



Comprehensive Biometric Entry/Exit Plan

Fiscal Year 2016 Report to Congress



Homeland
Security

Message from the Secretary

April 20, 2016

I am pleased to present the following report, “Comprehensive Biometric Entry/Exit Plan,” prepared by U.S. Customs and Border Protection (CBP).

This report is provided in fulfillment of the reporting request included in the *Fiscal Year (FY) 2016 Consolidated Appropriations Act* (P.L. 114-113) and the accompanying Senate Report 114-68.

The report describes CBP’s Entry/Exit Transformation Strategy and documents CBP’s progress in closing gaps in biographic processing, implementing targeted biometric operations, and evaluating biometric capabilities to reengineer air entry/exit processes. It also sets forth CBP’s plan for expanding implementation of a biometric entry/exit system utilizing the funding made available in the *Fiscal Year (FY) 2016 Consolidated Appropriations Act*, which will inform efforts to achieve a comprehensive nationwide system. The Entry/Exit Transformation Strategy is part of CBP’s efforts to identify foreign nationals who overstay their lawful period of admission and will inform CBP’s implementation of a biometric entry/exit system, as mandated by statute. I have directed CBP to redouble its efforts to achieve a biometric entry/exit system, and to begin implementing biometric exit, starting at the highest volume airports, in 2018.



Pursuant to congressional requirements, this report is being provided to the following Members of Congress:

The Honorable Harold Rogers
Chairman, House Committee on Appropriations

The Honorable Nita M. Lowey
Ranking Member, House Committee on Appropriations

The Honorable Thad Cochran
Chairman, Senate Committee on Appropriations

The Honorable Barbara A. Mikulski
Ranking Member, Senate Committee on Appropriations

The Honorable Robert Goodlatte
Chairman, House Judiciary Committee

The Honorable John Conyers, Jr.
Ranking Member, House Judiciary Committee

The Honorable Chuck Grassley
Chairman, Senate Committee on the Judiciary

The Honorable Patrick Leahy
Ranking Member, Senate Committee on the Judiciary

The Honorable Michael McCaul
Chairman, House Homeland Security Committee

The Honorable Bennie G. Thompson
Ranking Member, House Homeland Security Committee

The Honorable Ron Johnson
Chairman, Senate Committee on Homeland Security and Governmental
Affairs

The Honorable Thomas R. Carper
Ranking Member, Senate Committee on Homeland Security and
Governmental Affairs

If you have any questions, please do not hesitate to contact me at (202) 282-8203
or the Department's Deputy Under Secretary for Management and Chief Financial
Officer, Chip Fulghum, at (202) 447-5751.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jeh Charles Johnson". The signature is highly stylized with several loops and a long horizontal tail.

Executive Summary

This report describes CBP's Entry/Exit Transformation Strategy and the progress made to date in improving existing entry/exit operations. In fulfillment of the reporting obligation contained in Div. F, Title I of the *Fiscal Year (FY) 2016 Consolidated Appropriations Act* (P.L. 114-113), this report also describes CBP's plan for expanding implementation of a biometric entry/exit system, based on technological and operational lessons derived from past, ongoing, and planned pilots, and utilizing the funding authorized in Title III of the *FY 2016 Consolidated Appropriations Act*. The Secretary of Homeland Security has directed CBP to redouble its efforts to achieve a biometric entry/exit system, and to begin implementing biometric exit, starting at the highest volume airports, in 2018.

CBP currently has an entry/exit program based on *biographic* data used for immigration and screening purposes. This data – the accuracy and reliability of which has significantly improved over the past 2 years since the entry/exit mission transitioned to CBP – was used to produce the *Entry/Exit Overstay Report, Fiscal Year 2015*, which the Department released on January 19, 2016. This report indicated that approximately 99 percent of nonimmigrant visitors arriving at air and sea ports of entry abided by the terms of their admission. Supporting this biographic entry/exit program is a *biometric* entry program used to identify foreign nationals seeking admission to the United States. CBP is undertaking implementation of a biometric *exit* program as the final piece of the overall entry/exit program.

The design of a biometric exit program is not limited to collecting biometric information from a departing passenger; the system must also support efforts to ensure that the passenger actually departs from the United States. Ensuring accurate tracking of departures is complicated given the existing environment at U.S. airports, which were constructed without the infrastructure needed to support biometric exit control procedures. Accordingly, one of the primary challenges of deploying an effective biometric exit system includes designing and developing a new process for verifying departure where none exists today and doing so in a very complex and time-sensitive operational environment. The biometric exit system must not be disruptive to travel and commerce, and therefore will require both process transformation and technological innovation.

In 2015, CBP initiated three targeted biometric entry/exit pilot projects at the top 10 airports and at the pedestrian crossings on the Southwestern border. The 1-to-1 Facial Comparison project matches the face of the person presenting a U.S. passport for entry into the United States with the photograph embedded in the passport to combat imposter fraud. The Biometric Exit Mobile project provides a CBP officer at an airport departure gate with instant access to biographic and biometric entry information that previously

was available only through hard-wired connectivity. Also, it allows the CBP officer to biometrically record the departure of foreign nationals. The Pedestrian Entry/Exit project evaluates the effectiveness of using multimodal biometrics to match certain pedestrian travelers departing the United States, in an outdoor environment on the Southwestern border, against entry information.

The results from these pilots will inform the future biometric exit solution by identifying how best to leverage our existing biographic capabilities, determining the overall accuracy of the biographic exit data that CBP receives today, and testing new business processes and emerging technologies. The Department and CBP will continue to apprise Congress of the results of these projects and their implication for the deployment of the biometric entry/exit system.

CBP has been planning for biometric entry/exit, as part of its Entry/Exit Transformation Strategy, since obtaining this direction and authority in 2013. Following the enactment of the *FY 2016 Consolidated Appropriations Act*, which authorizes funding for a biometric exit program of up to \$1 billion to be collected through fee surcharges over a period of up to 10 years, CBP further developed its plan to build the future comprehensive biometric exit program, based on the availability of this funding. Although the implementation plan contained in this report is preliminary, CBP will continue to refine and build out this plan and to keep the Committees informed of its progress. As described further in this report, successful execution of this plan will require continued work to address a number of technological, operational, and other challenges, as well as to manage the project subject to the funding limitations established in the Appropriations Act. Full nationwide deployment of a comprehensive entry-exit system at all ports of entry will require additional resources not available from the authorized surcharges.

