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March 10, 2015

The Honorable Charles E. Schumer  
Chairman  
Joint Committee on Printing  
United States Senate

The Honorable Shelley Moore Capito  
Chairman  
The Honorable Brian Schatz  
Ranking Member  
Subcommittee on Appropriations, Legislative Branch  
Committee on Appropriations  
United States Senate

The Honorable Tom Graves  
Chairman  
The Honorable Debbie Wasserman Schultz  
Ranking Member  
Subcommittee on Appropriations, Legislative Branch  
Committee on Appropriations  
House of Representatives

**Government Publishing Office: Production of Secure Credentials for the Department of State and U.S. Customs and Border Protection**

Federal secure credentials include a variety of documents such as personal identification (ID) cards that contain enhanced security features to prevent counterfeiting or other illicit tampering. Such credentials may also have a memory chip with radio frequency identification (RFID) that can store and transmit information to an external card reader. The Government Publishing Office (GPO), formerly the Government Printing Office,<sup>1</sup> an agency within the legislative branch, is the federal government’s primary centralized resource for gathering, cataloging, producing, providing, authenticating, and preserving published U.S. government information in all its forms.<sup>2</sup> As such, GPO produces and distributes information products and services for all three branches of the federal government. In response to increasing demand by federal agencies for secure credentials that incorporate smart card technology,<sup>3</sup> GPO requested, and the Joint

<sup>1</sup>Pursuant to the Consolidated and Further Continuing Appropriations Act, 2015, the Government Printing Office has been redesignated the Government Publishing Office and the title of Public Printer has been changed to Director of the Government Publishing Office. See Pub. L. No. 113-235, Div. H, § 1301, 128 Stat. 2130 (2014).

<sup>2</sup>See 44 U.S.C. § 501 (providing, in general and with some exception, that “[a]ll printing, binding, and blank-book work for Congress, the Executive Office, the Judiciary, other than the Supreme Court of the United States, and every executive department, independent office and establishment of the Government, shall be done at [GPO]”); § 501 note (providing, among other things, a prohibition on the use of appropriated funds for the procurement of any printing related to the production of government publications unless by or through GPO).

<sup>3</sup>According to the Smart Card Alliance, an association that works to stimulate the understanding and use of smart cards, a smart card is a device that includes an embedded integrated circuit chip that can be either a secure microcontroller or equivalent intelligence with internal memory or a memory chip alone. The card connects to a reader

Committee on Printing approved, authority in December 2007 to build, equip, and staff a facility to design and produce secure card credentials (secure credentials) for federal agencies and entities.<sup>4</sup> GPO subsequently began production of secure credentials in fiscal year 2009 for enrollees of the Department of Homeland Security's (DHS) U.S. Customs and Border Protection (CBP) trusted traveler programs (TTP) as well as for Puerto Rican beneficiaries of the Department of Health and Human Services' Medicare program.<sup>5</sup> Since then, GPO has produced over 5 million secure credentials across 14 different secure card credential product lines.<sup>6</sup> One of these product lines is the Border Crossing Card (BCC), which GPO began producing for the Department of State (State) in 2014.

You asked us to review the activities and processes related to GPO's production of secure credentials. In addition, Senate Report 113-196, which accompanies the fiscal year 2015 legislative branch appropriations bill, mandates GAO to review GPO's secure credentialing production activities.<sup>7</sup> This report addresses the following questions:

(1) What factors did State and CBP consider in selecting GPO to obtain their secure credentials?

(2) How does GPO produce and ensure the quality of its secure credentials?

To determine what factors State and CBP considered in selecting GPO to obtain secure credentials, we reviewed applicable sections of Title 44 of the U.S. Code, the authority under which GPO produces secure credentials, and the Federal Acquisition Regulation (FAR) to

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with direct physical contact or with a remote contactless radio frequency interface. With an embedded microcontroller, smart cards have the unique ability to store large amounts of data, carry out their own on-card functions (e.g., encryption and mutual authentication), and interact intelligently with a smart card reader.

<sup>4</sup>The Joint Committee on Printing, which is composed of the chairman and four members of the Committee on Rules and Administration of the Senate and the chairman and four members of the Committee on House Administration of the House of Representatives, and for which chairmanship alternates between the Senate and House of Representatives with each Congress, oversees the operation of GPO. See 44 U.S.C. § 101; § 101 note. According to GPO officials, GPO must receive authorization from the Joint Committee in writing before making expenditures, not otherwise approved, that exceed \$50,000, and submits an annual spending plan each year for the approval by the Joint Committee of these expenditures. See 44 U.S.C. § 309 (establishing the authority under which GPO funds operations, maintenance, and other activities). The Joint Committee must also approve any subsequent expenditure over \$50,000. Since 2007, every annual spending plan by GPO has included expenditures for the production of secure credentials and has been approved by the Joint Committee.

<sup>5</sup>CBP's trusted traveler programs are designed to allow for expedited cross-border travel for preapproved, low-risk travelers and cargo. CBP has four trusted traveler programs. They are predicated on the vetting of travelers and eligible commercial carriers who have voluntarily applied for membership, paid a fee, and provided personal data to CBP. Travelers and commercial carriers who are granted trusted traveler status are considered lower risk than other travelers because of the vetting CBP conducts both when the travelers apply for program participation and after they become members. While TTP cards contain a memory chip and RFID to store and transmit information to external readers; they are not considered smart cards, as they do not have a processor to manipulate the information on the card.

