECHNOLOGY DEPLOYMENT PLAN

After completion of the AoA, the Border Patrol used the results to develop a detailed technology deployment plan for each sector in Arizona based on current and anticipated operational activity. Accordingly, the new plan incorporates both the quantitative analysis of science and engineering experts and the real-world operational assessment of the Border Patrol on the ground.

The new border security technology plan will utilize existing, proven technology tailored to the distinct terrain and population density of each border region, including commercially available Mobile Surveillance Systems², Unmanned Aircraft Systems, thermal imaging devices, and tower-based Remote Video Surveillance Systems³. Where appropriate, this technology plan will also include elements of the former *SBI_{net}* program that have proven successful, such as stationary radar and infrared and optical sensor towers.

The Department believes that the new plan provides better coverage, more effective balance between cost and capability tailored to each area of the border, faster deployment of technology, and better linkage between operations and technology. Specifically, the Department believes that, relative to *SBI_{net}*, the new technology plan is:

- **More operationally appropriate:** The new plan is explicitly based on operational Border Patrol needs.
- **Lower risk:** The new plan leverages the lessons learned and technology investment from *SBI_{net}* and utilizes currently available technology systems that have already proven to be effective such as Remote Video Surveillance Systems (RVSS) and Mobile Surveillance Systems (MSSs).
- **More effective:** The new plan covers gaps in technology that would not have been accommodated by *SBI_{net}*.

² Within this report, we use Mobile Surveillance System (MSS) broadly to refer both to the current configuration of MSSs deployed along the border, as well as to the systems DHS will purchase from the ongoing competitive Mobile Surveillance Capability (MSC) procurement. MSSs are mobile (usually pickup truck-mounted) extensible poles with a radar, day camera, and night camera. The truck operator can view the signals from the cameras and radar on a display in the cab of the truck.

³ Remote Video Surveillance Systems, or RVSSs, are pairs of day and night cameras, often mounted on fixed poles. Each camera displays its individual image on a monitor at a Border Control Station.

- **More timely:** The new plan's use of currently available technology systems means these systems can be ordered, delivered and put to use on the front lines more quickly.
- **More cost-effective:** Since the plan considers proven, lower-cost solutions, like existing hand-held systems and commercially available mobile systems, it provides for a tailored deployment that balances cost and effectiveness.
- **Analytically defensible:** The new plan is supported by a science-based, quantitative Analysis of Alternatives (AoA), DHS science and engineering experts, and the assessment of experienced Border Patrol Agents.

The new technology plan will provide additional capability, providing more continuous and extensive surveillance of the Southwest border. Through investments in portable technology, the new plan provides flexible capabilities that will enable the Border Patrol to move and adapt to the threat. As we deploy the new technology, the Department will evaluate personnel needs and transition to a more mobile response capability as warranted. The Department recognizes that, as we tighten the security of one area, our adversaries will attempt to find new routes in other areas. A more mobile and flexible response capability will allow us to move with the changes in illegal patterns.

IMPLICATIONS OF THE NEW BORDER SECURITY TECHNOLOGY PLAN

At Secretary Napolitano's direction earlier this year, DHS froze funding for *SBI_{net}* beyond what is required to complete the ongoing deployments of TUS-1 and AJO-1 and diverted \$50 million of American Recovery and Reinvestment Act (ARRA) funding from *SBI_{net}* to other technologies. That \$50 million is being used to acquire⁴:

- 10 new backscatter radars for Border Patrol checkpoints (already delivered);
- 104 vehicle pursuit cameras for ports of entry (already delivered).
- 78 thermal imaging devices (48 already delivered, the remainder due by March 2011);
- 3 aerial observation cameras (delivery scheduled to begin March 2011); and
- At least 30 Mobile Surveillance Systems (MSS) (delivery scheduled to begin April 2011, exact quantity depending on final contract negotiations and pricing).

The ARRA investments have enabled the Department to augment existing technology systems across the Southwest border with a rapid infusion of proven technology. This provides a more immediate response to critical border security needs, partially mitigates the impact of *SBI_{net}* delays, and establishes a foundation for the more comprehensive technology deployment strategy resulting from the Secretary's re-assessment of *SBI_{net}* outlined in this report. Figure 4 summarizes the technology investments between the ports of entry, both before and after ARRA:

⁴ The systems funded by ARRA will be deployed to a number of areas along the border, including but not limited to Arizona. As a result, planned numbers to Arizona described later in this paper will differ from the total numbers shown here.