Overall, the information contained in this report underscores the significant progress that CBP has made in advancing the entry/exit mission, and the Department of Homeland Security's commitment to fulfilling the congressional mandate¹ to implement a biometric entry/exit system.

¹ 8 U.S.C. 1365b(d).



Comprehensive Exit Plan

Table of Contents

I. Legislative Language	1
II. Background.....	3
A. Mission Need for Data on Foreign Nationals Departing the United States	3
B. Distinctions between Biographic and Biometric Exit Programs	3
C. CBP Entry/Exit Transformation Strategy.....	4
III. Closing Biographic Gaps	7
A. Arrival and Departure Information System Realignment and Progress	7
B. Overstay Validation and Vetting Progress	8
C. Annual Entry/Exit (Overstay) Report.....	9
D. Land Entry/Exit Program.....	9
1. U.S.-Canadian Border	10
2. U.S.-Mexican Border	11
3. Pedestrian Biographic Exit.....	12
4. “Subsequent Arrivals” Analysis.....	12
IV. Targeted Biometric Operations	14
A. 1-to-1 Facial Comparison Experiment	14
B. Biometric Exit Mobile Experiment	15
C. Pedestrian Entry/Exit Project.....	16
V. Transforming Entry/Exit Processes	18
A. CBP Projects and Activities through 2015	18
B. Implementation Strategy.....	19
1. Upgrade Infrastructure	20
2. Support Operations.....	21
3. Implement Biometric Entry/Exit Solutions.....	21
C. Preliminary Implementation Challenges	22

VI. Conclusion.....	24
VII. Appendix - Abbreviations.....	25

I. Legislative Language

This document responds to statutory language contained in Div. F, Title I, of the *Fiscal Year (FY) 2016 Consolidated Appropriations Act* (P.L. 114-113) and language in the accompanying Senate Report 114-68.

P.L. 114-113 states:

Provided further, That not later than 30 days after the date of enactment of this Act, the Secretary of Homeland Security shall submit to the Committees on Appropriations of the Senate and the House of Representatives, the Committees on the Judiciary of the Senate and the House of Representatives, the Committee on Homeland Security and Governmental Affairs of the Senate, and the Committee on Homeland Security of the House of Representatives, the comprehensive plan for implementation of the biometric entry and exit data system as required under this heading in P.L. 114-4 and a report on visa overstay data by country as required by section 1376 of title 8, United States Code: *Provided further*, That the report on visa overstay data shall also include—

- (1) overstays from all nonimmigrant visa categories under the immigration laws, delineated by each of the classes and sub-classes of such categories; and
- (2) numbers as well as rates of overstays for each class and sub-class of such nonimmigrant categories on a per-country basis:

Provided further, That of the funds provided under this heading, \$13,000,000 shall be withheld from obligation for the Office of the Secretary and Executive Management until both the comprehensive plan and the report are submitted.

Senate Report 114-68 states:

EXIT

DHS has been required by multiple statutes to implement a comprehensive biometric entry-exit system for the purpose of enhancing national security and improving the integrity of our immigration system, while facilitating travel. The introduction of the fingerprint-based biometric capability for visa issuance and entry revolutionized our immigration system and greatly enhanced our security posture. Further, progress has been made in collecting and matching biographic data from both entry and exit such that 97 percent of departing aliens can be matched to their arrivals. Yet, the Department has failed to implement a fully biometric entry-exit system.

Pursuant to Public Law 114–4, the Department is required to submit its plan for implementation which has yet to be submitted. The bill includes language withholding \$13,000,000 from obligation for the Office of the Secretary and Executive Management until this plan has been submitted...

II. Background

A. Mission Need for Data on Foreign Nationals Departing the United States

One of the core missions of U.S. Customs and Border Protection (CBP) is to enforce and administer U.S. immigration laws. A key aspect of effective enforcement is the ability to discern individuals who are lawfully present in the United States from those who have violated their terms of admission by staying beyond their authorized period of stay without formally changing or adjusting their status. An effective immigration system requires an end-to-end process that collects biographic and/or biometric data from covered classes of nonimmigrant aliens upon the visitors' exit from the United States and matches it to data from their entry into the United States. Without exit data, there is no meaningful way to determine whether foreign nationals overstayed their authorized periods of admission.

Currently, biographic exit data provided by airline carriers or other sources is matched to the entry data collected by CBP officers at the time that a foreign national was admitted to the United States. Before determining if a foreign national has overstayed the terms of her or his admission, DHS analyzes the data on the range of encounters that the individual may have had, including whether the individual may have lawfully extended his or her stay in the United States or changed/adjusted his or her status through U.S. Citizenship and Immigration Services (USCIS).

In May 2012 and September 2013, DHS provided Comprehensive Exit Plans to Congress detailing its efforts toward enhancing its existing entry/exit system, including integration of biometric capabilities. Since the last report was provided, CBP has made significant progress in increasing the availability of exit data for DHS decision-makers, enhancing the quality of that data, effectively matching the entry and exit data on foreign nationals, and identifying overstays.

B. Distinctions between Biographic and Biometric Exit Programs

In previous legislation and programs, there have been significant discussions concerning the type of exit data that should be collected. Typically, most countries use biographic data, which includes text data commonly found on the data page of a traveler's passport, such as name, date of birth, and country of citizenship.² The United States currently collects biographic data on all air and sea international departures through manifests

² Text data can be captured electronically through passport features on the basis of international standards, such as a machine-readable zone or an e-Passport chip.

provided by the carriers. CBP recently analyzed this data for some categories of visitors to produce the *Entry/Exit Overstay Report, Fiscal Year 2015*, which the Department released on January 19, 2016, to the appropriate congressional committees and the public, and which was the first overstay report produced by the Department. This report indicated that approximately 99 percent of nonimmigrant visitors arriving at air and sea ports of entry abided by the terms of their admission.

A biometric system requires collection of additional data: a record of a physical component of a person that is unique to an individual, such as a facial image, iris image, or fingerprint. CBP has collected biometric data from in-scope³ foreign nationals arriving at air, land, and sea ports of entry since 2004. This information is checked against various databases for derogatory information, including criminal, immigration violator, and known or suspected terrorist watch lists.

A biometric exit program provides greater assurance of the identity of departing travelers and provides for more complete and accurate matching of entry/exit records. A biometric exit program helps to ensure that a traveler could not depart as an imposter (i.e., use someone else's travel documents/identity when departing) or have someone depart on his or her behalf (i.e., someone else uses the supposed traveler's documents). Biometrics offer a greater degree of assurance that the individual departing the United States is who he or she claims to be.