<sup>6</sup>Since 1926, GPO has also been the sole producer of blank passport books for the Department of State. Recent versions of the passport include components such as embedded microchips or other security features that are similar to those used in other secure credentials such as smart cards. We did not include passports in our scope because of differences in the overall design and manufacture of passport books as compared with the design and manufacture of secure card credentials.

<sup>7</sup>See S. Rep. No. 113-196, at 44 (June 19, 2014) (accompanying H.R. 4487, 113th Cong. (2d Sess. 2014), which was enacted as Division H of Public Law 113-235).

understand and describe the authorities associated with federal agencies and entities obtaining printing services from GPO and interviewed GPO officials involved in the management and oversight of the production of secure credentials. We focused our review on the production of two GPO secure credential product lines—BCCs for State and TTP cards for CBP.<sup>8</sup> For both product lines, we reviewed documents provided by GPO, State, and CBP, such as requirements and agreements for card production, requisition forms, and sourcing information. We also interviewed State and CBP officials responsible for the procurement of secure credentials about the processes used and factors considered in selecting GPO to produce the credentials. For the BCC, we obtained and reviewed information from State related to its procurement and analysis of costs for obtaining BCCs. We obtained and reviewed data from CBP on the observed RFID-enabled document performance (read rates) at ports of entry.<sup>9</sup> To assess the reliability of read rate data, we reviewed documentation on the collection and reporting of read rate data at ports of entry and interviewed CBP officials about their policies and procedures for collecting and tracking read rates. We determined that these data were sufficiently reliable for the purposes of reporting RFID-enabled travel document read rates at ports of entry. To obtain the perspectives of industry stakeholders on current federal practices to procure secure credentials, we interviewed officials from the Smart Card Alliance—an association representing a variety of industry suppliers, integrators, and end user organizations, including GPO—and MorphoTrust, a private contractor involved in the production of secure credentials for federal agencies and producer of the previous version of the BCC for State.

To determine how GPO produces secure credentials, we reviewed applicable provisions of the Materials Management Acquisition Regulation (MMAR) and BCC and TTP card production guides, and interviewed GPO officials about their production processes.<sup>10</sup> To determine how GPO ensures the quality of its secure credentials, we reviewed BCC and TTP card production requirements and performance studies conducted by GPO, CBP, and State. In addition, we interviewed CBP, State, and GPO officials about the performance of BCCs and TTP cards and the quality control procedures used in card production and issuance. In addition to reviewing data from CBP on read rates at ports of entry, we reviewed the tests of durability and functionality conducted by GPO and others. Finally, we interviewed officials with U.S. Immigration and Customs Enforcement's (ICE) Homeland Security Investigations Forensic Laboratory (HSI-FL) and CBP's Fraudulent Document Analysis Unit about their analyses of GPO's TTP and BCC cards, including the extent to which the cards are resistant to counterfeiting or other types of tampering.

We conducted this performance audit from August 2014 to March 2015 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our

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<sup>8</sup>The BCC and TTP cards represent the two highest-volume secure credential product lines produced by GPO since it started production of secure credentials in fiscal year 2009. Collectively, the two product lines represent almost 75 percent of the total number of secure credentials produced by GPO.

<sup>9</sup>Ports of entry are the facilities and locations that provide for the controlled entry into or departure from the United States for persons and materials. Specifically, a port of entry is any officially designated location (seaport, airport, or land border location) where DHS officers or employees are assigned to clear passengers and merchandise, collect duties, and enforce customs laws. A single land port of entry may be composed of one or more crossings.

<sup>10</sup>The Materials Management Acquisition Regulation provides the policies and procedures GPO follows to conduct its procurements and, similar to the Federal Acquisition Regulation (FAR), promotes the use of competitive procedures to meet in awarding contracts. GPO Publication 805.33 (May 15, 2003).

findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

## Results in Brief

State and CBP considered a variety of factors in selecting GPO to obtain their secure credentials. Specifically, State and CBP officials concluded after consideration of factors such as interagency coordination and collaboration and pricing, among others, that GPO was best able to meet their production needs. State officials also noted other factors led them to choose GPO, such as GPO's experience producing high-performing TTP secure credential cards, GPO's backup production facilities, and the relationship State already had with GPO for the production of passport books. For CBP officials, other factors that contributed to their choosing GPO included GPO's experience producing passport books for State and its secure supply chain. Pursuant to Title 44, federal agencies obtain products and services, such as secure credential production, from GPO by submitting a Standard Form One (SF-1)—Printing and Binding Requisition to the Public Printer of the United States (i.e., a requisition). In the cases of the BCC and TTP cards State and CBP also signed memorandums of understanding with GPO to establish the production requirements for the secure credentials. Production of the credentials is initiated through the submission of a requisition by State and CBP to GPO when needed.

GPO produces secure credentials by integrating and assembling materials and components procured from the private sector and uses a variety of processes, both internal and external, to test and ensure the quality of its secure credentials. According to GPO officials, GPO procures from private sector entities all of the raw materials and components used to construct secure credentials, such as polymers, inks, and RFID chips. After GPO procures the various components from the private sector, its production of the credentials is a multistep process involving secure printing, assembly, validation, personalization or serialization, and delivery of the credentials. To ensure the quality of the secure credentials, GPO carries out a variety of quality control checks and processes, voluntarily complies with international standards for manufacturing quality, and conducts testing of prototype cards. Externally, GPO also works with State and DHS on an ongoing basis to monitor the performance of issued credentials, contracts with private sector laboratories to test prototype cards, and has sought feedback from a DHS lab on the extent to which the credentials are resistant to fraudulent use.

