70 -- Radio Frequency Identification (RFID) Technology

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DHS - Direct Reports, Office of the Chief Procurement Officer, Office of Procurement Operations, US-VISIT Acquisition Division, 1616 N. Fort Myer Drive Suite 1800, Arlington, VA, 22209-3110

Description

1.0 OBJECTIVE The Government, by means of this Request for Information (RFI), seeks to identify superior remote data capture technologies for recording entries and exits of travelers through Ports of Entry (POEs), determine the state of those technologies, and what production capacity is available near term (9-18 months out). Firms that have the prerequisite background knowledge, experience, and capacity to be able to successfully meet or exceed the requirements described herein are invited to respond. The Government is seeking to identify equipment and expertise that offers significant improvements in performance and interoperability with similar solutions. 2.0 INTRODUCTION The United States Visitor and Immigrant Status Indicator Technology (US-VISIT) Program is an element of the U.S. Department of Homeland Security (DHS) specifically charged to enhance security, facilitate legitimate travel and trade, ensure the integrity of the U.S. immigration system, and to protect the privacy of visitors to the United States. US-VISIT works with other agencies (stakeholders) including Customs & Border Protection (CBP), Immigration & Customs Enforcement (ICE), Bureau of U.S. Citizenship and Immigration Services (USCIS), the Department of Transportation (DOT), and the Department of State (DOS), to enhance border management and traveler security. This is currently accomplished by leveraging existing systems to retrieve integrated information from a number of different sources. The information is used to establish the legal basis for entry into and exit from the United States. The US-VISIT Program and CBP are currently focused on certain non-US citizen individuals entering and exiting the United States, referred to as in-scope travelers. The Program has deployed identification and verification capabilities at air, sea and land Ports of Entry (POEs) that supports CBP's ongoing mission and improves the integrity of the immigration system, while also reducing the amount of time needed to process in-scope travelers. Also supports DOS BioVisa program. CBP currently utilizes three systems. Free and Secure Trade System (FAST) is a program that the United States, Canada, and Mexico use to harmonize their commercial customs programs based on principles of risk management, rigorous prescreening, partnership, and the use of advanced technology. The conveyances, as well as the drivers, are enrolled in the system and the cargo is pre-screened, which results in a harmonized expedited clearance process. NEXUS was developed in conjunction with Canada and data is shared between the two countries. It is not required to register a vehicle in this system. Secure Electronic Network for the Travelers' Rapid Inspection (SENTRI) was developed independently by the United States and vehicle registration is a requirement. The enrollment process is the same for each of the three systems: An applicant submits an application to the appropriate program and the government conducts checks. In the case of FAST and NEXUS Canada performs adjudication as well. Applicants, who meet base program criteria report to an enrollment center where they are interviewed, have their original identification and citizenship documents reviewed, are fingerprinted and have a digital photo taken. Low-risk applicants are then issued a Proximity Identification Card (RFID), which is used at the time of entry into the United States. The requirements described below reflect the concepts and approaches envisioned for US-VISIT and other agencies, but there is some latitude to reexamine proposed solutions if the benefits of a new technology or approach are significant enough to justify a change. 3.0 CURRENT ENHANCEMENTS While deploying new capabilities at sensitive air and sea POEs, and implementing many of the same capabilities to the busiest land POEs, US-VISIT has also recognized that technology may be used to improve the quality of data used to verify the legal status of in-scope travelers while facilitating travel. The US-VISIT program seeks information on such technologies. The technology must be compatible and interoperable with existing systems and must be compatible with the environments at existing U.S. POEs. US-VISIT is currently engaged in a proof of concept activity using radio frequency identification (RFID) technology to study the use of remote data capture technology at POEs. Current performance is based on passive ultra high frequency (UHF) RFID technology, but this RFI does not restrict responses to this technology nor does it imply that passive UHF RFID is the preferred technology. Thus, while some of the following discussion uses terminology consistent with passive UHF RFID, potential vendors should not interpret this language as restrictive. 3.1 The Current US-VISIT Proof of Concept Trials US-VISIT's Increment 2C expands upon current capabilities by introducing the issuance of a unique automatic identifier (a-ID) that is capable of being read automatically, passively (readable without action from the traveler), and remotely as an enrolled traveler crosses a land-border POE to either enter or exit the United

