SOW Task 2.0 until/2.2: Program Evaluation for DHS Biometric Exit Pilots (Base Period-- Task 2)

The future of U.S. immigration policy has been an issue of long discussion by officials in several Administrations, in the media, on Capitol Hill, and among the general public. Much of this discussion has focused on "overstays," i.e. individuals who enter the United States lawfully, but who stay longer than their authorized period of admission. One of the most common reasons for denial of a U.S. visa is that the visa applicant fails to convince the U.S. consular officer that he or she will adhere to the admission period.

Establishing an effective Validated Exit program would allow DHS to meet its mission goals to protect the American public and enforce immigration laws. DHS currently faces a difficult decision for a Validated Exit system. Exit data collection is necessary to ensure that the Department knows who has not left on time, but there are varying opinions on how to best collect and track this information. Statutory mandates require DHS to implement a *biometric* exit program, however, it is unclear if previously conducted pilots and studies have answered questions necessary to formulate a long-term path forward regarding biometric exit and subsequently Validated Exit.

The objective of this effort is to work with DHS and contractor staff to aggregate all previous DHS evaluations of operational concepts for biometric exit. analyze available requirements, lead a methodological review to assess the validity of previous studies, and lead the design of research and pilot activities for candidate technologies to answer research questions necessary to inform a formulate a long-term path forward regarding biometric exit and subsequently Validated Exit. The initial target customer is senior DHS leadership.

SOW Task 3.0 until3.3: Mobile Biometrics Project (Option Period 1-- Task 3 -- 12 Months)

The Homeland Security Act of 2002 (Public Law 107-296) states that DHS S&T will "support basic and applied homeland security research to promote revolutionary changes in technologies: advance the development, testing and evaluation, and deployment of critical homeland security technologies: and accelerate the prototyping and deployment of technologies that would address homeland security vulnerabilities." Pursuant to this mission, the Resilient Systems Division (RSD) of the Department of Homeland Security (DHS) Science and Technology Directorate recognizes the need for commercially available hand-held biometric acquisition devices that can effectively collect data samples from subjects under a variety of conditions. The DHS is responsible for the biometric identification of persons to achieve the statutory and regulatory missions of the components. To accomplish these tasks, DHS components require the ability to positively identify/screen individuals in a secure, efficient, accurate, and timely manner. This ability encompasses the collection, storage, transmission, and receipt of biometric and biographic data to support the component missions. The capability must be portable and operable in a wide variety of areas regardless of existing infrastructure (i.e. offshore, foreign and remote locations, ports of entry, detention centers... etc) and conditions (i.e. day/night, arid/humid climates, hot/cold temperature extremes). The capability must also accommodate operators with varying levels of technical ability and subjects with varying levels of physical ability.

The output from these mobile acquisition devices must be usable for searches of large-scale biometric databases (1 to many) and/or verification against a previously taken biometric sample (1 to 1). In order

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to assure maximum interoperability and efficiency of operation, DHS requires that the data output from these acquisition devices conform to pre-established standards. This program focuses on the integration of various biometric modules into a single hand-held device or system. Modules may include but are not limited to: a four linger slap module for fingerprints, visible wavelength camera (with optional llash/illuminator) for face acquisition, and a near-infrared, dual iris capture camera. Additional biometric modules such as for voice and other technologies, such as card readers, etc. may be included in the final hand-held system. Multiple mobile devices currently are being piloted in the field among various component agencies as well as police departments throughout the country. Several police departments have conducted independent evaluation prior to this SOW and will provide additional input into this evaluation process. The Vendor should be familiar with the U.S. National Institute of Standards and Technology (NIST) Mobile ID Device Best Practices Recommendation, Sept 2008 report and should design a plan for evaluating the implementation of this device in the field. The plan should describe how the data capture methods, signal processing (image normalization, segmentation, feature extraction, quality assessment, template creation, output record formatting...), matching algorithms for each modality, decision for match/no-match and the accuracy of displayed results function when the device is operationally deployed and should assess how the device users employ the device and interpret the information it provides to what effect. The design should provide for the assessment of the strengths and weaknesses of the device as operated in the field and to the extent possible should determine the degree to which the availability of the new multimodal biometric tool improves on prior identification technologies.

SOW Task 4.0 until 4.6: TSA Personnel Evaluation (Option Period 2-- Task 4 -- 12 Months)

The goal of this work is to enhance TSA OSO's existing Officer Performance Studies project in three areas through evaluation. These areas will improve aviation security, improve the efficiency and effectiveness of TSA's officer performance studies, improve TSA's officer training programs, and improve TSA's standard operating procedures at airport checkpoints. First, examine possible benefits of remote screening -- having TSA X-ray operators perform searches away from the terminal (There are current conversations and debates with DHS and TSA about the cost and benefits of having TSA Officers work remotely. This task will examine whether performance is better or worse when conducted remotely). Second, enhance the assessment and training of specific search strategies employed by TSA Officers when conducting X-ray screening (This task will assess search strategies used by different TSOs to see if some styles are more effective than others and will determine whether effective strategies can be trained). Thirdly, determine the impact on threat detection performance of specific Intel or briefing information provided by Superiors (This task will help determine on how best to inform TSA Officers of newly discovered threats so as to improve overall performance).

SOW Task 5.0 until 5.5: CBRNE Standards for First Responders (Optional Task 5 - 18 Months)

The goal of this task is to develop a method to track the operational health of the first responder community on CBRNE standards. The operational health of first responders with regard to CBRNE standards includes (1) the understanding of current CBRNE standards in existence, (2) the use and practical application of CBRNE standards, (3) gaps in and the practical need for CBRNE standards, and (4) prioritization of CBRNE standards development. The system should be based loosely on established, survey-based surveillance systems used for the ongoing collection, interpretation, and dissemination of

public health data. Development of the system should occur in two phases. In the first phase, the Vendor will conduct a literature review, engage the stakeholders, develop the questionnaire, develop the sample frame and conduct a pilot test of up to nine respondents. In the second phase (which are possible future tasks), the first national wave of data collection, analysis and dissemination will occur. Phase II will provide baseline data for the system. In subsequent years ("waves"), the survey can be re-administered for the tracking of trends related to CBRNE standards.

RTL in consultation with S&T, will clarify and focus the project research questions, with necessary special emphasis on the in-practice implications of the goals and objectives of the National Strategy for CBRNE Standards, RTI will then review and summarize available literature and completed studies on the current state of each of the six main goals of the National Strategy. Those goals are:

- 1. Establish an interagency group for CBRNE standards to promote the coordination of these standards among Federal, state, local, and tribal communities.
- 2. Coordinate and facilitate the development of CBRNE equipment performance standards and promote the use of standards for Federal, state, local, and tribal communities.
- Coordinate and facilitate the development and adoption of interoperability standards for CBRNE equipment.
- 4. Promote enduring CBRNE standard operating procedures for Federal. State, local, and tribal use to improve National preparedness and response.
- 5. Establish voluntary CBRNE training and certification standards for the Federal. State, local, and tribal communities and promote policies that foster their adoption.
- 6. Establish a comprehensive CBRNE equipment testing and evaluation (T&E) infrastructure and capability to support conformity assessment standards.

RTI will include in the review print materials, official documents, media reports and other sources, as appropriate, S&T will assist with the identification and obtaining of documents, RTI will deliver a document briefly summarizing the literature review to S&T.

IV. STAFFING

See Attachment 2- HSAR 3052.215-70 Key Personnel or Facilities (DEC 2003), which identifies Project Manager and Chief Technical Representative as Key Personnel.