## Background

GPO produces secure credentials in accordance with its mandate under Title 44 of the U.S. Code to fulfill the printing needs of the federal government. According to GPO officials, the production of secure credentials includes a variety of products and services involving the processes of composition, presswork, and binding, which fall within the statutory definition of printing.<sup>11</sup> As the production of secure credentials involves printing processes, GPO officials stated that GPO is authorized to produce secure credentials when requested by a federal agency and will do so upon the submission of an SF-1 certifying that the products requested are authorized by law, necessary to the public business, and backed by the necessary funding.<sup>12</sup>

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<sup>11</sup>As defined in statute, the term "printing" includes the processes of composition, platemaking, presswork, duplicating, silk screen processes, binding, microform, and the end items of such processes. See 44 U.S.C. § 501 note. For example, according to GPO officials, the presswork used in the production of the credentials' printed layers is done by press craftsmen using a variety of existing printing presses, and the finishing steps are performed by bindery craftsmen and are similar to the activities found with bookmaking.

<sup>12</sup>See 44 U.S.C. § 1102.

GPO officials also stated that while it is presently capable of fulfilling all the requisitions it receives for the production of secure credentials, it does not have the capacity to meet the entirety of the federal government's demand for secure credentials, either through direct production in its facilities or by contracting with outside entities to fulfill a requisition.<sup>13</sup> In recognition of its resource constraints and consistent with Title 44, GPO officials explained that GPO endeavors to produce secure credentials for those federal government entities that request such services.<sup>14</sup>

According to GPO officials, GPO does not actively compete with other producers or suppliers of secure credentials through agency procurement processes, such as by responding to requests for proposals. Rather, GPO responds to agencies that specifically request more information about GPO services and products or that submit a requisition for services or products.<sup>15</sup> GPO officials noted that because of recognized constraints on its production capacity as well as on its ability to effectively manage its procurement processes, GPO does not respond to or otherwise engage any agency with requests for proposal to obtain secure credentials and generally does not respond to requests for information. The officials noted that GPO will, however, respond to requests for information submitted by an agency directly to GPO. GPO officials further explained that while they do not actively solicit business for secure credential production, they are transparent as to having this capability and have publicly acknowledged their role in supplying the federal government with secure credentials through its website and congressional testimonies, among other means.

According to GPO officials, GPO's Security and Intelligent Documents Division (SID), which is responsible for producing secure credentials, is one of eight revenue business units within GPO and represents about 32 percent of GPO's consolidated revenues. Specifically, passport revenue accounts for 28 percent of GPO's revenues, and 4 percent is derived from secure credentials. Within SID, there are 21 managers, 160 production and design staff, plus 1 staff member responsible for coordinating federal agency inquiries into GPO's production capabilities for potential secure credential work.

The secure credential formats of the BCCs and TTP cards were developed by State and CBP, respectively, as part of the Western Hemisphere Travel Initiative (WHTI), a joint State and DHS plan to implement the statutory mandates of the Intelligence Reform and Terrorism Prevention

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<sup>13</sup>If GPO is not able or equipped to fulfill a requisition in its printing facilities, it may enter into contracts to fulfill the requisition. See 44 U.S.C. § 502.

<sup>14</sup>See 44 U.S.C. § 504; see also FAR, 48 C.F.R. § 8.802 (describing the circumstances pursuant to which an agency must use GPO for its government printing needs). There remains a long-standing dispute between the executive branch and Congress as to whether federal agencies may utilize an entity other than GPO to fulfill their printing needs without regard for the requirements of Title 44. GAO has, on numerous occasions, concluded that federal agencies must follow the requirements set forth in Title 44 in order to properly obligate and expend their appropriated funds for printing services. See, e.g., B-300192 (Nov. 13, 2002) (concluding, pursuant to 44 U.S.C. § 501 and § 501 note, that no appropriated funds may be used to pay for the printing of the President's Budget other than through GPO). For the examples relied upon in this review, both State and CBP have submitted requisitions to GPO for the production of BCCs and TTP cards respectively, and as such, there is no present controversy regarding the agencies' decisions as to where they are obtaining these secure credentials.

<sup>15</sup>According to GPO officials, GPO has one person dedicated to responding to inquiries from other federal agencies about obtaining secure credentials from GPO and does not initiate contacts with other federal agencies to solicit work.

Act of 2004 (IRTPA).<sup>16</sup> The goal of WHTI is to facilitate entry for U.S. citizens and foreign visitors while strengthening U.S. border security by providing standardized documentation that enables CBP to quickly and reliably identify a traveler. WHTI-compliant documents include valid U.S. passports, passport cards, TTP cards, and BCCs, among others. A variety of WHTI-compliant documents, including TTP cards and BCCs, employ RFID technology to facilitate the inspection process by CBP officers at ports of entry. A unique number is embedded in an RFID chip within the travel document, which can be read wirelessly by an RFID reader at a port of entry. The RFID system automatically looks up a traveler's information from CBP's system for conducting border inspections to assist the CBP officer in the authentication of the identity of the traveler and to facilitate the land border primary inspection process.