States or other locations. These a-IDs will be issued at five selected POEs and will consist of an RFID tag embedded within the CBP Form I-94 (Nonimmigrant Visa Waiver Arrival - Departure Record). The following considerations guided the selection of this method of RFID tag issuance. • The I-94/I-94W forms (Arrival Departure Record/Nonimmigrant Visa Waiver Arrival – Departure Report) are used currently as part of the standard process to record entry into and exit from the U.S. Under current procedures, DHS only collects information from the form for the first entry and last exit given that the form may be used for multiple entries and exits. This means DHS is not able to document many crossings. Our requirement is to capture information on all entries and exits. • The embedded device can be sensed remotely, passively, and automatically. While these requirements are not completely met by the RFID technology in Proof of Concept testing, the Government requires that a-IDs be read under circumstances that include the device being carried in a pocket, purse, wallet, in traveler's clothes, or elsewhere on the person of the traveler. The device must be readable when the traveler walks into a POE or crosses the border at a POE while riding in a conveyance (e.g. car, truck, or bus). The traveler should not have to do anything to prepare the device to be read, or to present the device for reading (i.e., passive and automatic use). • Readers are located in doorways and in individual pedestrian and vehicle lanes to allow identification of where the token is read and to allow association of the token with the individual and, if applicable, the vehicle in which the token is carried. • The device must be readable under all kinds of indoor and outdoor conditions at both the northern and the southern borders of the U.S. and while carried by pedestrians or vehicle occupant (e.g. cars, trucks or buses). 4.0 TECHNOLOGY INTERESTS Information is now sought regarding remote data capture technologies. To be considered, technology must include both the device carried by the traveler and the reader of that device. The maturity of the technology and the ease of integration into the existing communication interfaces and infrastructure will also be a consideration in the government's evaluation of the information submitted. Other considerations will be power consumption, reliability, maintainability, availability and degree of difficulty in installation; operation and maintenance, spatial footprint, EMI emissions, security, and practicality of use on a national scale at land border POEs. The technology solution shall comply with applicable safety guideline levels for human health. This RFI is seeking a solution that processes data captured remotely from an object carried by individual pedestrians and vehicle occupants during entry and exit from the United States at the 50 largest land border POEs. A successful solution has the potential to be used in other operational environments (e.g. air and sea ports) and by other federal agencies. Thus, the potential application of technologies identified via this RFI is broad. While not required for this RFI, the strategic goal is to seek a secured solution capable of supporting biometric verification, while protecting the privacy of the individuals carrying the object. Relevant information gathered during the RFI process will be summarized and shared by US-VISIT stakeholders, including CBP, USCIS, DOS and DOT. This information may also be considered for use in establishing international standards in border control, passenger processing and travel facilitation systems. 4.1 Goals Several high-level goals apply to this RFI: • The enterprise solution developed for the government shall be developed with an Open Architecture and in accordance with International Standards (e.g. ISO 18000.6(b) or successor) • The solution must support the need to identify the exact location of the read such as a specific pedestrian or vehicle lane in which the token is read. • The solution presented must sense the remote data capture technology carried by a pedestrian traveler (i.e., the "token") at distances up to 25 ft. • The solution presented must sense all tokens carried by travelers seated in a single automobile, truck, or bus at a distance up to 25 ft while moving at speeds up to 55 mph. o For bus traffic, the solution must sense up to 55 tokens • The accuracy and reliability goals of the data capture process are 100%. • For a successful read, the traveler should not have to hold or present the token in any special way to enable the reading of the token's information. The goal is for the reader to sense a token carried on a traveler's person or anywhere in a vehicle. • The token will be embedded in or attached to an official travel document and shall not be adversely affected by laser printing, hand stamping, folding, or normal handling of such a document. • The solution shall be compatible with the current processes, procedures and operations of US-VISIT and all other stakeholders identified in this RFI. • The solution shall minimize facilities modifications; however further development of existing infrastructure is allowed if not extensive. • The solution shall be accurate and reliable under conditions of