Sector	MSS		Handheld Thermal Imager		Backscatter	
	Pre-ARRA	ARRA-Add	Pre-ARRA	ARRA Add	Pre-ARRA	ARRA Add
San Diego	5	6	11	2	1	1
El Centro	0	2	3	2	0	0
Yuma	6	3	5	2	0	0
Tucson	20	8	25	32	4	4
El Paso	7	6	17	0	1	5
Marfa	0	3	3	2	1	0
Del Rio	0	2	3	2	0	0
Laredo	0	0	3	2	1	0
Rio Grande	0	0	3	16	2	0
TOTAL	38	30	73	60*	10	10

Numbers may change over time in response to operational needs. Quantities added by ARRA may increase based on contract negotiations.

* ARRA funded 78. 60 shown here are allocated to the Border Patrol. The remaining 18 are not shown here but are allocated to the Office of Air and Marine.

Figure 4: Technology Between the Ports of Entry with ARRA

As shown in Figure 4, redeploying funding from *SBI_{net}* to other technology has nearly doubled the availability of these other, cost-effective and commercially available technologies along the Southwest Border.

In addition to the systems highlighted in Figure 4, other systems have been deployed in Arizona for several years. Those include 58 Remote Video Surveillance Systems (RVSS) and 33 Mobile Video Surveillance Systems (MVSS, also known as “scope trucks”). The RVSS, in particular, are older systems that are becoming increasingly difficult and costly to maintain. The need to replace old RVSS, add new RVSS, and increase the number of MVSS systems became a significant consideration in the overall re-assessment of the *SBI_{net}* program, as detailed below.

Going forward, DHS will redirect funding originally intended for *SBI_{net}* – including the *SBI_{net}* funds in the pending FY 2011 DHS appropriations bill – to the new border security technology plan in Arizona and extending across the Southwest border in the out-years. The following chart summarizes, by focus area, the differences between what *SBI_{net}* originally included and the border security technology deployments under the new plan – demonstrating that the new plan will achieve both increased coverage and increased flexibility over the original *SBI_{net}* plan.

Original SBInet Deployment Plan for Arizona

<i>Focus Area 1 (Tucson, Nogales, and Sonoita)</i>	<i>Focus Area 2 (Ajo and Casa Grande)</i>	<i>Focus Area 3 (Douglas, Naco, and Wilcox)</i>	<i>Focus Area 4 (Yuma Sector)</i>
26 integrated sensor towers, including 9 already in TUS-1	23 integrated sensor towers, including 6 already in AJO-1	16 integrated sensor towers	26 integrated sensor towers

Proposed Arizona Technology Deployment Plan

<i>Focus Area 1</i>	<i>Focus Area 2</i>	<i>Focus Area 3</i>	<i>Focus Area 4</i>
24 integrated fixed towers, includes 9 already in TUS-1	23 integrated fixed towers, includes 6 already in AJO-1	8 integrated fixed towers	12 integrated fixed towers
6 new RVSS	4 new RVSS	2 new RVSS	6 new RVSS
9 replacement RVSS		13 replacement RVSS	19 replacement RVSS
15 RVSS cameras			
22 thermal imaging devices	13 thermal imaging devices	11 thermal imaging devices	10 thermal imaging devices
2 APSS	4 APSS	5 APSS	1 APSS
65 imaging sensors		75 imaging sensors	
200 UGS	200 UGS	125 UGS	20 UGS
	2 MVSS	2 MVSS	

Figure 5: Comparison of Original SBInet Deployment to New Technology Plan⁵

Figure 5 shows that the new plan contains significantly fewer “integrated fixed tower” systems than the original SBInet plan did. Instead, it includes lower cost systems to meet current requirements. In the original SBInet plan, older RVSS systems were anticipated to become obsolete with no plan for replacement or funding to address this shortcoming. As seen in Figure 4, the new plan includes replacement RVSSs, and specifically addresses this shortcoming of the old plan. This new plan also builds on the more near-term technology investments funded by ARRA and described in Figure 4.

If the President’s budget request for fiscal year 2011 Border Security, Fencing, Infrastructure, and Technology (BSFIT) is fully funded at \$185 million for new technology, CBP will be able to purchase all of the elements of the new technology plan except for the integrated fixed towers in 2011. The remaining budget required to complete the plan with the deployment of integrated fixed towers will be allocated from future year BSFIT budgets.