The BCC is a combined B-1 and B-2 nonimmigrant visitor's visa issued by State that allows admission for citizens and residents of Mexico who want to enter the United States temporarily for business (visa category B-1) or tourism, pleasure, or visiting (visa category B-2).<sup>17</sup> TTP cards are issued by CBP for each of the four programs that are used in a process of expediting the travel of low-risk passengers and screened shipments across the border.<sup>18</sup> These programs include the following:

- *Secure Electronic Network for Travelers Rapid Inspection (SENTRI)* provides expedited processing for preapproved, low-risk travelers at southern ports of entry by CBP and access to dedicated processing lanes into the United States.
- *NEXUS*, a binational TTP operated jointly by the United States and Canada, allows prescreened travelers (citizens or legal permanent residents of the United States or Canada) expedited processing by U.S. and Canadian officials in air, land, or sea environments or at preclearance locations.<sup>19</sup>
- *Global Entry* allows expedited clearance for preapproved, low-risk travelers upon arrival in the United States. Participants (including eligible U.S. citizens; lawful permanent U.S. residents; and eligible citizens of the Netherlands, Germany, Qatar, South Korea, and the United Kingdom, as well as Mexican nationals) may enter the United States by utilizing automated kiosks located at select airports.<sup>20</sup>

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<sup>16</sup>See Intelligence Reform and Terrorism Prevention Act of 2004, Pub. L. No. 108-458, § 7209, 118 Stat. 3638, 3823, as amended; 8 U.S.C. § 1185 note.

<sup>17</sup>The BCC is valid for up to 10 years. Mexican nationals entering the United States using a BCC may travel within 25 miles of the U.S. border (55 miles if entering through New Mexico and 75 miles if entering through certain ports of entry in Arizona) for a period not to exceed 30 days.

<sup>18</sup>TTP cards are valid for 5 years.

<sup>19</sup>Through preclearance, the same immigration, customs, and agriculture inspections of international air passengers performed on arrival in the United States can be completed before departure at foreign airports instead. Currently, preclearance operations take place at 16 foreign airports in six countries. CBP also staffs a facility for passenger/vehicle ferry traffic to the United States in Victoria, Canada.

<sup>20</sup>Global Entry cards are issued to U.S. citizens, U.S. lawful permanent residents, and Mexican national Global Entry members (not already enrolled in SENTRI or NEXUS) for use at the NEXUS and SENTRI lanes when entering the United States.

- *Free and Secure Trade (FAST)* allows expedited processing for eligible commercial carriers who have completed background checks and fulfill certain eligibility requirements.

In addition to producing BCCs for State and TTP cards for CBP, GPO produces a variety of secure credentials for federal agencies, such as Homeland Security Presidential Directive 12 (HSPD-12)--compliant cards for DHS, driver's licenses for foreign diplomats in the United States, identification cards for United States diplomats, and the Transportation Worker Identification Credential, among other credentials.<sup>21</sup>

### **State and CBP Considered a Variety of Factors in Selecting GPO to Obtain Secure Credentials**

According to State officials, State selected GPO in June 2013 for the production of BCCs after consideration of a variety of factors. BCC production was sourced to GPO after an internal State review determined that GPO was best able to meet State's requirements for the production of BCCs. For example, State concluded that GPO offered a superior credential overall and provided the best option for producing the credential relative to other alternatives. State reached this conclusion based on consideration of a variety of cost and noncost factors associated with GPO's production capabilities and experience. These factors included the following:

- *Experience producing WHTI-compliant credentials:* State officials stated that they considered GPO's experience producing high-performing WHTI-compliant TTP cards for CBP when deciding to source BCC production to GPO. Specifically, State officials noted that the RFID performance of GPO-produced TTP cards at ports of entry, as measured by their read rates, was generally better than that of other RFID-enabled travel documents used at ports of entry.<sup>22</sup> According to State officials, the performance of GPO-produced TTP cards was favorably viewed as an indication of GPO's ability to produce high-quality credentials.
- *Previous relationship for production of travel documents:* State officials stated they also considered their own favorable experience working with GPO for the production of blank passport books as a factor when deciding to source BCC production to GPO.
- *Interagency collaboration and coordination:* State officials noted that interagency coordination and collaboration work well with GPO, as GPO is itself a federal government agency. The officials stated that this proved to be beneficial during efforts to update the BCC, as State was able to directly involve other government agencies in the

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<sup>21</sup>In an effort to increase the security of federal facilities and information systems where there is potential for terrorist attacks, the President issued HSPD-12 in August 2004 and directed the establishment of a mandatory, government-wide standard for secure and reliable forms of identification for federal government employees and contractor personnel who access government-controlled facilities and information systems.

<sup>22</sup>"Read rates" indicate the percentage of RFID credentials that successfully transmit the information encoded in them to an external reader system. Consequently, a higher read rate indicates higher performance. According to CBP officials, RFID performance at the entrance of vehicle lanes, or "pre-primary zone" (PPZ), aids CBP officers during the primary inspection process by automating the retrieval of a traveler's information. CBP officials stated that RFID performance in the PPZ expedites the inspection process, including lanes dedicated to specific trusted traveler programs (such as NEXUS and SENTRI), which are dedicated travel lanes at CBP's land ports of entry for travelers holding RFID-enabled documents. See enc. I for more information about read rates and CBP's RFID system.

update process, such as CBP and U.S. Immigration and Customs Enforcement's HSI-FL.