Continuing to improve the exit program, including through the collection of biometric data, will create more accurate, system-identified overstay records, thus reducing the number of overstay records that must be manually vetted before forwarding to investigatory field offices for enforcement action. However, it is important to note that requirements to collect biometric data at point of departure will also involve changes to processes currently accepted by the traveling public and the transportation industry.

C. CBP Entry/Exit Transformation Strategy⁴

The *FY 2013 Consolidated and Further Continuing Appropriations Act* (P.L. 113-6) created a new structure within DHS for operational oversight of the entry/exit biometric and overstay analysis programs. Entry/exit policy and operations were transferred from United States Visitor and Immigrant Status Indicator Technology (US-VISIT) to CBP. The overstay analysis function was transferred from US-VISIT to U.S. Immigration and Customs Enforcement (ICE).⁵

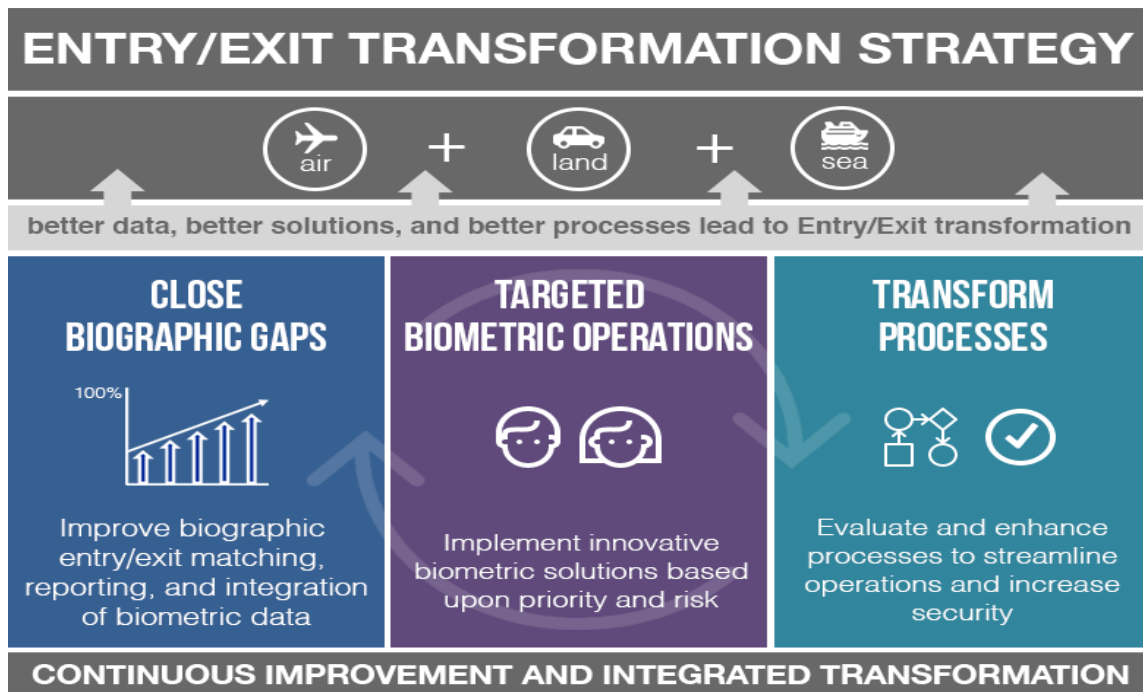
³ "In-scope" traveler is defined as any person who is required by law to provide biometrics upon entry to the United States, pursuant to 8 CFR 235.1(f)(ii). This includes all non-U.S. citizens within the ages of 14 to 79 with some exceptions, such as diplomats or Canadian nationals who enter as tourists.

⁴ *CBP Entry/Exit Transformation (EXT) Strategy and Implementation Plan*, August 2014

⁵ The remaining parts of the US-VISIT program became the Office of Biometric Identity Management.

In March 2013, CBP took over official leadership of entry/exit policy and operations. CBP has adopted a strategic approach to both entry and exit traveler processing across all travel modes, taking into consideration increased international travel, largely fixed infrastructure, and constrained resources. To address the existing biometric exit mandate effectively with minimal impact on legitimate trade and travel, a comprehensive exit strategy must consider improvements to the end-to-end entry/exit processes.

CBP has developed a strategy for entry/exit that has three goals: (1) reducing biographic gaps by expanding biographic collection, (2) conducting targeted biometric operations, and (3) transforming entry/exit operational processes. The third goal includes a preliminary implementation strategy and plan for deployment of a biometric exit program, which will be funded in part through collections authorized in the *FY 2016 Consolidated Appropriations Act*.



Goal 1: Closing Biographic Gaps

Although its air entry/exit biographic capabilities are strong, CBP is updating existing systems to support new capabilities to collect pedestrian exit information at the land borders with Mexico. CBP will continue to improve the collection of biographic data on exit through: data exchange agreements with Canada and Mexico; enhancements to existing biographic systems; and implementation of automated technology in the departure environment to capture information from machine-readable documents. The

increased biographic capture on exit will provide more data to support the identification and targeting of persons of interest seeking to depart the United States, as well as enhance the capability to identify immigration violators.

Goal 2: Targeted Biometric Operations

CBP is conducting targeted biometric testing to evaluate the impact of different biometric-based technologies and processes on existing entry/exit procedures, determine their potential impact on trade and travel, and assess the viability of new technologies to provide assurance of identity. The targeted biometric tests currently being implemented by CBP seek to quantify security risks and gaps, validate the performance of existing biographic systems and processes, and evaluate operational concepts to support the longer-term implementation of biometric entry/exit solutions.

Goal 3: Transform Processes

Based on its evaluation of operational processes and technological capabilities from operational biometric tests, CBP will identify and implement transformative solutions to deploy a biometric exit system with minimal impact on trade and travel. This will include enhancing existing infrastructure and support operations necessary for deployment of a biometric exit system.

Activities supporting each of these three goals are discussed in the following three sections.

III. Closing Biographic Gaps

CBP's biographic entry/exit program is the foundation that will support the future implementation of a biometric entry/exit system.