In addition, based on the 2010 Southwest Border Supplemental appropriation, the Department expects to add more than 500 additional Border Patrol Agents, 30 Customs and Border Protection Officers, 160 Immigration and Customs Enforcement Investigators, 1 Unmanned Aircraft System, and repair / replace 6 miles of physical fence in Arizona. These enhancements, coupled with the new technology deployment, are expected to significantly reduce the flow of illegal and narcotic traffic in Arizona. By 2014, when combined with investments in personnel

⁵ RVSS: Remote Video Surveillance System; MSS: Mobile Surveillance System; MVSS: Mobile Video Surveillance System (a truck-mounted, long-range infrared imaging device); APSS: Agent-Portable Surveillance System (a tripod-mounted, long-range infrared device that can be relocated by hand); UGS: Unattended Ground Sensor. Except where noted, the numbers on this chart are ADDITIVE to quantities of systems already deployed to Arizona.

and infrastructure, the Arizona technology plan is expected to provide situational awareness for the entire Arizona border.

Additional details are provided in Appendix B.

ACQUISITION STRATEGY AND THE CURRENT BOEING CONTRACT

As discussed above, the Department has concluded that the original concept for *SBI*net does not meet current standards for viability and cost-effectiveness. The *SBI*net system is not the right system for all areas of the border and it is not the most cost-effective approach to secure the border. However, some elements of the *SBI*net development have provided useful capability. The experience gained with the initial *SBI*net Block 1 deployments to TUS-1 and AJO-1 has shown that integrated fixed towers, connected through a common operating picture, can enhance the effectiveness of our agents and support border security. Therefore, although the Department will terminate the *SBI*net program as it currently exists, the Department will utilize the lessons learned during development and the elements of the system that have shown their worth and utility.

Currently, *SBI*net is developed and deployed under a very broad and flexible contract with the Boeing Corporation. The contract was awarded in 2006 with a 3-year base period, and includes provision for a sequence of three, one-year options. The Department exercised the first option year in 2009. The second option decision was due in September 2010, but the Department has deferred the option exercise pending the *SBI*net assessment results. Instead, the Department and Boeing have implemented incremental contract extensions until the assessment is complete.

Besides the completion of Block 1 TUS-1 and AJO-1, the current Boeing contract includes several other activities, including operation and maintenance of the TUS-1 and AJO-1 systems, maintenance of the Mobile Surveillance Systems, completion of RVSS towers along the Northern Border, construction of fence in Arizona, and storage of steel for future fence construction and repair. The contract does not include any follow on *SBI*net deployments.

In short, the Boeing contract includes a number of activities that will continue, regardless of the future of *SBI*net. For that reason, the Department intends to exercise the option to extend the contract through September 2011 to support these non-*SBI*net activities.

The Department does not intend to use the existing Boeing contract for procurement of any of the technology systems included in the new Southwest border technology plan. In the future, the Department will conduct full and open competition of the elements in the new border security plan, including any expansion of the integrated fixed towers.

NEXT STEPS

The Department is in the process of conducting the same type of analysis along the entire Southwest border. The next three focus sectors, including El Paso (which includes all of New Mexico), San Diego, and Rio Grande Valley, are the focus of the next round of analysis. The initial Analysis of Alternatives for these three sectors is complete and the Border Patrol

operational assessment is currently underway. The Department expects to have an initial proposed technology deployment for these sectors in January 2011.

Following these three high-priority sectors, the Department will complete the same process for the remaining five sectors along the Southwest border. This will result for the first time, by March 2011, in an optimum technology deployment plan for the entire Southwest border.

CONCLUSION

The independent, quantitative, science-based assessment of the *SBI_{net}* program has demonstrated that *SBI_{net}* is not the most efficient, effective and economical way to meet our nation's border security needs. Specifically, the assessment has made clear that *SBI_{net}* does not have the capability to provide a one size fits all integrated technological solution to border security. However, DHS' investment in *SBI_{net}* research and development has generated some advancements in technology that can improve our agents' ability to detect, identify, deter and respond to threats along the border.

Based on the assessment and the front line agents' evaluation, Secretary Napolitano has directed CBP to end *SBI_{net}* and instead utilize existing, proven technology solutions tailored to the distinct terrain and population density of each border regions.

Secretary Napolitano's decision recognizes that we must effectively deploy a wide range of proven technology along the Southwest border to best meet our nation's pressing border technology needs and complement this Administration's unprecedented investment in manpower, infrastructure and resources to secure the Southwest border.

The plan is consistent with the President's fiscal year 2011 Budget and with the Department's longer term strategy.