- *Redundant GPO production facilities:* State officials stated that the existence of backup and redundant GPO production facilities that could be used in the event of unexpected disruptions of the main production line was another favorable factor leading to GPO's selection.
- *Pricing:* State officials stated that they considered pricing as another factor when deciding to source the production of BCCs to GPO. Relative to the price per card for obtaining BCC under their previous procurement arrangement with a private sector contractor, State officials said that GPO offered a lower price per card. According to State's analysis, procurement of BCCs from GPO could result in a potential cost saving to State of over \$1 million during the first year of GPO production based on State's annual volume of need.<sup>23</sup>

According to CBP officials, they selected GPO for the production of TTP cards after consideration of a variety of factors. In implementing WHTI, CBP determined it needed to upgrade its existing TTP cards, which were initially produced internally by CBP, to improve security features and enhance their functionality to include RFID chips. Starting in fiscal year 2009, CBP sourced TTP card production to GPO after conducting an internal review that determined GPO was best able to meet CBP's requirements for card production. In support of CBP's selection of GPO, CBP officials cited the following factors related to GPO's capabilities and experience:

- *Experience producing travel documents:* CBP officials stated they considered GPO's experience producing passport books for State when deciding to source TTP card production to GPO.
- *Secure supply chain:* According to CBP officials, the fact that GPO already had a secure supply chain and processes in place to produce and distribute secure credentials was a favorable factor in selecting GPO. For example, CBP officials cited the steps GPO takes to ensure the security of its supply and production chains such as conducting routine security audits of its suppliers to validate their security practices and ensuring that GPO employees have the necessary security clearances.
- *Interagency collaboration and coordination:* CBP officials stated that because GPO is a government entity, the interagency collaboration and coordination involved in the development and oversight processes for TTP card production were simpler than collaboration and coordination with outside vendors.
- *Pricing:* CBP officials stated that the pricing offered by GPO for TTP card production was favorable compared to the option of upgrading their existing in-house production capabilities or sourcing production to a private sector entity; however, CBP officials stated that they did not formally solicit bids or information in support of that determination.

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<sup>23</sup>The estimate does not include imputed or indirect costs to the federal government.



After selecting GPO to produce their secure credentials, State and CBP formalized their selections by submitting requisitions to GPO for the secure credentials. State and CBP also signed memorandums of understanding (MOU) with GPO to supplement their requisitions and lay out the obligations and protocols to be followed by both parties in carrying out the production and shipment of BCC stock and TTP cards, respectively. State and CBP submit requisitions as needed to request additional card stock.

### **GPO Produced Secure Credentials for State and CBP Using Materials Procured from the Private Sector and Ensures the Quality of Its Secure Credentials through a Variety of Processes**

GPO collaborated with CBP and State in the design of their secure credentials for the TTP and BCC cards. According to GPO officials, the organization or agency purchasing the secure credential has final sign-off on its design, performance characteristics, security features, and durability and quality standards. GPO serves as the expert designer, adviser and consultant, integrator, printer and manufacturer, supply chain and inventory manager, and quality and fulfillment provider. For example, GPO worked in coordination with CBP to produce a card design for the TTP cards that would incorporate the desired security features. Although GPO took the lead in the design of the cards, such as the artwork and card construction, CBP officials described the process as very collaborative as GPO worked closely with CBP to ensure that CBP's requirements were met. For the BCC, although the card had been in circulation for several years, State wanted to update it to ensure it included the latest in security features. To update the BCC, GPO collaborated with State's Visa Office. CBP's Office of Information and Technology and ICE's HSI-FL were also involved and consulted during the redesign of the BCC, providing feedback on ways to improve the functionality of the card's RFID chip at ports of entry (POE) and enhance other security features to discourage its fraudulent use.

GPO officials said they also consult with a variety of external stakeholders and entities to test and evaluate the performance, durability, and security of its secure credentials. For example, CBP has tested the TTP cards in an environment that replicates processing lanes at POEs. According to CBP officials, CBP has also tested BCCs for RFID sensitivity and has conducted additional tests such as visual inspection, check digit computation, and RFID tag analysis, among others. In addition to tests by CBP, GPO has also had a variety of tests and evaluations of the performance and durability of its secure credentials independently conducted by outside private laboratories that specialize in testing secure credentials. For example, using contracted laboratories and in its internal laboratory, GPO conducted tests of prototype cards for durability when exposed to various stressors such as ultraviolet light, physical bending, and chemicals to simulate use and the environment the cards will be used in. Finally, ICE's HSI-FL is currently evaluating the security of the BCC for its potential to be counterfeited or altered. Findings from this analysis may help to identify if any potential vulnerabilities may exist with the current design of the BCC and identify enhancements for future cards.

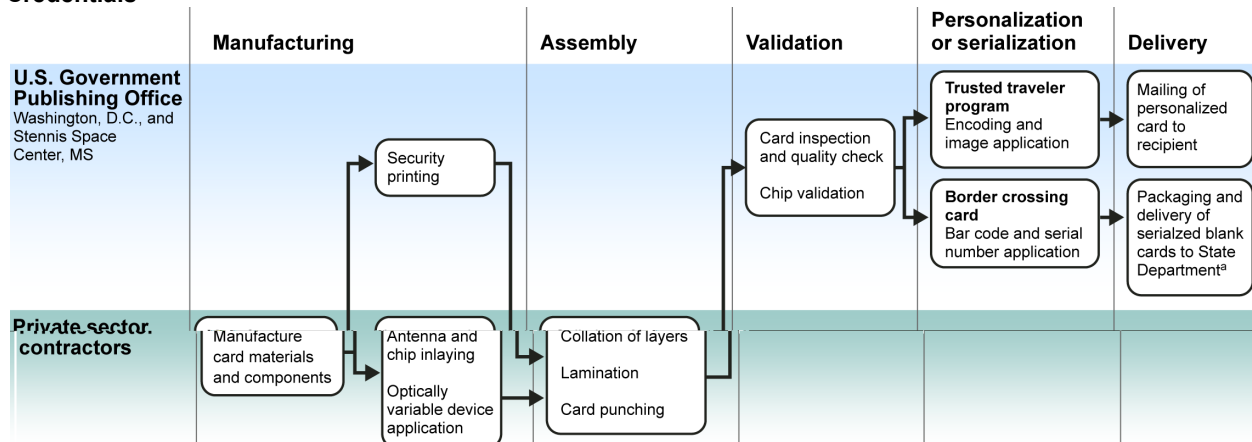
Once the secure credentials are designed, GPO's process to produce the credentials involves a number of steps and utilizes materials and components obtained from the private sector. According to GPO officials, all of the materials and components, such as polymers, inks, RFID chips, holograms, and other proprietary security features GPO uses in its production of secure credentials, are sourced from private sector entities in accordance with GPO's MMAR.<sup>24</sup>