A. Arrival and Departure Information System Realignment and Progress

In January 2014, both technical and operational management of the Arrival and Departure Information System transitioned from the Office of Biometric Identity Management to CBP. The Arrival and Departure Information System is a central repository for data on foreign nationals who have applied for admission, have been admitted, changed or adjusted their status, or departed the United States. The Arrival and Departure Information System consolidates information from various systems in order to provide a repository of data for entry and exit tracking of immigrants and nonimmigrants. CBP primarily uses the Arrival and Departure Information System to facilitate the investigation of subjects of interest who may have violated their immigration status by remaining in the United States beyond their authorized stay. Other uses include assisting in determining visa or immigration benefits eligibility, and providing information in support of law enforcement, intelligence, and national security investigations, consistent with the law and privacy policy.

Since Congress transitioned the Arrival and Departure Information System to CBP, CBP has completed the operational and information technology management transfer of the Arrival and Departure Information System and developed a roadmap for future operations. CBP recently performed necessary upgrades to the Arrival and Departure Information System, including updating business rules to assist in closing out foreign traveler entry records with departure transactions; enhancing search capabilities to assist stakeholder missions; and updating services required by ICE, USCIS, the U.S. Transportation Security Administration (TSA), and the U.S. Department of State.

CBP received \$11.1 million through the *FY 2015 Consolidated and Further Continuing Appropriations Act* (P.L. 113-235) to develop a new technical reporting environment for the Arrival and Departure Information System data. The funding is being used to develop the following mission-critical capabilities:

- **Automate and Enhance Data Sharing:** Provide the Intelligence Community and other government entities with automated and transactional data sharing capabilities to assist in their distinct missions, consistent with the law and privacy policy.
- **Reporting and Analytics Environment:** Automate country-specific overstay reports. A separate reporting environment is critical to ensuring that the real-time

data needed to support the overstay mission is optimized and that this reporting does not impact the performance of day-to-day operations.

B. Overstay Validation and Vetting Progress

The September 2013 Comprehensive Exit Plan report describes the overstay validation and vetting program and the phased efforts to advance it. Below is a summary of accomplishments since 2013:

- **April 2013:** CBP completed integrating full hotlist automation and connectivity that provides ICE Homeland Security Investigations and Enforcement and Removal Operations with the capability to track overstays in the targeting environment.
- **June 2013:** Building on previous work, CBP expanded the use of additional law enforcement and counterterrorism data in the Enforcement and Removal Operations hotlist for ICE. CBP also implemented recurrent vetting on additional historic overstay populations supported by CBP's Automated Targeting System–Passenger and the Arrival and Departure Information System.
- **July 2014:** CBP integrated the Enforcement and Removal Operations hotlist to support ICE, expanding data sources into the vetting process to provide a more complete picture, and integrating the National Crime Information Center recurrent vetting capabilities. CBP additionally integrated User Defined Rules, which provide the capability for end users to create rules within Automated Targeting System–Passenger as threats evolve to identify overstays meeting certain threat criteria.
- **October 2015:**
 - Integrated ICE's LeadTrac Modernization Case Management System as part of a unified data exchange interface coordinated by the Arrival and Departure Information System. The Arrival and Departure Information System will benefit from enhanced overstay case updates from ICE.
 - Enhanced the Arrival and Departure Information System and Automated Targeting System–Passenger, which provides system-identified overstay records on a daily basis to ICE, and improves the timeliness of the overstay-lead validation and vetting process.
 - Completed enhancement of the Arrival and Departure Information System and TSA Alien Flight School Program Data Exchange – TSA relies on the Arrival and Departure Information System to identify overstays who are enrolled in the Alien Flight School Program.
- **2016:**
 - Deploying an enhanced overstay data vetting service with the Arrival and Departure Information System and the USCIS Person-Centric Query

System to account for additional changes in immigration status to resolve overstays for ICE analysis and enforcement.

- Enhancing the Arrival and Departure Information System matching logic based on recommendations provided by Lawrence Livermore National Laboratory.
- Continuing to improve the Arrival and Departure Information System and Student Exchange Visitor Information System⁶ Interface. This enhancement will ensure that CBP has an accurate picture of overstays by foreign students. It will close out many false positive overstay cases, allowing for better allocation of resources.

C. Annual Entry/Exit (Overstay) Report

On January 19, 2016, DHS published⁷ *the Entry/Exit Overstay Report – Fiscal Year 2015*.⁸ The report included data on nonimmigrants who enter the United States by air and sea as tourists for business or pleasure, which represent over 85 percent of annual nonimmigrant admissions. The report contained charts that detail expected departures and overstay rates for these categories of nonimmigrant visitors by country. The report also distinguished between countries that participate in the Visa Waiver Program and those countries that do not, indicating that the overstay rate of nonimmigrants from Visa Waiver Program countries is less than half of those from other countries. The report provided an explanation of how CBP matches entry and exit records for the categories of nonimmigrant visitors who arrive and depart by air and sea, and a breakdown of the various steps used by the Arrival and Departure Information System in order to determine the most accurate entry/exit data possible.

Funding provided in the *FY 2015 Consolidated and Further Continuing Appropriations Act* will fund the Reporting/Analytics environment discussed above and will allow CBP to streamline the analysis necessary to calculate overstay statistics more quickly and frequently. In addition, the funding will allow CBP to expand the report in future years to include other categories of nonimmigrants who overstay their period of admission, such as international students and temporary workers, as we move toward achieving reporting of all nonimmigrant visa categories.

D. Land Entry/Exit Program

⁶ Student, exchange visitor, and dependent information are maintained in the Student Exchange Visitor Information System. The Student Exchange Visitor Information System is an Internet-based system that maintains real-time information on nonimmigrant students (F and M visa), exchange visitors (J visa), and their dependents (F/M/J-2).

⁷ The document is available at <http://www.dhs.gov/news/2016/01/19/dhs-releases-entryexit-overstay-report-fiscal-year-2015>.

⁸ 8 U.S.C. §1365a(e)

Recording the exit of travelers departing the United States is especially challenging in the land environment given the lack of physical infrastructure in departure lanes at the land ports and the limited availability of CBP officers to support departure operations. For these reasons, CBP has explored options for the recording of a foreign national's departure that do not rely primarily on infrastructure improvements.

In 2014, CBP performed a "Current State Assessment" that assessed the collection of biographic exit data to assist CBP in quantifying progress that could be achieved by implementing specific efforts. Additionally, CBP is actively analyzing exit data gaps to determine how to capture exit data on higher-risk populations. Each of the initiatives described below is focused on potential improvements identified in the assessment.

1. U.S.-Canadian Border

The *Beyond the Border* declaration⁹ gave DHS an opportunity to develop a low-cost way to collect exit information along the Northern border of the United States.