V. DELIVERABLESIMILESTONE PAYMENT SCHEDULE

		Deliverables	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	(b)(
SOW Task	Deliverable	Description	Due Date	
1.0	Project Management Plan	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager.	7 months from Date of Award Base Period Task 1 Submitted and paid	
1.1	Draft of Data Collection Instruments	Draft of all data collection instruments. Final version requires approval by the RSD Program Manager.	3/10/2013	

1.2	Evaluation Framework for Rapid DNA Project	A path forward for the program evaluation that is specifically tailored to the USCIS program and technology being evaluated. Final version requires approval by the RSD Program Manager.	6/15/2013
1.3	Summary of Data Collection Activities A summary report of data collection activities and observations		8/31/2013
[,4	Final Report for Rapid DNA Project	A formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to about 25 pages, including an executive summary of no more than two pages but excluding appendices, if any. The final version requires approval by the RSD Program Manager	12/31/2012
2.0	Baseline Assessment for Biometric Exit Pilots	A summary of the previously conducted pilots as it stands. The Vendor will work with RSD to aggregate all previous DHS evaluations of operational concepts for biometric exit, and analyze available requirements.	3 months from Date of Award Base Period Task 2
2.1	Evaluation Framework for Biometric Exit Pilots	A methodological review to assess the validity of previous studies in answering research questions necessary to inform a DHS strategy for biometric exit	5 months from Date of Award Base Period Task 2
2.2	Final Report for Biometric Exit Pilots	A formal report that communicates a long-term path forward for the program evaluation that is specifically tailored to inform senior DHS leadership decisions. The length of the final report is anticipated to about 25 pages. including an executive summary of no more than two pages but excluding appendices, if any. The final version requires approval by the RSD Program Manager.	6 months from Date of Award Base Period Task 2
3.0	Baseline Assessment for Mobile Biometrics Project	A summary of the program as it stands. Final version requires approval by the RSD Program Manager	4 months from exercising Option Period
3.1	Evaluation Framework for Mobile Biometrics	A path forward for the program evaluation that is specifically tailored to the program and technology being evaluated. Final version requires approval by the RSD Program Manager.	Option Period Task 3 6 months from exercising Option Period Option Period Task 3
5.2	Monitoring and Evaluation of Mobile Biometrics Project	Implementation and monitoring of the evaluation framework.	4 to 5 months from exercising Option Period
3.3	Final Report for Mobile Biometrics Project	A formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to about 25 pages, including an executive summary of no more than two pages. The final version requires approval by the RSD Program Manager.	Option Period Task 3 12 months from exercising Option Period Option Period Task 3
1.0	Project Management Plan	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager.	I month from exercisin Option Period. Option Period Task 4
4.1	Prepare Experiments	A path forward for the personnel performance evaluation that is specifically tailored to the areas being evaluated. Final version requires approval by the RSD Program Manager.	3 months from exercising Option Period. Option Period Task 4
1.2	Test Subjects	Implementation and monitoring of the evaluation framework. Collect and analyze data.	11 months from exercising Option Period.

4.3	Prepare manuscripts/presentations	Manuscripts and publications for both scientific audiences (where appropriate) and TSA stakeholders that communicates the evaluation procedures and findings to relevant audiences. The final versions require approval by the RSD Program Manager.	12 months from exercising Option Period. Option Period Task 4
4.4	Quarterly Reports	Quarterly report formats will be approved as part of the PMP (Task 4.0) but will, at a minimum, include budget expenditure and task progress.	3. 6. & 9 months from exercising Option Period.
			Option Period Task 4
4.5	Draft Final Reports	A draft version of a final report that communicates the evaluation procedures and findings to relevant audiences.	II months from exercising Option Period.
			Option Period Task 4
4.6	 Final Reports A formal report that communicates the evaluation procedures and findings to relevant audiences. The final version requires approval by the RSD Program Manager. 	12 months from exercising Option Period.	
		Kan hogan manager.	Option Period Task 4
5.0	Project Management	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires	1 month from exercising Option.
0.0	Plan	approval by the R8D Program Manager.	Optional Lask 5
			3 months from exercising Option.
5.1	Review of Literature	A review of relevant Interature in the area of First Responder acquisition, training, and use of CBRNE Equipment.	Optional Task 5
	 	Quarterly Reports Quarterly report formats will be approved as part of the PMP (Task 5.0) but will, at a minimum, include budget expenditure and task progress.	3, 6, 9, 12 & 15 months from exercising Option.
5.2	Quarterly Reports		Optional Task 5
			6 months from exercising Option.
5.3	Draft Survey Instrument	1 Draft of all data collection instruments. Final version recuires approval by the RND Program Manager.	Optional Task 5
		en e	9 menths from
	Summary of Data		exercising Option.
5.4	Collection Activities	A summary report of Phase I data collection activities and observations.	Ontional Task 5
		A draft formal report that communicates the evaluation procedures	i6 montas from
гг		and findings to relevant audiences. The length of the final report is anticipated to be about 25 pages, including an executive summary of	exercising Option
5.5	Draft Final Report	no more than two pages but excluding appendices, if any. The draft final version requires approval by the RSD Program Manager.	Optional Task 5
		A formal report that communicates the evaluation procedures and	18 months from
5.6	Final Report	findings to relevant audiences. The length of the final report is anticipated to be about 25 pages, including an executive summary of	exercising Option.
J.U		no more than two pages but excluding appendices, it any. The final version requires approval by the RSD Program Menager.	Optional Task 5

*Due to rounding, grand total at Firm Fixed Price is (b)(4)

* COR shall determine, at his discretion, how long after receipt of the draft deliverable RTI has to deliver the final version and how long the Government will review the draft, before providing comments.

VI. Other Task Order Details

ATTACHMENT 1		Page 9
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- 1. Period of Performance. The task order period of performance is from 14 September 2011 through 31 January 2015.
- Travel. Domestic travel on the part of the Vendor's staff may be required in the performance of the duties that are listed herein. It is expected that the Vendor will reimburse non- government participants for those travel expenses that they might incur.
- 3. DHS-Furnished Information.
 - a. DHS will provide certain DHS information, materials, and forms unique to DHS to the vendor to support certain tasks under this SOW.
 - b. The DHS S&T Contracting Officer's Representative, identified in this SOW, will be the point of contact (POC) for the identification of any required information to be supplied by DHS.
 - c. The Vendor will prepare any documentation according to the guidelines provided by DHS.
- 4. Place of Performance.
 - a. The Vendor will perform the work under this SOW at their place of business and the workshop location.
- 5. DHS-Furnished Property. DHS property will not be provided to the Vendor.
- 6. Deliverables. The Vendor will provide all deliverables identified in this SOW directly to the taskspecific DHS S&T Technical Representatives and to the S&T Contracting Officer.
- 7. Program Status Report. The Vendor will deliver monthly program status reports. The reports will be submitted on the 15th day of the month. The reports shall include the following:
 - a. Summary of progress during the reporting period (including any significant technical information).
 - b. Unanticipated technical or management problems of significance.
 - c. Problems anticipated in future reporting periods.
 - d. Summary of important meetings, briefings, trips and conferences during the period of the report and those planned in the following period.

All reports shall be submitted to the task-specific CORs and to the DHS S&T Contracting Officer electronically.