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<sup>24</sup>The MMAR, like the FAR, prescribes policies and procedures to promote full and open competition in the acquisition process. See MMAR, subpt. 6.1. Also like the FAR, the MMAR prescribes the policies and procedures that must be followed when full and open competition is not feasible, such as when only one source of a supply is

Accordingly, GPO's role in the manufacturing process is that of a printer and card integrator of the various materials and components into a single card product.<sup>25</sup> In addition to procuring the materials and components from private sector entities, GPO also contracts with private sector entities to assist in the production of BCCs and TTP cards, such as the application of RFID chips and binding of plastic material (see fig. 1). GPO carries out the final steps of manufacturing BCC and TTP cards at its Washington, D.C., headquarters and has an additional production facility at the Stennis Space Center, in Mississippi.

**Figure 1: Government Publishing Office Production Process for Trusted Traveler Program and BCC Secure Credentials**



Source: GAO analysis of U.S. Government Publishing Office information. | GAO-15-326R

<sup>a</sup>The State Department personalizes its Border Crossing Cards (BCC) as a separate process that does not involve GPO.

To ensure the quality of the secure credentials it produces, GPO carries out a variety of internal and external quality control processes and activities. According to GPO officials, these quality control measures include the following:

- *Inspection of card materials and components:* Bulk raw material and component shipments received from private sector suppliers undergo quality inspection and testing by GPO's in-house testing lab before being used in production.
- *Visual inspections and camera scans of finished cards:* All TTP cards and BCCs are visually inspected during the production process to look for flaws. Automated cameras scan TTP cards and BCCs for defects prior to shipment to the end user or to State.
- *Adoption of international manufacturing standards:* GPO voluntarily adopted quality standards established by the International Organization for Standardization (ISO) for its secure credential production processes to ensure that GPO processes meet

available (i.e., sole source). See MMAR, subpt. 6.3. GPO officials explained that, consistent with the MMAR, GPO's policy is to promote and provide for full and open competition in soliciting offers and awarding contracts. See MMAR, §6.101. GPO officials explained that when circumstances require that GPO utilize means other than full and open competition, such as through the use of sole source contracts to procure materials, such as inks, that are available only from a limited number of sources, they provide the requisite justifications and act in accordance with applicable provisions of MMAR subpart 6.3.

<sup>25</sup>According to data provided by GPO, the materials and components procured by GPO from private sector entities to make the TTP and BCC cards represent 31 and 42 percent respectively of the total per card price charged by GPO to make the cards.

internationally recognized standards in production and quality systems and control.<sup>26</sup> GPO was first certified by a third-party firm as compliant with these standards in 2010 and undergoes annual audits of its processes to maintain this certification.

- *Site observation of production plants of material and component suppliers:* Under its Vendor Security Audit Program, GPO officials conduct regular visits and inspections of the production plants operated by private sector manufacturers of card materials and components. In a related joint effort, GPO partners with other agencies, such as State's Bureau of Diplomatic Security, to audit and inspect the processes, facilities, and employees of its private sector contractors and suppliers.

In addition to carrying out quality control processes and activities, GPO officials told us they work with customer agencies to monitor the quality and performance of GPO's cards. For example, GPO holds quarterly meetings with State to discuss the status of BCC production and any quality issues or concerns. A key performance indicator discussed at these meetings is the read rate of the cards at POEs, for which CBP provides monthly reports to GPO and State containing read rate data for TTP cards and BCCs at the POEs.<sup>27</sup> State, CBP, and GPO use the data to monitor trends in the cards' performance over time as well as how the performance compares against that of other secure credentials. Other metrics that are tracked and discussed include card failure rates, number of returned cards, and waste. According to GPO officials, any quality or performance issues are documented and researched by GPO to identify potential solutions to resolve the issues.

### **Agency Comments**

We provided a draft of this product to DHS, State, and GPO for comment. In its written comments, reproduced in enclosure II, GPO noted that since 2007, the Joint Committee on Printing has consistently approved expenditures for GPO's secure credential program, including the 2012 approval for the establishment of a continuity-of -operations capability. GPO also provided technical comments, as did DHS and State, that were incorporated, as appropriate.

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We are sending copies of this report to the Secretaries of Homeland Security and State, the Director of the Government Publishing Office, and appropriate congressional committees. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

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<sup>26</sup>ISO is an independent, nongovernmental organization that develops voluntary international standards. These standards provide specifications for products, services, and systems and, among other things, help ensure that products and services are safe, reliable, and of good quality.

<sup>27</sup> See enc. I for annual data on read rates at vehicle ports of entry from 2010 to 2013.