The existing program is premised on the United States and Canada exchanging entry information for those travelers who cross the shared land border. If a traveler enters Canada from the United States across the land border, the Canada Border Services Agency transmits that entry data back to CBP, which uses the data as the record of the individual's departure from the United States. In return, the United States does the same for Canada. Through this mechanism, each country has achieved a land exit solution by working together and negating the need for costly new physical infrastructure or processes that could interfere with or delay the flow of travel or trade in the border region.

On June 30, 2013¹⁰, the project expanded to entry points at *all* common land ports when Canada and the United States began exchanging the entry data for third-country nationals, permanent residents of Canada, and U.S. Lawful Permanent Residents. Accordingly, the United States now has a fully functioning land border exit system on its Northern border for non-U.S. and non-Canadian citizens.

The next phase ("Phase 3") of the project was scheduled to deploy on June 30, 2014, which would have expanded the program to *all travelers* (including U.S. and Canadian citizens) who enter through any common land ports on the Northern border. However, in

⁹ United States-Canada Beyond the Border: A Shared Vision for Perimeter Security and Economic Competitiveness, Action Plan, December 2011. Accessible at https://www.whitehouse.gov/sites/default/files/us-canada_btb_action_plan3.pdf.

¹⁰ <https://www.cbp.gov/newsroom/national-media-release/2013-07-03-040000/us-canada-begin-phase-ii-entryexit-project>.

May 2014, the Government of Canada stated that Phase 3 would need to be postponed until such time as necessary Canadian legal changes are enacted

On March 10, 2016, the Government of Canada announced that it will pursue legislation to enact the last phase of the entry/exit program. CBP will work closely with Canada Border Services Agency to complete the project once legislation has passed.

2. U.S.-Mexican Border

Largely due to the successes of the U.S.-Canada entry/exit data exchange program, CBP is now exploring whether and how similar collection and exchange of entry/exit information could occur with the Government of Mexico on the U.S.-Mexican border. CBP is developing a plan that will analyze the existing opportunities and short- and long-term options for the development of exit capability on the Southwest border.

There are significant differences between the Northern and Southwestern borders that will make a biometric (and biographic) land entry/exit system on the Southwest border more challenging. Unlike Canada, Mexico does not have fixed physical structures at every major port of entry on its border with the United States to process travelers entering Mexico, nor does it have data collection procedures similar to the United States and Canada.

Since the September 2013 report, CBP has made some progress on obtaining data of third-country nationals who depart by land. The United States and Mexico have discussed sharing data on admissions into Mexico from those travelers who register in the interior of Mexico—approximately 30 kilometers from the border. While this effort would not cover individuals entering Mexico from the United States, it is a first step toward a data exchange program for land entry/exit with Mexican immigration officials. Talks are continuing to further develop this effort.

The Government of Mexico has in the past year made a series of announcements indicating that it will be more proactive in collecting data on its side of the shared border.¹¹ DHS and CBP continue to emphasize the importance of this effort in their bilateral relations with the Government of Mexico. CBP will keep the Committees updated on progress toward a similar data exchange on the Southern border of the United States.

3. Pedestrian Biographic Exit

¹¹ Dibble, Sandra. "Mexico to step up pedestrian border inspections," <http://www.sandiegouniontribune.com>. 19 July 2015. <<http://www.sandiegouniontribune.com/news/2015/jul/19/mexico-increase-pedestrian-inspections-san-ysidro/>>.

In December 2015, CBP began an outdoor pilot at the Otay Mesa, California, Port of Entry to test the collection of biographic data for pedestrians arriving into and departing the United States.¹² Biographic information is provided by all pedestrian travelers while biometric information is only provided by in-scope foreign national pedestrians. The biometric portion of this program is described later in this report.

Under this pilot, travelers carrying documents embedded with radio frequency identification tags, such as Border Crossing Cards and Passport Cards, will have their documents read and an exit recorded upon departure. Kiosks will be used to collect biographic data from travel documents that are not vicinity-based radio frequency identification-enabled, such as a passport. This experiment will measure the accuracy and efficiency of the collection of biometric and biographic data from pedestrian travelers in an outdoor environment. The improved collection of biographic data from pedestrians will close a significant gap in biographic exit data collection.

4. “Subsequent Arrivals” Analysis

In 2015, CBP performed a study to better understand travel patterns and the risk of overstays by travelers entering the United States by land from Mexico. The objective was to use a “subsequent arrival” (an arrival recorded subsequent to their initial or previous entry) into the United States as a “proxy” for a prior exit, and therefore better understand where to focus enforcement resources. A person who re-enters the United States within a short period of time of his or her initial entry, as long as the second entry is within the initial period of admission, is necessarily not an overstay on that initial entry. For example, a person who enters the United States with a 90-day admission period, and then re-enters the United States a week later, cannot be an overstay on that original 90-day admission period, even if there is no record of his or her departure. This study analyzed all arrival records of travelers on the Southwestern border in 30-day intervals to identify what population of Southwestern border crossers could be identified as having departed the United States by virtue of a subsequent return visit. Using this methodology, CBP is able to close out Southwestern border arrivals through the record of a subsequent arrival.

Through this initial subsequent arrival study, CBP conducted analyses of land border crossing data to determine the subsequent arrival rate on the Southwestern border for various time periods. The findings of the analysis will be used to support future land border exit enhancements.

¹² <http://www.dhs.gov/sites/default/files/publications/privacy-pia-cbp-swborderpedestrianexit-november2015.pdf>

Figure 2 represents the rate of re-entries for nonimmigrants and shows that the majority of travelers during FY 2013 re-entered the United States within 5 days of their initial arrival. Further, of all nonimmigrants who entered the United States via the Southwestern border in FY 2013, 81.6 percent returned to a Southwestern land border port of entry within 30 days—the typical period of admission for an individual entering the United States from the Southwestern border using a Border Crossing Card. Additionally, 93.9 percent re-entered within 180 days, which is the typical period of admission for an individual entering the United States under a B1/B2 visa. It is important to note that these statistics do not measure actual departures from the United States, but re-entries following an initial admission (which, by definition, requires a departure). Therefore, the actual departure rate is higher than these numbers because some travelers did not re-enter the United States during the 30- and 180-day timeframes.