- 8. Funding Requirements. DHS will provide funding that is outlined in the Task Order, at the discretion of the Government, subject to the availability of funds.
- 9. Security Requirements.
 - a. All work performed under this SOW is unclassified unless otherwise specified by DHS.
 - b. If classified work is required under this SOW. DHS will provide specific guidance to the Vendor as to which work will be conducted in a classified manner and at which classification level. The Vendor will also adhere to other applicable Government orders, guides, and directives pertaining to classified work. This SOW may require access to information at the unclassified level.
 - c. The Contractor shall not publish, permit to be published, or distribute for public consumption, any information, oral or written, concerning the results or conclusions made

ATTACHMENT 1		Page 10
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pursuant to the performance of this Task Order, without the prior written consent of the Contracting Officer. An electronic or printed copy of any material proposed to be published or distributed shall be submitted to the Contracting Officer.

VII. Points of Contact

Contracting Officer: Duane Schatz Science and Technology Acquisitions Division Office of Procurement Operations Department of Homeland Security Washington, DC 20582

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Contracting Officer's Representative (COR): Richard Legault. Ph.D. Resilient Systems Division Science and Technology Directorate Department of Homeland Security Washington, DC 20582

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DHS S&T Invoicing: U.S. DHS. ICE Attn: S&T RSD Invoice Burlington Finance Center P.O. Box 1000 Williston, VT 05495-1000 invoicesat.consolidation@ice.dhs.gov

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Statement of Work for Program Evaluations

U.S. Department of Homeland Security Science & Technology Directorate Resilient Systems Division Biometrics

Task Order HSHQDC-11-F-00087 Modification P00005 PR No. RSHF-13-00050/000001

This Statement of Work (SOW) outlines the activities that are involved in acquiring technical and consulting services in the social, behavioral, and economic sciences. These services will be responsible for addressing the methods, models and technologies to conduct program evaluations on biometric technologies within the Resilient Systems Division (RSD) of the Science & Technology Directorate (S&T).

I. BACKGROUND

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge science and technology in its quest to make America safer. The DHS S&T is tasked with advancing the scientific, engineering, and technological resources of the United States and leveraging these resources into tools to help protect the homeland. The Resilient Systems Division (RSD) applies the social and behavioral sciences in order to improve the detection, analysis, and understanding of threats posed by individuals, groups, and radical movements: to support the preparedness, response and recovery of communities impacted by catastrophic events; and to advance national security by integrating human factors into homeland security science and technologies.

The Quadrennial Homeland Security Review (2010) has identified Maturing and Strengthening the Homeland Security Enterprise (HSE) as a key DHS programmatic goal. DHS S&T provides those technologies, processes and expertise to the HSE in order to assist them in fulfilling their missions. However, DHS S&T has no formal, scientifically sound, program evaluation process to ensure that the mission is being met in a meaningful and efficient manner. Current S&T evaluation programs only test and consider the quality of the technology to be transitioned. A program evaluation approach that places a technology or other innovation within an operational context, and thus enables decision makers to assess the entire operational approach in which the technology or innovation is embedded, ultimately improving technology transition to the customer component agencies.

This SOW summarizes the work that is planned for program evaluations in DHS S&T. This work will be conducted through engaging the technology stakeholders, focusing the evaluation design on the technology and the purpose of the overall operational program, gathering and analyzing evidence, and producing a final report that will result in an improved program. Those lessons learned will help inform future DHS S&T program conceptualization and execution, and will lead to improvement in the quality and effectiveness of programs transitioned to customer component agencies.

II. SCOPE OF WORK

During the base period of performance, the Vendor will conduct program evaluations on the following DHS S&T programs: DHS Biometric Exit Pilots and the Rapid DNA project. In addition, there is an option for an evaluation of the Mobile Biometrics Project, an option for the evaluation of search capabilities for the Transportation Security Administration and an option for an evidence-based evaluation of Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) Standards for First Responders. The Vendor will develop and utilize a scientifically sound method to perform the following tasks:

- ·:• Identify and engage stakeholders:
- •:• Determine evaluation needs:
- -: Develop measures of activities and outcomes;
- •:• Identify, assess and gather data:
- •:• Analyze the data:
- ** Reach operationally relevant conclusions; and
- -: Ensure the use and sharing of lessons learned.

Under this effort, the Vendor will be responsible for performing the following activities:

- Development of measures of progress;
- ** Assessment of the impact and effectiveness of the technology, performance, or innovation in the operational environment and identification of areas of improvement;
- •:• Development of a baseline assessment of the operational program to inform the creation of an evaluation framework that is specifically tailored to the program, personnel performance or the technology being evaluated and:
- •:• Preparation of a final report identifying lessons learned and provides both S&T and the operating agency with a road map for building on the evaluation's results. The report will be provided to the program managers of the component agency, RSD, and other DHS stakeholders.

III. SPECIFIC TASKS

The specific tasks that are involved in the evaluation of DHS S&T technologies are provided in the following paragraphs:

Identify and Engage Stakeholders

In consultation with RSD, the Vendor will identify and engage relevant stakeholders. These include those involved in program operations, those served or affected by the program, and the primary users of the evaluation (those in a position to make decisions about the program). Stakeholders will be systematically identified in conjunction with RSD. Stakeholders will have the purpose of the program evaluation explained to them, and how their participation in the process fits into the evaluation as a whole.

Description of the Program

The Vendor, in consultation with RSD, will specifically identify the purpose of the project and the research questions that it intends to address, with necessary special emphasis on the in-practice implications of the technology, performance, or innovation on programmatic goals and objectives. The Vendor will then conduct a baseline assessment on the current program implementation or previously conducted pilots.

Focus Evaluation Design

The Vendor will then tailor the evaluation to the specific program and purpose of the evaluation. The Vendor will need to clarify who will use the evaluation results, and how those results will be used. The Vendor will also consider the context of the program in order to determine the appropriate evaluation strategy that is best suited for the specific program. Where feasible and cost effective, the developed field experimental methods will be used by the Vendor, unless RSD approves another approach.

Identify: Assess. and Gather Data

As part of the design stage, the Vendor will responsible for the assessment of data needs and availability along with obstacles to and the necessary costs of data acquisition. The normal expectation from the Government is that both quantitative and qualitative data may be relevant to the conduct of an evaluation. Data of only one type will be used and collected if explained to the satisfaction of RSD. To keep costs low, data gathering by the Vendor will utilize existing program data to the extent feasible. To the extent that privacy and other rules permit, the data will be stored in a form that will allow the agency or S&T to reuse it in any follow-on or future work as appropriate without the payment of license or other fees.

Analyze Data and Reach Conclusions

After the data have been gathered, the Vendor will analyze the data using appropriate statistical and qualitative methods in order to assess program performance and to identify any gaps or weaknesses in or strengths of the technology as operationally applied. The Vendor will also be responsible for tying any conclusions to program standards of performance and to the extent there are weaknesses in the operational application of the technology or innovation, the Vendor will propose mitigation strategies.

Final Report

The Vendor will generate a final written report and provide any accompanying presentation slides, that sets forth the research goals, explains the research strategies, describes the research design as implemented and the data used with a discussion of their strengths and limitations, reports the methods and results of the analysis, including, where appropriate, tables, key statistical outputs or other information summaries and recommendations for actions in the form of a final report. The report will also include a brief executive summary and, if appropriate, statistical tables, summaries of the qualitative data or other appendices. The copyright for the report will be held by D11S.