If you or your staff have any questions about this report, please contact me at (202) 512-8777 or [gablerr@gao.gov](mailto:gablerr@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were Kirk Kiester, Assistant Director; Michele Fejfar; Melissa Hargy; Christopher Hatscher; Richard Hung; Thomas Lombardi; Carl Potenzieri; and Maria Stattel.

A handwritten signature in black ink that reads "Rebecca Gambler". The signature is written in a cursive, flowing style.

Rebecca Gambler  
Director, Homeland Security and Justice

Enclosure

## Enclosure I: Radio Frequency Identification (RFID)-Enabled Travel Document Read Rates

### RFID System

U.S. Customs and Border Protection (CBP) employs RFID technology to facilitate primary inspection at ports of entry (POE). CBP's RFID system involves three components:

- **Tag:** Each RFID-enabled travel document contains a tag or chip with a unique number, which can be read wirelessly.
- **Reader:** This triggers the wireless transmission of the unique number from the RFID-enabled travel document to CBP's border inspection system.
- **CBP's border inspection system:** This provides a CBP officer with a traveler's record(s) and completes automatic checks against appropriate law enforcement and other databases.<sup>28</sup>

CBP's RFID system permits prepositioning of the traveler records so that when the individual traveler reaches primary inspection, the relevant information is already on the CBP officer's computer screen and the officer can be properly prepared to either process the border crossing more quickly or refer the traveler to secondary inspection to address any derogatory information related to the individual traveler.<sup>29</sup>

### Read Rates

CBP tracks data on RFID-enabled travel document read rates, or the percentage of times a type of RFID-enabled travel document is successfully read by CBP's border inspection system. CBP tracks read rates under two primary categories:

- **RFID:** The travel document is read wirelessly in CBP's border inspection system using its unique number from the RFID tag embedded in the travel document.
- **Non-RFID:** The document is read using a manual process, such as a CBP officer manually scanning a document in a machine or entering a document number into CBP's border inspection system.

### Read Rates at Vehicle POEs

At POEs where the technology is deployed, CBP utilizes RFID readers in pedestrian and vehicle lanes to facilitate the inspection process for entry. According to CBP officials, successful RFID system performance at vehicle POEs can result in a time savings during the primary inspection process.

CBP tracks RFID read rates at vehicle POEs in two locations: the pre-primary zone (PPZ) and the primary inspection booth (booth). See fig. 2.

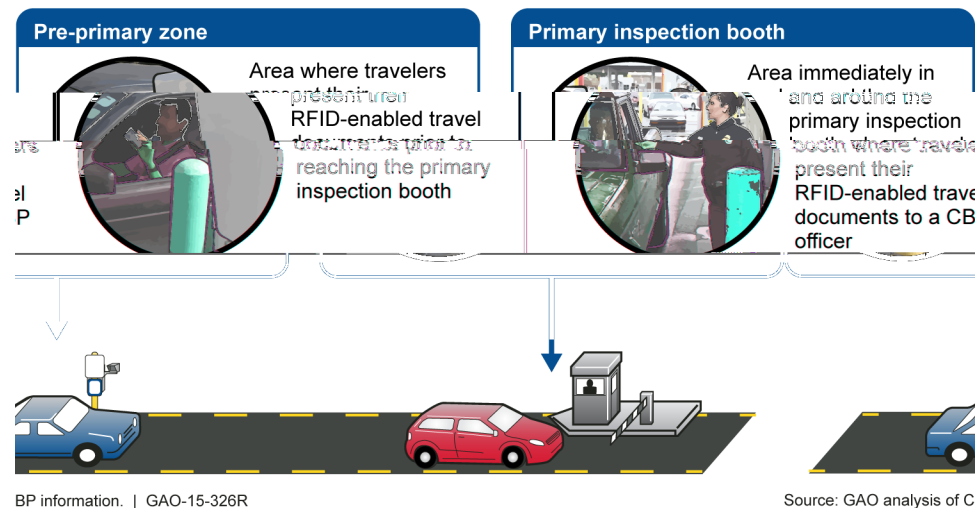
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<sup>28</sup>These include systems such as TECS (not an acronym) and the Global Enrollment System (GES).

<sup>29</sup>During primary inspection, travelers present themselves for inspection to CBP officers for a preliminary screening procedure used to process those individuals who can be readily identified as admissible. Persons whose admissibility cannot be readily determined and persons selected as part of a random selection process are subjected to a more detailed review called a secondary inspection.

## Enclosure I: Radio Frequency Identification (RFID)-Enabled Travel Document Read Rates

**Figure 2: U.S. Customs and Border Protection (CBP) Radio Frequency Identification (RFID) Reader Locations in a Vehicle Lane at a Port of Entry**



CBP officials stated that successful RFID system performance at the PPZ and booth results in a time savings during primary inspection of approximately 20 and 10 seconds, respectively. Consequently, higher read rates aid in expediting travelers in vehicles and reducing wait times to cross the border. All CBP vehicle POE lanes are equipped to process RFID-enabled travel documents. CBP also operates READY lanes, which are dedicated lanes at land POEs for travelers holding RFID-enabled travel documents, and Dedicated Commuter Lanes for travelers enrolled in specific trusted traveler programs (NEXUS and Secure Electronic Network for Travelers Rapid Inspection, or SENTRI).

For examples of read rates for selected RFID-enabled travel documents at all vehicle POEs from 2010 to 2013, see table 1.