APPENDIX A

TECHNICAL APPENDIX: THE *SBI*net ANALYSIS OF ALTERNATIVES (PHASE 1A)

In January 2010, Secretary Napolitano ordered a Department-wide reassessment of the *SBI*net program that incorporated an independent, quantitative, science-based Analysis of Alternatives. This Analysis of Alternatives – a standard and widely accepted analytical approach – was intended to assess the cost effectiveness of *SBI*net and determine whether *SBI*net is the most efficient, effective and economical way to meet our nation's border security needs.

ANALYSIS OF ALTERNATIVES DESCRIPTION

An Analysis of Alternatives (AoA) identifies a set of options (“alternatives”) to meet a perceived need for a capability. After determining the options, the AoA identifies the important characteristics that distinguish them in their ability to meet the need. The AoA then assigns a weighted number value to each characteristic for each alternative and then combines the scores for each characteristic into one summary score. In this way, each alternative gets an effectiveness score, and all of the scores taken together provide a sense of which alternatives are most effective and which are least effective.

After calculating the effectiveness of each option, the AoA considers the cost. Since increased effectiveness often comes at increased cost, the AoA provides insight into the cost-effectiveness of each option, which in turn helps to frame the ultimate decision about what to buy. It is important to note that an AoA does not provide an absolute answer that determines what to buy, but rather provides a direct comparison of the cost and effectiveness of different alternatives to help an individual or organization make an informed decision. In summary, the AoA process provides a quantitative tool to compare the cost and effectiveness of various alternatives to assist decision-makers in making rational investment decisions.

THE *SBI*net ANALYSIS OF ALTERNATIVES—PHASE 1A

In the first phase⁶, the Department applied the AoA methodology to study the cost-effectiveness of *SBI*net compared to other technology alternatives in exemplar regions of Arizona. By focusing on exemplar regions, CBP was able to analyze the impact of factors like terrain and geography on the effectiveness of various technology options. The results provide insight into which alternatives are best suited for various conditions, and these conclusions can be extended to identify alternatives for other parts of the Southwest border.

The following four areas in Arizona were selected as the exemplars for the first AoA phase:

- Wellton, AZ: open and flat terrain with low vegetation; slow egress,
- West of Nogales, AZ: canyons with low vegetation; moderate egress,

⁶ In order to provide timely information to support near-term decisions, the Department is conducting the AoA in phases. The Department has completed the first phase, Phase 1A, which focused on Arizona. The Department intends to complete the AoA process for the entire Southwest border by early 2011.

- Sonoita, AZ: rolling and rugged terrain with dense vegetation; moderate egress,
- Naco, AZ: open and rolling terrain with low vegetation; quick egress,

Within each of these areas, the following four classes of technology alternatives were evaluated:

- Alternative 1, Agent-Centric: equip agents with hand-held or portable equipment such as binoculars, night vision goggles (NVGs), and long-range thermal imagers to conduct surveillance.
- Alternative 2, Integrated Fixed Towers (“Fixed”): deploy systems similar to the current configuration of *SBI_{net}*, consisting of towers with radar and cameras, along with software to link the information from the radars in order to direct the cameras. Multiple towers in an area are interconnected by a Common Operating Picture (COP) so that the system of towers acts like a single sensor array to survey a large area. Towers are typically 80 feet high but range from 40 – 120 feet, providing long range and expansive coverage.
- Alternative 3, Mobile: deploy portable systems such as the current configuration of the Mobile Surveillance System (MSS). The MSS is a stand-alone, truck mounted suite of radar and cameras that provide a display within the cab of the truck. An operator can use the information displayed to identify activity and advise responding agents. The truck mast is about 20 feet high, which provides good range, depending on the location of the MSS.
- Alternative 4, Aviation-Centric⁷: deploy dedicated systems such as the Unmanned Aircraft System (UAS) currently in use at CBP. The UAS is an airborne drone that has sensors that provide information to ground control stations. The UAS is highly effective at supporting ground operations in terrain that is not amenable to ground-based sensors or in situations that require a timely response to observe a specific area of interest for up to 20 hours.