ATTACHMENT 1		Page .
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This report will be made available to the program manager(s) of the component agency and to RSD. Any additional dissemination of the report will be made at the discretion of RSD. The basis for the recommendations, their rationales and the data behind them will be explained by the Vendor to the responsible program manager(s) and any relevant stakeholders or other potential users that have been identified by the program manager. Up to five such briefings of up to 90 minutes in length may be requested by RSD.

Projects to be Evaluated

Base Period of the Task Order -- the Vendor will focus on the Rapid DNA Project (Task 1) and DHS Biometric Exit Pilots (Task 2). Option Period 1-- the Vendor will design the evaluation framework of the Mobile Biometrics Project (Task 3), upon option exercise. Option Period 2 the Vendor will design the evaluation framework of the TSA Personnel Evaluation Project (Task 4), upon option exercise. Optional Task 5 – the Vendor will design the evaluation framework of the CBRNE Standards for First Responders project (Task 5). All projects are described in additional detail below:

SOW Task 1.0 until/1.11: Program Evaluation for Rapid DNA Project (Base Period-- Task 1)

United States Citizenship and Immigration Service (USCIS) currently uses fingerprints to check for any criminal history or immigration violations on benefit applicants, but these biometrics do not determine if persons are related to one another. However, DNA (deoxyribonucleic acid) does allow for the determination of family relationships since children receives half of their DNA from each parent. Until recently, however, it required a laboratory full of equipment and a highly trained forensic analyst to interpret the results. Sending a sample to a lab and waiting for it to be processed could take weeks to months at the cost of \$300 to \$400 per sample. Rapid and low-cost DNA processing permits efficiencies in the processing of valid applicants, reduces the costs associated with processing, deters fraud in applications, and ultimately increases the number of legal immigrants admitted into the country.

Rapid and low-cost DNA processing may also prevent fraud and illegal profiteering with regard to kinship benefits. USCIS has identified the need for accurate DNA analysis to test kinship that would take less than one hour at a cost of under \$100. This testing needs to be done in field locations, rather than at external labs, on a desktop-size device which is easy for the adjudicator to operate.

In 2008, a DNA screening pilot program that tested DNA for kinship of hundreds of cases involving family reunification in East Africa found that a considerable number of kinship claims were contradicted by DNA testing. Currently, DNA analysis to determine identity and kinship is not widely feasible because of cost and time considerations. With document fraud an increasing concern for USCIS adjudicators, a technology that could provide validation of family relationship rapidly and accurately while in the field would help ensure the efficacy of the process. The primary objective is to verify family relationships (kinship), but Rapid-DNA will also allow the identification of known criminals among those seeking asylum or immigration, verify relationships in overseas adoptions, and provide for family reunification in mass-casualty situations. The initial target customer is USCIS Refugee. Asylum and International Operations Directorate

In 2012, the Rapid DNA program identified addit confusion erives to broaden the potential uses associated with the Rapid DNA system in the Demeland Secondy Enterprise. In our construction understand for implications of additional uses of the Rapid DNA project at will be observative develop additional esciences understand public and organizational opiniens, receptorized and inovied as about the Rapid DNA system, and conduct in Traffational Review Board for Hannar subjects Research to support the field testing of the Rapid DNA Protectypes.

SOW Task 2.0 until/2.2: Program Evaluation for DHS Biometric Exit Pilots (Base Period-- Task 2)

The future of U.S. immigration policy has been an issue of long discussion by officials in several Administrations, in the media, on Capitol Hill, and among the general public. Much of this discussion has focused on "overstays," i.e. individuals who enter the United States lawfully, but who stay longer than their authorized period of admission. One of the most common reasons for denial of a U.S. visa is that the visa applicant fails to convince the U.S. consular officer that he or she will adhere to the admission period.

Establishing an effective Validated Exit program would allow DHS to meet its mission goals to protect the American public and enforce immigration laws. DHS currently faces a difficult decision for a Validated Exit system. Exit data collection is necessary to ensure that the Department knows who has not left on time, but there are varying opinions on how to best collect and track this information. Statutory mandates require DHS to implement a *biometric* exit program, however, it is unclear if previously conducted pilots and studies have answered questions necessary to formulate a long-term path forward regarding biometric exit and subsequently Validated Exit.

The objective of this effort is to work with DHS and contractor staff to aggregate all previous DHS evaluations of operational concepts for biometric exit, analyze available requirements, lead a methodological review to assess the validity of previous studies, and lead the design of research and pilot activities for candidate technologies to answer research questions necessary to inform a formulate a long-term path forward regarding biometric exit and subsequently Validated Exit. The initial target customer is senior DHS leadership.

SOW Task 3.0 until3.3: Mobile Biometrics Project (Option Period 1-- Task 3 -- 12 Months)

The Homeland Security Act of2002 (Public Law 107-296) states that DHS S&T will "support basic and applied homeland security research to promote revolutionary changes in technologies; advance the development, testing and evaluation, and deployment of critical homeland security technologies; and accelerate the prototyping and deployment of technologies that would address homeland security vulnerabilities." Pursuant to this mission, the Resilient Systems Division (RSD) of the Department of Homeland Security (DHS) Science and Technology Directorate recognizes the need for commercially available hand-held biometric acquisition devices that can effectively collect data samples from subjects under a variety of conditions. The DHS is responsible for the biometric identification of persons to achieve the statutory and regulatory missions of the components. To accomplish these tasks, DHS components require the ability to positively identify/screen individuals in a secure, efficient, accurate, and timely manner. This ability encompasses the collection, storage, transmission, and receipt of biometric and biographic data to support the component missions. The capability must

ATTACHMENT 1		Page 5
epic.org	14-10-13-DHS-FOIA-20150402-Production	000245

be portable and operable in a wide variety of areas regardless of existing infrastructure (i.e. offshore, foreign and remote locations, ports of entry, detention centers... etc) and conditions (i.e. day/night, arid/humid climates, hot/cold temperature extremes). The capability must also accommodate operators with varying levels of technical ability and subjects with varying levels of physical ability.

The output from these mobile acquisition devices must be usable for searches of large-scale biometric databases (1 to many) and/or verification against a previously taken biometric sample (1 to 1). In order to assure maximum interoperability and efficiency of operation. DHS requires that the data output from these acquisition devices conform to pre-established standards. This program focuses on the integration of various biometric modules into a single hand-held device or system. Modules may include but are not limited to: a four finger slap module for fingerprints, visible wavelength camera (with optional flash/illuminator) for face acquisition, and a near-infrared, dual iris capture camera. Additional biometric modules such as for voice and other technologies, such as card readers, etc. may be included in the final hand-held system. Multiple mobile devices currently are being piloted in the field among various component agencies as well as police departments throughout the country. Several police departments have conducted independent evaluation prior to this SOW and will provide additional input into this evaluation process. The Vendor should be familiar with the U.S. National Institute of Standards and Technology (NIST) Mobile ID Device Best Practices Recommendation. Sept 2008 report and should design a plan for evaluating the implementation of this device in the field. The plan should describe how the data capture methods, signal processing (image normalization, segmentation, feature extraction, quality assessment, template creation, output record formatting...), matching algorithms for each modality, decision for match/no-match and the accuracy of displayed results function when the device is operationally deployed and should assess how the device users employ the device and interpret the information it provides to what effect. The design should provide for the assessment of the strengths and weaknesses of the device as operated in the field and to the extent possible should determine the degree to which the availability of the new multimodal biometric tool improves on prior identification technologies.