use at border crossing points on both the northern and southern borders of the United States in all extremes of weather. Token-enabled travel documents should remain functional under widely varying use, storage, and carrying conditions over the lifetime of the token. • The solution shall incorporate existing lanes, configurations and systems deployed by CBP and US-VISIT. • Tag and antenna read rates shall exceed 90%, read ranges shall extend to a minimum of 25 feet, and error rates shall not exceed 10%. • Compatibility and non-interference in performance of antennas to tags across vendor platforms • Compatibility and non-interference in performance with programs such as NEXUS, SENTRI, and FAST o NEXUS/SENTRI/FAST solutions – Intermec Kathrein Antennas, Intermec 2100UAP readers, TransCore eGo 2210 Readers, AA3152 Universal Toll Antennas, Intermec Intelligent tags. o US-VISIT Increment 2C Proof of Concept (POC) solution– Symbol AR400 readers, Symbol Max Rad Antennas, Symbol tags • Reader fault tolerance, remote diagnostics, field repair, and field upgradeability • Fit to mission, with a special emphasis on multi-occupant vehicular traffic moving at speed (0-55 mph) • Fit to environment, with a special emphasis on electromagnetic interference (EMI) and FCC Regulations • Privacy of travelers shall not be compromised • Resistance to forgery/counterfeiting attempts 4.2 Standards The government's intention is as follows: • For all technologies, the intent is to specify open non-draft standards that are not encumbered by proprietary intellectual property. • Reader communication with a middleware host (intended to mediate at least one remote data capture system, and perhaps two or more such systems at each POE) and with a reader maintenance/management system is desired to be via standard-compliant network communications and protocols, and use standard data structures and commands. • Encryption, where applicable, shall comply with FIPS PUB 140-2 (Security Requirements for Cryptographic Modules). 5.0 SUBMISSION A summary paper must be submitted with each response to the RFI. The purpose of the summary paper is to help the government understand your response in the way you believe best represents the application of your product/s to the subject of this RFI. Responders are requested to provide a complete separate response that describes each system the responder wants to present. Please do not provide separate responses where differences between components of one response and the next response are minor. The summary paper should systematically address each of the points addressed in Sections 4.0 through 4.2 above. All relevant facts and claims must be contained in the summary paper, including summaries of and full references to any substantiating tests or technical evaluations. The summary paper requested should not be a marketing tool. It is an information tool that will be used by the US-VISIT program and other government agencies in their search for new standards and new technologies with possible application to NEXUS, SENTRI, FAST, and Increment 2C, and to familiarize all stakeholders with the technologies you describe. The information on the summary paper should be accurate, succinct, complete and descriptive of the technology. The summary paper reflects how interested parties would like their technology presented in summary form to US-VISIT and should highlight all information the interested parties would like to convey. The summary paper should not exceed 10 pages using 12-point Times New Roman type. Summary papers may be compiled by the Government into a comprehensive Summary Report and be presented to US-VISIT stakeholders. The Summary Report may be categorized by the following criteria. • Basic POE Entry & Exit Scenarios • Form Factor carried by the traveler • Stationary outdoor devices for use on roads • Stationary indoor devices for use at entrances, gates, kiosks, and desks • Availability and functionality of handheld readers • Read rates, ranges, error rates • Compatibility and interoperability 5.1 Method of Submission The summary paper should be submitted both in hardcopy (4 copies) and in electronic form. Electronic copies should be submitted in Microsoft Office 2000 format. Supporting information, e.g. brochures must be submitted in a binder that holds all such material together for each technology submitted by a respondent and also in electronic form; CD-ROM is the preferred medium for electronic submission. The government may, at its sole discretion and at no cost to the government, copy all or parts of your submission for the purpose of evaluating, summarizing, or compiling information. Stakeholders in the RFI process will share information. The government will use usual and customary means to safeguard proprietary information, but only when such information is (1) clearly marked as proprietary, and (2) is, in fact, information that could not have been obtained from another party or source. 5.2 Submission Due Date Response to the RFI must be provided within thirty (30) workdays of its publication to Mr. Robert

Richards, Contracting Officer, 1616 North Fort Myer Drive, 17th Floor, Arlington, VA 22209, (202) 298-5122 or robert.richards@dhs.gov. Questions on this RFI should be submitted to the Contracting Officer on or before August 9, 2005. Answers to those questions will be provided at the Industry Briefing. 6.0 NEXT STEPS US-VISIT intends to hold an Industry Briefing, prior to receipt of responses from this RFI, on Tuesday, August 16, 2005 at 1:00 P.M. in Room 1890, 1616 North Ft Myer Drive, Arlington, VA. Please communicate your company's intentions to attend to Mr. Kirk Johnson at (202) 298-5059 or kirk.a.johnson@dhs.gov, not later than 5:00 p.m. (Eastern Standard Time), Friday, July 29, 2005. Space is at a premium and the number of participants per company is limited to two (2). Following receipt and evaluation of summary sheets and descriptive literature and information, respondents, and others, may be invited for one-on-one discussions. These one-on-one discussions will be robust two-way communications to make sure that all parties fully understand each other's positions. Potential discussion topics include: expectations for RFP participation; interoperability between existing and new systems; product performance; maintenance recommendations; technology refreshment processes/windows; adaptability to new user interfaces; rate and timing of systems/equipment delivery after award of a contract; and other topics that are of interest to the government or are suggested by the exchange. 7.0 ACQUISITION POTENTIAL US-VISIT is considering a solicitation for issuance in the First Quarter of Fiscal Year 2006 to all qualified sources. The government is considering an indefinite delivery/indefinite quantity (IDIQ) contract with a base year and four (4) one year options. Deliverables would likely include delivery of equipment, labor and materials for installation and integration with existing systems, and operations and maintenance services. Technology refreshment will be required at periodic times throughout the life of the contract. 8.0 OTHER INFORMATION Interested parties are advised that US-VISIT and DHS OPO are under no obligation to take any further action with any party as a result of this RFI. Summary sheets supplied in response to the RFI will be made available to all US-VISIT stakeholders. Accompanying information and descriptive literature may also be made available to US-VISIT stakeholders. With the exception of the summary sheets, any other information that is considered non-disclosable to all US-VISIT stakeholders should be identified as such. Non-disclosable information will be retained exclusively for the use of US-VISIT and DHS OPO.

Point of Contact

Bob Richards, Contracting Officer, Phone 202-298-5122, Email robert.richards@dhs.gov - Kenneth Kreutter, Contracting Officer, Phone 202-298-5110, Fax 202-298-5208, Email Kenneth.Kreutter@dhs.gov

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