## Enclosure I: Radio Frequency Identification (RFID)-Enabled Travel Document Read Rates

**Table 1: Annual Read Rates for Radio Frequency Identification (RFID)-Enabled Border Crossing Cards and Trusted Traveler Program Cards at All Vehicle Ports of Entry, 2010 to 2013.**

		Calendar year			
		2010 <sup>a</sup>	2011	2012	2013
RFID-enabled travel document card type	Query type	Read rate	Read rate	Read rate	Read rate
Border Crossing Cards	PPZ	24.66%	37.17%	40.66%	45.65%
	Booth	38.19%	50.96%	47.16%	51.19%
	Total by RFID	62.85%	88.12% <sup>b</sup>	87.82%	96.83% <sup>b</sup>
	Total by non-RFID	37.15%	11.88%	12.18%	3.17%
Trusted traveler program cards	PPZ	92.01%	91.45%	90.45%	91.13%
	Booth	6.14%	7.18%	7.93%	7.54%
	Total by RFID	98.14% <sup>b</sup>	98.64% <sup>b</sup>	98.38%	98.67%
	Total by non-RFID	1.86%	1.36%	1.62%	1.33%

Source: CBP data. | GAO-15-326R

Notes: The total RFID rate (total by RFID) is the sum of the pre-primary zone (PPZ) and primary inspection booth (booth) read rates and reflects the percentage of times that a given travel document card type successfully transmitted its unique number to CBP's border inspection system. Accordingly, it represents the best indication of a card's overall RFID performance. The total non-RFID rate (total by non-RFID) reflects the percentage of times a given travel document card type is read successfully in CBP's border inspection using a manual process, such as a CBP officer manually scanning a document in a machine or entering a document number into CBP's border inspection system.

According to CBP officials, having a RFID-enabled travel document read at the PPZ or booth is an efficiency whereby a travel document can be processed and be ready for inspection by a CBP officer at a primary inspection booth; however, reads, and subsequent read rates, do not indicate a vulnerability, as all travel documents presented by persons seeking admission to the United States are queried as necessary by an officer.

CBP calculated annual read rates using the total number read by card/query type (for example, Border Crossing Card/PPZ) divided by the total number of documents in the card type read per calendar year. Each RFID-enabled travel document read was recorded once at the first successful query type (PPZ, booth, or non-RFID); for example, a Border Crossing Card read at the PPZ would not be counted in booth or non-RFID to calculate read rates.

Trusted traveler program cards include NEXUS, Secure Electronic Network for Travelers Rapid Inspection (SENTRI), Free and Secure Trade (FAST), and Global Entry (CBP began collecting Global Entry card read rates starting in August 2011).

<sup>a</sup>Annual read rate data for 2010 do not include data for January 2010, as CBP was unable to provide read rate data for that month.

<sup>b</sup>The total by RFID does not equal the sum of the PPZ and booth percentages above because of rounding.

## Enclosure I: Radio Frequency Identification (RFID)-Enabled Travel Document Read Rates

### Factors That Affect RFID Read Rates

CBP officials stated that a variety of factors can affect RFID read rates:

- *Traveler behavior:* According to CBP officials, improper presentation of a RFID-enabled travel document by a traveler can directly affect RFID read rates. Examples of improper presentation include holding a RFID-enabled travel document below window level in a vehicle or not removing the document from its protective sleeve. CBP officials stated that improper presentation, especially at the PPZ, can prevent a receiver from capturing the unique number contained within the RFID tag, resulting in a lower read rate. CBP officials stated that frequent border crossers, especially those enrolled in CBP's trusted traveler programs, are more accustomed to using RFID-enabled travel documents and thus are more likely to present their documents properly than infrequent border crossers.
- *Lane type:* CBP officials stated that although all vehicle lanes contain RFID readers, travelers are more likely to use their RFID-enabled travel documents in READY lanes and Dedicated Commuter Lanes, a fact that can affect read rates across different types of RFID-enabled travel documents. For example, while trusted traveler program cards, such as NEXUS and SENTRI, must be used in Dedicated Commuter Lanes at POEs, holders of RFID-enabled travel documents may choose not to use their cards in other vehicle lanes.
- *RFID-enabled travel document:* According to CBP officials, read rates can be affected by travel documents with non-functioning RFID tags, which can be the result of damage to the travel documents, for example, exposure to extreme temperatures or bending the travel document.
- *RFID system performance:* CBP officials stated that RFID read rates can be affected by CBP system maintenance such as upgrades to software and hardware at a POE.



**Enclosure II: Comments from the Government Publishing Office.**

**DAVITA E. VANCE-COOKS**  
Public Printer



February 23, 2015

Ms. Rebecca Gambler  
Director, Homeland Security and Justice  
U.S. Government Accountability Office  
441 G Street NW  
Washington, DC 20548

Dear Ms. Gambler:

Thank you for the opportunity to review the draft report, “Government Publishing Office: Production of Secure Credentials for the Department of State and U.S. Customs and Border Protection” (GAO-15-326R). We find the report to be an accurate, factual representation of how we work to meet the needs of Federal agencies for secure credentials in carrying out their missions.

We would note that, in addition to approving the authority in 2007 to build, equip, and staff a facility to design and produce secure credentials, the Joint Committee on Printing since then has consistently approved expenditures for this program in the annual spending plans of the Government Publishing Office. Additionally, in 2012 the Committee approved the establishment of a continuity-of-operations (COOP) capability for secure credential production at our Stennis, MS, facility.

We appreciate the opportunity to have participated in this study as well as all the courtesies extended to us by the GAO staff.

Sincerely,

  
DAVITA VANCE-COOKS  
Director, U.S. Government Publishing Office

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