SOW Task 4.0 until 4.6: TSA Personnel Evaluation (Option Period 2-- Task 4 -- 12 Months)

The goal of this work is to enhance TSA OSO's existing Officer Performance Studies project in three areas through evaluation. These areas will improve aviation security, improve the efficiency and effectiveness of TSA's officer performance studies, improve TSA's officer training programs, and improve TSA's standard operating procedures at airport checkpoints. First, examine possible benefits of remote screening – having TSA X-ray operators perform searches away from the terminal (There are current conversations and debates with DHS and TSA about the cost and benefits of having TSA Officers work remotely. This task will examine whether performance is better or worse when conducted remotely). Second, enhance the assessment and training of specific search strategies used by different TSOs to see if some styles are more effective than others and will determine whether effective strategies can be trained). Thirdly, determine the impact on threat detection performance of specific Intel or briefing information provided by Superiors (This task will help determine on how best to inform TSA Officers of newly discovered threats so as to improve overall performance).

SOW Task 5.0 until 5.6: CBRNE Standards for First Responders (Optional Task 5 - 18 Months)

ATTACHMENT 1		Page 6
epic.org	14-10-13-DHS-FOIA-20150402-Production	000246

The goal of this task is to develop a method to track the operational health of the first responder community on CBRNE standards. The operational health of first responders with regard to CBRNE standards includes (1) the understanding of current CBRNE standards in existence. (2) the use and practical application of CBRNE standards. (3) gaps in and the practical need for CBRNE standards, and (4) prioritization of CBRNE standards development. The system should be based loosely on established, survey-based surveillance systems used for the ongoing collection, interpretation, and dissemination of public health data. Development of the system should occur in two phases. In the first phase, the Vendor will conduct a literature review, engage the stakeholders, develop the questionnaire, develop the sample frame and conduct a pilot test of up to nine respondents. In the second phase (which are possible future tasks), the first national wave of data collection, analysis and dissemination will occur. Phase II will provide baseline data for the system. In subsequent years ("waves"), the survey can be re-administered for the tracking of trends related to CBRNE standards.

RTI, in consultation with S&T, will clarify and focus the project research questions, with necessary special emphasis on the in-practice implications of the goals and objectives of the National Strategy for CBRNE Standards. RTI will then review and summarize available literature and completed studies on the current state of each of the six main goals of the National Strategy. Those goals are:

- 1. Establish an interagency group for CBRNE standards to promote the coordination of these standards among Federal, state, local, and tribal communities.
- 2. Coordinate and facilitate the development of CBRNE equipment performance standards and promote the use of standards for Federal, state, local, and tribal communities.
- 3. Coordinate and facilitate the development and adoption of interoperability standards for CBRNE equipment.
- 4. Promote enduring CBRNE standard operating procedures for Federal. State. local. and tribal use to improve National preparedness and response.
- 5. Establish voluntary CBRNE training and certification standards for the Federal. State. local. and tribal communities and promote policies that foster their adoption.
- 6. Establish a comprehensive CBRNE equipment testing and evaluation (T&E) infrastructure and capability to support conformity assessment standards.

RTI will include in the review print materials, official documents, media reports and other sources, as appropriate. S&T will assist with the identification and obtaining of documents. RTI will deliver a document briefly summarizing the literature review to S&T.

IV. STAFFING

See Attachment 2- HSAR 3052.215-70 Key Personnel or Facilities (DEC 2003), which identifies Project Manager and Chief Technical Representative as Key Personnel.

V. DELIVERABLES MILESTONE PAYMENT SCHEDULE

		Deliverables	
0W ask	Deliverable	Description	Due Date
1.0	Project Management Plan	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager.	7 months from Date of Award Base Period Task 1 Submitted and paid
1.1	Draft of Data Collection Instruments	Draft of all data collection instruments. Final version requires approval by the RSD Program Manager.	noad ficar good
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Biometric Exit Pilots	A summary of the previously conducted pilots as it stands. The Vendor will work with RSD to aggregate all previous DHS evaluations of operational concepts for biometric exit, and analyze available requirements.	3 months from Date of Award Base Period
		Task 2
Evaluation Framework for Biometric Exit Pilots	A methodological review to assess the validity of previous studies in answering research questions necessary to inform a DHS strategy for biometric exit	5 months from Date of Award Base Period Task 2
Final Report for Biometric Exit Pilots	A formal report that communicates a long-term path forward for the program evaluation that is specifically tailored to inform senior DHS leadership decisions. The length of the final report is anticipated to about 25 pages, including an executive summary of no more than two pages but excluding appendices, if any. The final version requires approach by the RSD Provide Manager	6 months from Date of Award Base Period Task 2
Baseline Assessment for Mobile Biometrics Project	A summary of the program as it stands. Final version requires approval by the RSD Program Manager	4 months from exercising Option Period
Evaluation Framework for Mobile Biometries	A path forward for the program evaluation that is specifically tailored to the program and technology being evaluated. Final version requires approval by the RSD Program Manager.	Option Period Task 3 6 months from exercising Option Period Option Period Task 3
Monitoring and Evaluation of Mobile Biometrics Project	Implementation and monitoring of the evaluation framework.	4 to 5 months from exercising Option Period
Final Report for Mobile Biometrics Project	A formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to about 25 pages, including an executive summary of no more than two pages. The final version requires approval by the RSD Program Manager.	Option Period Task 3 12 months from exercising Option Period Option Period Task 3
Project Management Plan	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager.	I month from exercising Option Period. Option Period Task 4
Prepare Experiments	A path forward for the personnel performance evaluation that is specifically tailored to the areas being evaluated. Final version requires approval by the RSD Program Manager.	3 months from exercising Option Period.
Test Subjects	Implementation and monitoring of the evaluation framework. Collect and analyze data.	Option Period Task 4 11 months from exercising Option Period.
Prepare manuscripts/presentations	Manuscripts and publications for both scientific audiences (where appropriate) and TSA stakeholders that communicates the evaluation procedures and findings to relevant audiences. The final versions require approval by the RSD Program Manager.	Option Period Task 4 12 months from exercising Option Period. Option Period Task 4
	For Biometric Exit Pilots Final Report for Biometric Exit Pilots Baseline Assessment for Mobile Biometrics Project Evaluation Framework for Mobile Biometrics Monitoring and Evaluation of Mobile Biometrics Project Final Report for Mobile Biometrics Project Project Management Plan Prepare Experiments Test Subjects Prepare	for Biometric Exit Pilots answering research questions necessary to inform a DHS strategy for biometric exit Final Report for Biometric Exit Pilots A formal report that communicates a long-term path forward for the program evaluation that is specifically tailored to inform senior DHS leadership decisions. The length of the final report is anticipated to about 25 pages, including an executive summary of no more than two pages but evcluding appendices, if any, The final version requires approval by the RSD Program Manager. Baseline Assessment for Mobile Biometrics Project A summary of the program as it stands. Final version requires approval by the RSD Program Manager. Evaluation Framework for Mobile Biometrics A path forward for the program evaluation that is specifically tailored to the program and technology being evaluated. Final version requires approval by the RSD Program Manager. Monitoring and Evaluation of Mobile Biometrics Project Implementation and monitoring of the evaluation framework. Final Report for Mobile Biometrics Project A formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to about 25 pages, including an executive summary of no more than two pages. The final version requires approval by the RSD Program Manager. Project Management Plan A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager. Prepare Experiments A path forward for the personnel performance evaluation that is specifically tailored to the areas being eval