The AoA evaluated the effectiveness of each of these alternatives in each of the exemplar areas against a set of four factors, or Measures of Effectiveness (MOEs). The MOEs were selected and weighted based on input from the Border Patrol, who has the requisite subject matter expertise to make those determinations. The four measures of effectiveness were:

- Provide Monitoring and Persistent Surveillance: measures the extent to which the technology alternative provides complete and continuous coverage of an area. This measure is calculated mathematically by multiplying persistence (how often a sensor visits the area) by coverage (how much area the sensor can see) by performance (how well the sensor actually detects and classifies activity) by availability (how often the system is up and running).
- Enable Timely and Effective Response: measures the extent to which the technology alternative enhances agent response by providing accurate and timely information. This measure is calculated by first evaluating the maximum response area of an agent—that is, how much area an agent *could* get to from where he or she is located—and then

⁷ The UAS is designed and acquired for a different set of purposes than *SBI_{net}*, supports a different set of requirements, and has utility beyond its effectiveness as a potential substitute for *SBI_{net}*. However, since CBP already uses UAS, the AoA sought to determine if there were cases when, in addition to its designed role, the UAS could effectively substitute for *SBI_{net}*.

measuring how much of that area the agent can realistically handle based on the accuracy and timeliness of the information provided from a particular technology alternative.

- Support to Other Mission Considerations: measures the extent to which the technology alternative addresses other considerations such as deterrence, agent safety, asset security, and access. This measure is calculated based on the results of a survey of subject matter experts.
- Supportability and Agility: measures the extent to which the alternative could readily be re-deployed or adjusted to respond to shifts in traffic and trends at the border. This measure is calculated based on the cost to redeploy the technology.

Combining costs with effectiveness provides additional insight and allows for an assessment of whether increased effectiveness is worth potentially increased cost. In each of the four exemplar areas, the AoA compared the overall weighted effectiveness scores against cost estimates. Cost estimates include initial procurement and deployment, as well as 10 years worth of operations and maintenance.

Based on the detailed quantitative analysis for each of the four exemplar regions, the AoA supports the following general conclusions about technology deployment options in Arizona:

- Alternative 1, the Agent-Centric systems, are generally lowest cost. Since these systems are currently commercially available, they are very low risk. However, they provide limited capability and the smallest increase in coverage and reach, compared to the other alternatives.
- Alternative 2, the Integrated Fixed Towers (“Fixed”) systems, significantly extend coverage and reach over moderate-sized areas that consist largely of open or rolling terrain. They are generally the highest cost among the alternatives evaluated.
- Alternative 3, Ground-Mobile Sensors, provide slightly less coverage and much less reach than Alternative 2 in open areas, but are significantly more re-deployable. They compare quite favorably to Alternative 2 in areas with significant amounts of restrictive terrain, where line-of-sight limits the benefits of Alternative 2’s taller fixed towers and Common Operating Picture (COP). These system can be particularly effective when used along with point sensor like unattended ground sensors (UGS).⁸
- Alternative 4, Unmanned Aircraft Systems, can provide significantly more coverage in areas with rugged terrain, but they cannot be everywhere and track everything at the same time. Like Alternative 3, the Alternative 4 systems have very strong synergy with point sensors like UGS.

The quantitative analysis from the AoA helped to inform the Border Patrol’s operational determinations of the optimal mix of technologies in each region along the border.

The reassessment found that no single technology option can meet all needs. By quantifying the strengths and weaknesses of technology options, including relative costs, the AoA supported Border Patrol efforts to determine how different technology could be utilized to provide timely and comprehensive situational awareness to enhance the effectiveness of agent response.

⁸ UGS are buried sensors that detect movement in their vicinity. Many areas of the border have UGS deployed.

APPENDIX B

The President's budget request for fiscal year 2011 provides for acquisition and deployment of the following systems:

- The area around Tucson, Nogales, and Sonoita:
 - 9 replacement RVSS near Nogales
 - 6 new RVSS
 - 15 RVSS cameras on existing communication towers
 - 22 hand-held thermal imaging systems
 - 2 APSS
 - 65 imaging sensors
 - 200 UGS

- The area around Ajo and Casa Grande:
 - 4 new RVSS
 - 2 MVSS
 - 13 hand-held thermal imaging systems
 - 4 APSS
 - 200 UGS

- The area around Douglas, Naco, and Willcox
 - 13 replacement RVSS near Douglas
 - 2 New RVSS
 - 2 MVSS
 - 11 hand-held thermal imaging devices
 - 5 APSS
 - 75 imaging sensors
 - 125 UGS

- The area around Yuma and Wellton:
 - 19 replacement RVSS
 - 6 new RVSS
 - 10 hand-held thermal imaging devices
 - 1 APSS
 - 20 UGS

The ARRA and fiscal year 2011 investments in Arizona will provide:

- Maintenance of the critical RVSS capability in areas where the current systems are aging and breaking down.
- Addition of new RVSS towers to add to the coverage area and fill gaps.
- Addition of more MSS units (funded by ARRA) to expand the current range and increase the density of MSS units deployed within the ranges.
- Hand-held and transportable systems that agents can take with them into areas of interest.