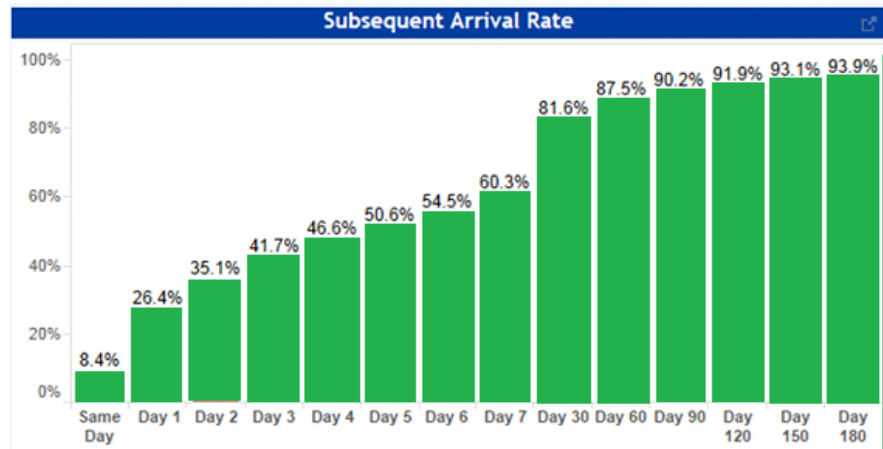


Figure 2. Subsequent Arrival Rates, Nonimmigrant Population

CBP is refining its methodology and analyzing the population with no subsequent arrivals to determine what percentage that has not returned within 180 days could be considered at risk of having overstayed. CBP will also be looking at other sources of data to determine if these travelers departed the country other than at the Southwestern border. This analysis will help CBP to focus on the higher-risk populations, including those that do not subsequently enter the United States on a regular basis.

IV. Targeted Biometric Operations

In 2015, CBP initiated three targeted biometric tests to evaluate the use of biometric technology for closing existing gaps in entry/exit processes: 1-to-1 Facial Comparison, Biometric Exit Mobile, and Pedestrian Entry/Exit.

The 1-to-1 Facial Comparison and Biometric Exit Mobile experiments were deployed in May and July 2015, respectively, and the Pedestrian Entry/Exit experiment completed deployment in February 2016. Each of the projects will have a detailed evaluation and analysis phase that will be used to inform a future comprehensive biometric exit solution.

A. 1-to-1 Facial Comparison

The 1-to-1 Facial Comparison project is designed to ensure that those travelers presenting U.S. passports for entry into the United States are the same individuals to whom these passports were legally issued. This project is targeted at potential vulnerabilities from the potential “imposter” threat—a person who presents a legitimate document for admission, but one that does not belong to that person. This program uses biometrics, which will identify an imposter, to detect and counteract that threat.

Prior to the collection of biometrics on in-scope foreign nationals, fraudulent use of nonimmigrant visa and resident alien travel documents was a fairly common occurrence. In 2004, CBP began biometric verification in the form of fingerprint capture and comparison on most foreign nationals at U.S. ports of entry upon arrival. This change enabled CBP to perform biometric verification to provide assurance that the individual presenting the travel document was the document’s authorized owner. This process has reduced significantly the likelihood that an individual would be able to use another person’s identity to fraudulently gain admittance to the United States.

A solution for persons presenting a U.S. passport was still needed because U.S. citizens are not subject to fingerprint capture at a port of entry. Accordingly, the 1-to-1 Facial Comparison project was developed. This project began in March 2015 at Dulles International Airport. The technology compares a photo taken of the U.S. citizen seeking admission to the photo stored on the ePassport chip. CBP officers supplemented standard screening methods of U.S. citizens seeking to enter the United States with the results of this comparison to



assess whether the person applying for entry into the United States was the same person to whom the U.S. passport was legally issued.¹³

CBP has analyzed the human factors and technical findings of the 1-to-1 Facial Comparison project. Based on this analysis, CBP has made appropriate adjustments and deployed 1-to-1 facial comparison technology at John F. Kennedy International Airport in New York in January 2016 for screening U.S. citizens and expanded the facial comparison technology to also check for imposter fraud by first-time Visa Waiver Program applicants.

B. Biometric Exit Mobile

The Biometric Exit Mobile project evaluates the feasibility of recording the departure of foreign travelers with a handheld biometric device. Building upon existing investments in CBP mobile applications, Biometric Exit Mobile integrates existing outbound enforcement operations with biometric exit data collected at the departure gate. The mobile unit collects fingerprint biometrics and assists CBP officers by conducting real-time law enforcement queries. These operations are performed during existing outbound inspections of travelers departing the United States.



In 2015, Biometric Exit Mobile was implemented on a trial basis at the top 10 gateway airports with the highest international passenger volume.

Throughout the duration of the project, CBP is collecting biometric exit records from a limited number of randomly selected foreign nationals departing the United States and comparing those biometrics to the biometrics collected when the same person entered the United States.¹⁴ This comparison will be used to develop a statistically valid baseline and will help to inform the future plans of biometric exit in the air environment.

CBP is evaluating the results of Biometric Exit Mobile to determine if the real-time data that the mobile device provides to the officer in the field enhances CBP's enforcement

¹³ See: <http://www.dhs.gov/publication/facial-recognition-air-entry-pilot> , <http://www.cbsnews.com/news/facial-recognition-pilot-program-dulles-airport-customs-border-immigration/>

¹⁴ See: <http://www.dhs.gov/publication/biometric-exit-mobile-air-test>, Test To Collect Biometric Information at Up to Ten U.S. Airports ("BE-Mobile Air Test"), 80 FR 44983 (July 28, 2015), available at <https://www.federalregister.gov/articles/2015/07/28/2015-18418/test-to-collect-biometric-information-at-up-to-ten-us-airports-be-mobile-air-test>

posture.¹⁵ Statistical sampling also will assist CBP in measuring security risks and gaps with regard to existing biographic exit processes. CBP will extrapolate the findings further to the larger population while minimizing the impact to existing airport operations.

The benefits of Biometric Exit Mobile include:

- Providing a real-time, biometric verification tool for law enforcement teams on outbound inspection;
- Ensuring the departure of a foreign national traveler from the United States through biometric verification;
- Enhancing outbound enforcement operations;
- Ensuring the accuracy of airline manifests provided to CBP by airline carriers; and
- Measuring differences between the existing biographic program and biometric exit.

C. Pedestrian Entry/Exit

In late 2015, CBP deployed an entry capability for the collection of face and iris images for in-scope travelers at the Otay Mesa land border port. The exit capability, deployed in February 2016, tests the feasibility of collecting biometrics to accurately identify a traveler's identity in an outdoor land environment.