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4.4	Quarterly Reports	Quarterly report formats will be approved as part of the PMP (Task 4.0) but will, at a minimum, include budget expenditure and task progress.	3. 6. & 9 months from (b) exercising Option Period. Option Period Task 4
4.5	Draft Final Reports	A draft version of a final report that communicates the evaluation procedures and findings to relevant audiences.	11 months from exercising Option Period.
4.6	Final Reports	A formal report that communicates the evaluation procedures and findings to relevant audiences. The final version requires approval by the RSD Program Manager.	Option Period Task 4 12 months from exercising Option Period. Option Period Task 4
5.0	Project Management Plan	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager.	1 month from exercising Option. Optional Task 5
5.1	Review of Literature	A review of relevant literature in the area of First Responder acquisition, training, and use of CBRNE Equipment,	3 months from exercising Option. Optional Task 5
5.2	Quarterly Reports	Quarterly report formats will be approved as part of the PMP (Task 5.0) but will, at a minimum, include budget expenditure and task progress.	3, 6, 9, 12 & 15 months from exercising Option. Optional Task 5
5.3	Draft Survey Instrument	Draft of all data collection instruments. Final version requires approval by the RSD Program Manager.	6 months from exercising Option. Optional Task 5
5.4	Summary of Data Collection Activities	A summary report of Phase I data collection activities and observations.	9 months from exercising Option. Optional Task 5
5.5	Draft Final Report	A draft formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to be about 25 pages, including an executive summary of no more than two pages but excluding appendices, if any. The draft final version requires approval by the RSD Program Manager.	16 months from exercising Option. Optional Task 5
5.6	Final Report	A formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to be about 25 pages, including an executive summary of no more than two pages but excluding appendices, if any. The final version requires approval by the RSD Program Manager.	18 months from exercising Option. Optional Task 5

*Due to rounding, grand total at Firm Fixed Price is (b)(4)

* COR shall determine, at his discretion, how long after receipt of the draft deliverable RTI has to deliver the final version and how long the Government will review the draft, before providing comments.

VI. **Other Task Order Details**

- 1. Period of Performance. The task order period of performance is from 14 September 2011 through 28 Holomary 2015.
- 2. Travel. Domestic travel on the part of the Vendor's staff may be required in the performance of the

ATTACHMENT 1		Page 10
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duties that are listed herein. It is expected that the Vendor will reimburse non-government participants for those travel expenses that they might incur.

- 3. DHS-Furnished Information.
 - a. DHS will provide certain DHS information, materials, and forms unique to DHS to the vendor to support certain tasks under this SOW.
 - b. The DHS S&T Contracting Officer's Representative, identified in this SOW, will be the point of contact (POC) for the identification of any required information to be supplied by DHS.
 - c. The Vendor will prepare any documentation according to the guidelines provided by DHS.
- 4. Place of Performance.
 - a. The Vendor will perform the work under this SOW at their place of business and the workshop location.
- 5. DHS-Furnished Property. DHS property will not be provided to the Vendor.
- 6. Deliverables. The Vendor will provide all deliverables identified in this SOW directly to the task-specific DHS S&T Technical Representatives and to the S&T Contracting Officer.
- 7. Program Status Report. The Vendor will deliver monthly program status reports. The reports will be submitted on the 15th day of the month. The reports shall include the following:
 - a. Summary of progress during the reporting period (including any significant technical information).
 - b. Unanticipated technical or management problems of significance.
 - c. Problems anticipated in future reporting periods.
 - d. Summary of important meetings, briefings, trips and conferences during the period of the report and those planned in the following period.

All reports shall be submitted to the task-specific CORs and to the DHS S&T Contracting Officer electronically.

- 8. Funding Requirements. DHS will provide funding that is outlined in the Task Order, at the discretion of the Government, subject to the availability of funds.
- 9. Security Requirements.
 - a. All work performed under this SOW is unclassified unless otherwise specified by DHS.
 - b. If classified work is required under this SOW, DHS will provide specific guidance to the Vendor as to which work will be conducted in a classified manner and at which classification level. The Vendor will also adhere to other applicable Government orders, guides, and directives pertaining to classified work. This SOW may require access to information at the unclassified level.
 - c. The Contractor shall not publish, permit to be published, or distribute for public consumption, any information, oral or written, concerning the results or conclusions made pursuant to the performance of this Task Order, without the prior written consent of the Contracting Officer. An electronic or printed copy of any material proposed to be published or distributed shall be submitted to the Contracting Officer.

VII. Points of Contact

Contracting Officer: Duane Schatz Science and Technology Acquisitions Division Office of Procurement Operations Department of Homeland Security Washington, DC 20582

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Contracting Officer's Representative (COR): Richard Legault, Ph.D. Resilient Systems Division Science and Technology Directorate Department of Homeland Security Washington, DC 20582

DHS S&T Invoicing: U.S. DHS, ICE Attn: S&T RSD Invoice Burlington Finance Center P.O. Box 1000 Williston, VT 05495-1000 invoicesat.consolidation@ice.dhs.gov

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(A)	SJPPLIES/SERVICES (H)	QUANTITY SCI	UNIT (D)	UNIT PRICE	AMOUNT (F)
	The purpose of this task order modification is to extend the deliverables due dates for sublasks 1.2s, 1.2, 1.4, 1.5, 1.7, 1.8, 1.9, 1.11, 1.11, 4.5, 4.6, and extend the period of performance through September 13, 2015 at no additional dost to the Severiment, in accordance with the attached Statement of Work (SOW) (12 pages).				
	All other terms and conditions remain unchanged. AAP Number: N/A DC/DPAS Rating: NONE Period of Performance: 09/14/2011 to 09/13/2015				

Statement of Work for Program Evaluations

U.S. Department of Homeland Security Science & Technology Directorate Resilient Systems Division Biometrics

Task Order HSHQDC-11-F-00087 Modification P00006 PR No. RSRS-14-00094

This Statement of Work (SOW) outlines the activities that are involved in acquiring technical and consulting services in the social, behavioral, and economic sciences. These services will be responsible for addressing the methods, models and technologies to conduct program evaluations on biometric technologies within the Resilient Systems Division (RSD) of the Science & Technology Directorate (S&T).

I. BACKGROUND

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge science and technology in its quest to make America safer. The DHS S&T is tasked with advancing the scientific, engineering, and technological resources of the United States and leveraging these resources into tools to help protect the homeland. The Resilient Systems Division (RSD) applies the social and behavioral sciences in order to improve the detection, analysis, and understanding of threats posed by individuals, groups, and radical movements; to support the preparedness, response and recovery of communities impacted by catastrophic events; and to advance national security by integrating human factors into homeland security science and technologies.

The Quadrennial Homeland Security Review (2010) has identified Maturing and Strengthening the Homeland Security Enterprise (HSE) as a key DHS programmatic goal. DHS S&T provides those technologies, processes and expertise to the HSE in order to assist them in fulfilling their missions. However, DHS S&T has no formal, scientifically sound, program evaluation process to ensure that the mission is being met in a meaningful and efficient manner. Current S&T evaluation programs only test and consider the quality of the technology to be transitioned. A program evaluation approach that places a technology or other innovation within an operational context, and thus enables decision makers to assess the entire operational approach in which the technology or innovation is embedded, ultimately improving technology transition to the customer component agencies.

This SOW summarizes the work that is planned for program evaluations in DHS S&T. This work will be conducted through engaging the technology stakeholders, focusing the evaluation design on the technology and the purpose of the overall operational program, gathering and analyzing evidence, and producing a final report that will result in an improved program. Those lessons learned will help inform future DHS S&T program conceptualization and execution, and will lead to improvement in the quality and effectiveness of programs transitioned to customer component agencies.

ATTACHMENT 1

II. SCOPE OF WORK

During the base period of performance, the Vendor will conduct program evaluations on the following DHS S&T programs: DHS Biometric Exit Pilots and the Rapid DNA project. In addition, there is an option for an evaluation of the Mobile Biometrics Project, an option for the evaluation of search capabilities for the Transportation Security Administration and an option for an evidence-based evaluation of Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) Standards for First Responders. The Vendor will develop and utilize a scientifically sound method to perform the following tasks:

- •:• Identify and engage stakeholders:
- •:• Determine evaluation needs;
- •:• Develop measures of activities and outcomes:
- •:• Identify, assess and gather data:
- •:• Analyze the data;
- ... Reach operationally relevant conclusions: and
- -: Ensure the use and sharing of lessons learned.

Under this effort, the Vendor will be responsible for performing the following activities:

- ·:• Development of measures of progress:
- •:• Assessment of the impact and effectiveness of the technology, performance, or innovation in the operational environment and identification of areas of improvement;
- •:• Development of a baseline assessment of the operational program to inform the creation of an evaluation framework that is specifically tailored to the program, personnel performance or the technology being evaluated and:
- •:• Preparation of a final report identifying lessons learned and provides both S&T and the operating agency with a road map for building on the evaluation's results. The report will be provided to the program managers of the component agency, RSD, and other DHS stakeholders.

III. SPECIFIC TASKS

The specific tasks that are involved in the evaluation of DHS S&T technologies are provided in the following paragraphs:

Identify and Engage Stakeholders

In consultation with RSD, the Vendor will identify and engage relevant stakeholders. These include those involved in program operations, those served or affected by the program, and the primary users of the evaluation (those in a position to make decisions about the program). Stakeholders will be systematically identified in conjunction with RSD. Stakeholders will have the purpose of the program evaluation explained to them, and how their participation in the process fits into the evaluation as a whole.

ATTACHMENT 1

Description of the Program

The Vendor, in consultation with RSD, will specifically identify the purpose of the project and the research questions that it intends to address, with necessary special emphasis on the in-practice implications of the technology, performance, or innovation on programmatic goals and objectives. The Vendor will then conduct a baseline assessment on the current program implementation or previously conducted pilots.

Focus Evaluation Design

The Vendor will then tailor the evaluation to the specific program and purpose of the evaluation. The Vendor will need to clarify who will use the evaluation results, and how those results will be used. The Vendor will also consider the context of the program in order to determine the appropriate evaluation strategy that is best suited for the specific program. Where feasible and cost effective, the developed field experimental methods will be used by the Vendor, unless RSD approves another approach.

Identify, Assess, and Gather Data

As part of the design stage, the Vendor will responsible for the assessment of data needs and availability along with obstacles to and the necessary costs of data acquisition. The normal expectation from the Government is that both quantitative and qualitative data may be relevant to the conduct of an evaluation. Data of only one type will be used and collected if explained to the satisfaction of RSD. To keep costs low, data gathering by the Vendor will utilize existing program data to the extent feasible. To the extent that privacy and other rules permit, the data will be stored in a form that will allow the agency or S&T to reuse it in any follow-on or future work as appropriate without the payment of license or other fees.

Analyze Data and Reach Conclusions

After the data have been gathered, the Vendor will analyze the data using appropriate statistical and qualitative methods in order to assess program performance and to identify any gaps or weaknesses in or strengths of the technology as operationally applied. The Vendor will also be responsible for tying any conclusions to program standards of performance and to the extent there are weaknesses in the operational application of the technology or innovation, the Vendor will propose mitigation strategies.

Final Report

The Vendor will generate a final written report and provide any accompanying presentation slides, that sets forth the research goals, explains the research strategies, describes the research design as implemented and the data used with a discussion of their strengths and limitations, reports the methods and results of the analysis, including, where appropriate, tables, key statistical outputs or other information summaries and recommendations for actions in the form of a final report. The report will also include a brief executive summary and, if appropriate, statistical tables, summaries of the qualitative data or other appendices. The copyright for the report will be held by DHS.

ATTACHMENT 1

This report will be made available to the program manager(s) of the component agency and to RSD. Any additional dissemination of the report will be made at the discretion of RSD. The basis for the recommendations, their rationales and the data behind them will be explained by the Vendor to the responsible program manager(s) and any relevant stakeholders or other potential users that have been identified by the program manager. Up to five such briefings of up to 90 minutes in length may be requested by RSD.

Projects to be Evaluated

Base Period of the Task Order -- the Vendor will focus on the Rapid DNA Project (Task 1) and DHS Biometric Exit Pilots (Task 2). Option Period 1-- the Vendor will design the evaluation framework of the Mobile Biometrics Project (Task 3), upon option exercise. Option Period 2 the Vendor will design the evaluation framework of the TSA Personnel Evaluation Project (Task 4), upon option exercise. Optional Task 5 the Vendor will design the evaluation framework of the CBRNE Standards for First Responders project (Task 5). All projects are described in additional detail below:

SOW Task 1.0 until/1.11: Program Evaluation for Rapid DNA Project (Base Period-- Task I)

United States Citizenship and Immigration Service (USCIS) currently uses fingerprints to check for any criminal history or immigration violations on benefit applicants, but these biometries do not determine if persons are related to one another. However, DNA (deoxyribonucleic acid) does allow for the determination of family relationships since children receives half of their DNA from each parent. Until recently, however, it required a laboratory full of equipment and a highly trained forensic analyst to interpret the results. Sending a sample to a lab and waiting for it to be processed could take weeks to months at the cost of \$300 to \$400 per sample. Rapid and low-cost DNA processing permits efficiencies in the processing of valid applicants, reduces the costs associated with processing, deters fraud in applications, and ultimately increases the number of legal immigrants admitted into the country.

Rapid and low-cost DNA processing may also prevent fraud and illegal profiteering with regard to kinship benefits. USCIS has identified the need for accurate DNA analysis to test kinship that would take less than one hour at a cost of under \$100. This testing needs to be done in field locations, rather than at external labs, on a desktop-size device which is easy for the adjudicator to operate.

In 2008, a DNA screening pilot program that tested DNA for kinship of hundreds of cases involving family reunification in East Africa found that a considerable number of kinship claims were contradicted by DNA testing. Currently, DNA analysis to determine identity and kinship is not widely feasible because of cost and time considerations. With document fraud an increasing concern for USCIS adjudicators, a technology that could provide validation of family relationship rapidly and accurately while in the field would help ensure the efficacy of the process. The primary objective is to verify family relationships (kinship), but Rapid-DNA will also allow the identification of known criminals among those seeking asylum or immigration, verify relationships in overseas adoptions, and provide for family reunification in mass-casualty situations. The initial target customer is USCIS Refugee. Asylum and International Operations Directorate

In 2012, the Rapid DNA program identified additional objectives to broaden the potential uses associated with the Rapid DNA system in the Homeland Security Enterprise. In order to better understand the implications of additional uses of the Rapid DNA project, it will be necessary to develop additional use-cases; understand public and organizational opinions, acceptance, and knowledge about the Rapid DNA system: and conduct an Institutional Review Board for Human Subjects Research to support the field testing of the Rapid DNA Prototypes.