The project leverages existing investments in radio frequency identification capability to capture biographic data on travelers entering and departing the United States. The project will determine the impact of implementing an exit process on port operations. Additionally, this technology will identify persons of law enforcement interest departing the United States.

The benefits of pedestrian entry/exit include:

- Determining the existing feasibility of “on-the-move” biometric collection in an operational environment;
- Determining how biometrics can enhance the closeout of entry records, or matching exit to entry records more thoroughly;



¹⁵ Early results of the program indicate that biometrics do enhance CBP's enforcement capabilities in the air departure environment, although a formal evaluation is forthcoming. The program will help to assist in identifying the CBP officers necessary to maintain a nationwide biometric exit program (see Section V below).

- Ensuring the departure of a foreign national traveler from the United States through biometric verification;
- Enhancing outbound enforcement operations; and,
- Measuring differences or determining what enforcement challenges are departing the Southwestern land border, and the volume of these enforcement challenges.

V. Transforming Entry/Exit Processes

The Secretary of Homeland Security has directed CBP to redouble its efforts to achieve a biometric entry/exit system, and to begin implementing biometric exit starting at the highest volume airports in 2018. CBP currently maintains an entry/exit system for foreign nationals based on biographic data. Further, CBP collects biometric data on almost all foreign nationals when entering the United States, regardless of port of entry. Through a variety of programmatic activities, CBP is now undertaking to develop and implement the remaining piece of the comprehensive entry/exit system by integrating biometrics into the existing biographic entry/exit system.

In December 2015, the *FY 2016 Consolidated Appropriations Act* authorized up to \$1 billion over a period of up to 10 years for the implementation of a biometric exit program across all modes of travel. This section describes the programmatic activities that CBP has taken prior to receiving this funding allocation, how the test results will inform the program's next steps, the use of the anticipated \$1 billion in funding, and CBP's strategy and plan for implementing a biometric entry/exit system. Although the implementation plan contained in this report is preliminary, CBP will continue to refine and build out this plan and keep the Committees informed of its progress.

A. CBP Projects and Activities through 2015

As described above, CBP has deployed three separate biometric entry/exit tests in the last year. Each project will provide CBP with a variety of lessons learned in terms of identifying how biometrics can be deployed more extensively at ports of entry across all modes of travel. Overall, CBP will gain insights into the existing biographic exit system, the feasibility of using a variety of new and emerging biometric technologies, the operational impacts, and the staffing resources that will be necessary to support increased law enforcement requirements that will accrue from increased outbound activity.

In addition, CBP worked closely with the DHS Science and Technology (S&T) Directorate to develop and test a biometric air exit capability, forming the Air Entry-Exit Reengineering program. The purpose of the Air Entry-Exit Reengineering program is to analyze, develop, test, pilot, and evaluate integrated approaches to biometrically confirm the departure of in-scope foreign nationals at airports. The Air Entry-Exit Reengineering program also will identify more efficient traveler facilitation processes using biometric technologies to screen travelers entering and exiting the United States.

There has been significant progress on the Air Entry-Exit Reengineering program since 2013. On June 26, 2014, DHS S&T opened the Air Entry-Exit Reengineering program test facility in Landover, Maryland. To date, the program has completed four rounds of tests at the Maryland Test Facility. Each round evaluated multiple entry and biometric

air exit concepts of operation to examine changes to, and effects upon, people, process, and technology at air ports of entry as travelers enter and exit the country. Test results are being used to identify those concepts and biometric technologies that perform best under controlled test conditions prior to field testing in a major international airport. More than 1,200 volunteers from more than 40 countries participated in testing at the Maryland Test Facility.

The testing through the Air Entry-Exit Reengineering program is now complete and the results are being analyzed. Both the existing experiments and the Air Entry-Exit Reengineering program will better inform CBP of the quantitative and qualitative benefits, costs, performance, and risks of proposed biometric and nonbiometric technology capability enhancements.

In addition to efforts discussed earlier with Canada and Mexico, CBP has been working closely with government partners, the air industry, foreign governments, and solution providers to collaborate and understand the challenges and impacts of current operations and proposed changes on its broad range of stakeholders. Gaining information from these stakeholders, including airlines, airports, and foreign governments, will provide CBP with additional information on the best methods of deploying a biometric exit solution for air ports of entry.

B. Implementation Strategy

As noted above, the CBP Entry/Exit Transformation Strategy seeks to identify and implement transformative solutions for the deployment of the biometric entry/exit system. Such solutions would have minimal impact on trade and travel, be seamlessly integrated into existing processes, and provide a more cost-effective approach to the challenge of biometric exit. This Strategy represents a new way of thinking about biometric exit and presents significant opportunity for increasing biometric exit cost-efficiency when compared to prior approaches.

The current set of biometric entry/exit tests are providing the evidence needed for CBP to make informed decisions that applies a disciplined approach to a major acquisition or a series of acquisitions, including conducting an analysis of alternatives and developing a rigorous lifecycle cost estimate.

In December 2015, Congress authorized up to \$1 billion in funding over a period up to 10 years to support a biometric exit system. These funds will enable to take the next major step in the development of a biometric entry/exit system. As described above, CBP is developing a solid foundation through the existing pilots and the lessons learned from the Air Entry-Exit Reengineering program. However, significant work remains to be done even prior to deployment, in terms of upgrading CBP infrastructure, identifying resources necessary for full-scale operational support, addressing challenges identified by the

current testing, and making final decisions about the most reliable and cost-effective enterprise biometric solutions.

CBP has developed an implementation strategy to allocate the funding provided in support of a biometric entry/exit system. It is important to note that implementing biometric exit requires much more than biometric devices alone. Merely placing biometric devices in an air or land port environment, with no other supporting effort or work, is unlikely to advance an overall biometric arrival/departure system. It will be critical to establish the necessary infrastructure and support operations, which will include necessary ongoing staffing, to support the programmatic efforts. As described further in Section C, the funding approach authorized by Congress also poses certain challenges to the execution of this implementation strategy.

The implementation strategy described below outlines the three areas of work CBP will pursue with the available funds: Upgrade CBP Infrastructure, Establish Operational Support, and Implement Solutions.

1. Upgrade CBP Infrastructure

CBP must be able to collect and use biometric modalities other than fingerprints to account for the variety of environments in which biometric information would need to be collected.¹⁶ Upgrading its infrastructure is necessary for CBP to successfully handle the larger number of biometric collections and transactions that a biometric entry/exit system would require. Networks, storage, primary applications, and facilities all will need to be assessed and upgraded to support the implementation of transformed biometric entry/exit system. To begin collecting multimodal biometrics, CBP will be required to upgrade outdated devices to support facial recognition and iris images.

This work also will modernize the information technology platforms that CBP operates on every day. Currently, CBP anticipates these actions will begin development once the new funding is available at the beginning of FY 2017.

Activities in this area of work will include:

- Upgrading networks to support additional bandwidth required for biometric exit;
- Adding storage to support new exit transactions;
- Upgrading primary applications to support collection and transmission of multimodal biometrics (finger, face, iris);

¹⁶ Currently, existing biometric collection processes take more than 20 percent of the process time at primary inspection. Using additional multimodal biometrics will provide better facilitation, operational flexibility, and faster collection of biometrics and verification of identity, and will avoid adding significant time to the existing departure process.

- Procuring and installing new multimodal biometric devices for primary operations; and
- Upgrading enterprise services to support multimodal biometrics and exit transactions.

2. Establish Operational Support

CBP will implement its solutions in accordance with sound program management principles and requirements for an effort of this size and complexity. It will document program requirements and concept of operations, adhere to acquisition program requirements as defined by the Department, and develop any planning and programmatic documents required to establish entry/exit as an acquisition program of record. This is a necessary step to establish the program management rigor to support a program of this size as well as to develop robust life-cycle cost estimates and realistic implementation plans. In doing so, CBP will coordinate closely with the DHS Joint Requirements Council and the enterprise-wide community that uses biometrics.

In addition, CBP will need to create operations in order to ensure that enforcement, targeting, and analysis needs are met. As CBP develops and implements a biometric entry/exit system, those capabilities will be complemented with targeting and analysis support such as document validation, pre-verify analysis, and biographic data analysis to ensure accuracy. Currently, CBP is planning for these activities, and anticipates that these actions will accelerate once new funding is available at the beginning of FY 2017.

Activities in this area of work will include:

- Expanding targeting, analysis and traveler adjudication support for outbound operations;
- Hiring officer staff to support outbound enforcement operations and exception processing resulting from exit operations;¹⁷
- Implementing outbound pre-verify analysis to adjudicate outbound biometric watch list matches; and
- Implementing outbound document validations to increase accuracy of Advance Passenger Information System data.

3. Implement Biometric Entry/Exit Solutions

¹⁷ CBP is currently developing estimates of the number of officers required, which will be based on an analysis of the Biometric Exit Mobile program, (see subsection IV.B, above). Beginning in FY 2017, CBP will use the funds authorized by Congress in the *FY 2016 Consolidated Appropriations Act* to implement a biometric entry and exit data system for the salaries of CBP employees hired to carry out this effort.

While CBP infrastructure upgrades and the implementation of operational support are ongoing, CBP will continue to pilot biometric air and land exit field trials in order to identify reliable and cost-effective concepts that can be deployed nationwide and across all modes of travel. Following those steps, including a thorough analysis of alternatives, CBP will begin implementing a biometric exit system at the highest volume airports in 2018, focusing initially on high-risk flight departures. Activities in this area of work will include:

- Completing biometric air exit field trials;
- Deploying biometric exit at top gateway airports;
- Advancing data exchange with foreign partners;
- Engaging with airline and travel partners;
- Continuing research and development of vehicle-based solutions.

C. Preliminary Implementation Challenges

As noted above, significant work remains to be done in order to execute the strategy to implement a biometric exit system, including upgrading CBP infrastructure, addressing challenges identified by the current testing, and identifying the most reliable and cost-effective biometric solutions. In addition, the funding approach authorized through the *FY 2016 Consolidated Appropriations Act*, and on which CBP's preliminary implementation plan for biometric exit is based, poses certain implementation challenges that will need to be addressed.

Based on the existing appropriations legislation, DHS has estimated that the surcharges designed to fund a biometric exit program will amount to approximately \$78 million for the first year (i.e. available October 1, 2016) and then \$115 million per year thereafter, until the overall cap of \$1 billion is reached. The funding will not expire within any particular fiscal year. Challenges associated with this funding approach for the deployment of a biometric exit program include:

- Funding Schedule: Biometric exit equipment and infrastructure upgrades necessitate major capital investment, which is best executed with a lump sum of “upfront” funding to support a full-scale deployment. By doing so, economies of scale can be maximized and capabilities do not need to be implemented in a piecemeal fashion. The estimated incremental funding of approximately \$115 million per year may create planning challenges and inefficiencies.
- Funding Stream: Once the \$1 billion cap is reached, no additional funds will be available for biometric exit through this mechanism. This is a challenge because both staffing and operations and maintenance costs will be ongoing throughout the life of the program. At the point the cap is reached, currently estimated to be in

2024, CBP would need to identify other sources of funding for the costs previously supported by the fee surcharges.

- Funding Scope: The funds provided will enable CBP to take the next major step in development of a biometric entry/exit system at the highest volume airports. Full nationwide deployment of a comprehensive entry-exit system at additional airports and ports of entry for other modes of travel will require additional resources not available from the authorized surcharges.

DHS and CBP will continue to work with Congress to address these funding challenges, and do not believe any of these are an insurmountable obstacle to initiating the deployment of a biometric exit system.

VI. Conclusion

CBP has made significant progress in advancing the existing entry/exit system, which currently relies primarily on biographic capabilities, throughout all operational environments. CBP will continue to further these biographic capabilities while also redoubling efforts to develop and deploy a biometric entry/exit system.

To that end, CBP's immediate efforts in support of the larger entry/exit strategy must improve data collection upon departure, improve the ability to match entry and exit records, and develop technology and procedures to take action against overstays while expediting travel. CBP is targeting specific operations to test the application of new biometric technologies to enhance both the entry process and to identify biometric exit solutions that can be deployed nationwide. The culmination of these efforts and this strategy will be an operationally feasible, economically supportive, and cost-effective comprehensive biographic and biometric entry/exit system. CBP will continue to keep Congress apprised of its progress.

VII. Appendix - Abbreviations

Abbreviation	Definition
CBP	U.S. Customs and Border Protection
DHS	Department of Homeland Security
ICE	U.S. Immigration and Customs Enforcement
S&T	Science and Technology Directorate
TSA	Transportation Security Administration
USCIS	United States Citizenship and Immigration Services
US-VISIT	United States Visitor and Immigrant Status Indicator Technology