SOW Task 2.0 until/2.2: Program Evaluation for DHS Biometric Exit Pilots (Base Period-- Task 2)

The future of U.S. immigration policy has been an issue of long discussion by officials in several Administrations, in the media, on Capitol Hill, and among the general public. Much of this discussion has focused on "overstays," i.e. individuals who enter the United States lawfully, but who stay longer than their authorized period of admission. One of the most common reasons for denial of a U.S. visa is that the visa applicant fails to convince the U.S. consular officer that he or she will adhere to the admission period.

Establishing an effective Validated Exit program would allow DHS to meet its mission goals to protect the American public and enforce immigration laws. DHS currently faces a difficult decision for a Validated Exit system. Exit data collection is necessary to ensure that the Department knows who has not left on time, but there are varying opinions on how to best collect and track this information. Statutory mandates require DHS to implement a *biometric* exit program, however, it is unclear if previously conducted pilots and studies have answered questions necessary to formulate a long-term path forward regarding biometric exit and subsequently Validated Exit.

The objective of this effort is to work with DHS and contractor staff to aggregate all previous DHS evaluations of operational concepts for biometric exit, analyze available requirements, lead a methodological review to assess the validity of previous studies, and lead the design of research and pilot activities for candidate technologies to answer research questions necessary to inform a formulate a long-term path forward regarding biometric exit and subsequently Validated Exit. The initial target customer is senior DHS leadership.

SOW Task 3,0 until3.3: Mobile Biometrics Project (Option Period 1-- Task 3 -- 12 Months)

The Homeland Security Act of 2002 (Public Law 107-296) states that DHS S&T will "support basic and applied homeland security research to promote revolutionary changes in technologies: advance the development, testing and evaluation, and deployment of critical homeland security technologies: and accelerate the prototyping and deployment of technologies that would address homeland security vulnerabilities." Pursuant to this mission, the Resilient Systems Division (RSD) of the Department of Homeland Security (DHS) Science and Technology Directorate recognizes the need for commercially available hand-held biometric acquisition devices that can effectively collect data samples from subjects under a variety of conditions. The DHS is responsible for the biometric identification of persons to achieve the statutory and regulatory missions of the components. To accomplish these tasks. DHS components require the ability to positively identify/screen individuals in a secure. efficient, accurate, and timely manner. This ability encompasses the collection, storage, transmission, and receipt of biometric and biographic data to support the component missions. The capability must



be portable and operable in a wide variety of areas regardless of existing infrastructure (i.e. offshore, foreign and remote locations, ports of entry, detention centers... etc) and conditions (i.e. day/night, arid/humid climates, hot/cold temperature extremes). The capability must also accommodate operators with varying levels of technical ability and subjects with varying levels of physical ability.

The output from these mobile acquisition devices must be usable for searches of large-scale biometric databases (1 to many) and/or verification against a previously taken biometric sample (1 to 1). In order to assure maximum interoperability and efficiency of operation. DHS requires that the data output from these acquisition devices conform to pre-established standards. This program focuses on the integration of various biometric modules into a single hand-held device or system. Modules may include but are not limited to: a four finger slap module for fingerprints, visible wavelength camera (with optional flash/illuminator) for face acquisition, and a near-infrared, dual iris capture camera. Additional biometric modules such as for voice and other technologies, such as card readers, etc. may be included in the final hand-held system. Multiple mobile devices currently are being piloted in the field among various component agencies as well as police departments throughout the country. Several police departments have conducted independent evaluation prior to this SOW and will provide additional input into this evaluation process. The Vendor should be familiar with the U.S. National Institute of Standards and Technology (NIST) Mobile ID Device Best Practices Recommendation, Sept 2008 report and should design a plan for evaluating the implementation of this device in the field. The plan should describe how the data capture methods, signal processing (image normalization, segmentation, feature extraction, quality assessment, template creation, output record formatting...), matching algorithms for each modality, decision for match/no-match and the accuracy of displayed results function when the device is operationally deployed and should assess how the device users employ the device and interpret the information it provides to what effect. The design should provide for the assessment of the strengths and weaknesses of the device as operated in the field and to the extent possible should determine the degree to which the availability of the new multimodal biometric tool improves on prior identification technologies.

SOW Task 4.0 until 4.6: TSA Personnel Evaluation (Option Period 2-- Task 4 -- 12 Months)

The goal of this work is to enhance TSA OSO's existing Officer Performance Studies project in three areas through evaluation. These areas will improve aviation security, improve the efficiency and effectiveness of TSA's officer performance studies, improve TSA's officer training programs, and improve TSA's standard operating procedures at airport checkpoints. First, examine possible benefits of remote screening – having TSA X-ray operators perform searches away from the terminal (There are current conversations and debates with DHS and TSA about the cost and benefits of having TSA Officers work remotely. This task will examine whether performance is better or worse when conducted remotely). Second, enhance the assessment and training of specific search strategies employed by TSA Officers when conducting X-ray screening (This task will assess search strategies used by different TSOs to see if some styles are more effective than others and will determine whether effective strategies can be trained). Thirdly, determine the impact on threat detection performance of specific Intel or briefing information provided by Superiors (This task will help determine on how best to inform TSA Officers of newly discovered threats so as to improve overall performance).

SOW Task 5.0 until 5.6: CBRNE Standards for First Responders (Optional Task 5 - 18 Months)

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The goal of this task is to develop a method to track the operational health of the first responder community on CBRNE standards. The operational health of first responders with regard to CBRNE standards includes (1) the understanding of current CBRNE standards in existence, (2) the use and practical application of CBRNE standards. (3) gaps in and the practical need for CBRNE standards, and (4) prioritization of CBRNE standards development. The system should be based loosely on established, survey-based surveillance systems used for the ongoing collection, interpretation, and dissemination of public health data. Development of the system should occur in two phases. In the first phase, the Vendor will conduct a literature review, engage the stakeholders, develop the questionnaire, develop the sample frame and conduct a pilot test of up to nine respondents. In the second phase (which are possible future tasks), the first national wave of data collection, analysis and dissemination will occur. Phase II will provide baseline data for the system. In subsequent years ("waves"), the survey can be re-administered for the tracking of trends related to CBRNE standards.

RTI, in consultation with S&T, will clarify and focus the project research questions, with necessary special emphasis on the in-practice implications of the goals and objectives of the National Strategy for CBRNE Standards. RTI will then review and summarize available literature and completed studies on the current state of each of the six main goals of the National Strategy. Those goals are:

- 1. Establish an interagency group for CBRNE standards to promote the coordination of these standards among Federal, state, local, and tribal communities.
- 2. Coordinate and facilitate the development of CBRNE equipment performance standards and promote the use of standards for Federal, state, local, and tribal communities.
- 3. Coordinate and facilitate the development and adoption of interoperability standards for CBRNE equipment.
- 4. Promote enduring CBRNE standard operating procedures for Federal, State, local, and tribal use to improve National preparedness and response.
- 5. Establish voluntary CBRNE training and certification standards for the Federal, State, local, and tribal communities and promote policies that foster their adoption.
- 6. Establish a comprehensive CBRNE equipment testing and evaluation (T&E) infrastructure and capability to support conformity assessment standards.

RTI will include in the review print materials, official documents, media reports and other sources, as appropriate. S&T will assist with the identification and obtaining of documents. RTI will deliver a document briefly summarizing the literature review to S&T.

IV. STAFFING

See Attachment 2- HSAR 3052.215-70 Key Personnel or Facilities (DEC 2003), which identifies Project Manager and Chief Technical Representative as Key Personnel.

V. DELIVERABLES MILESTONE PAYMENT SCHEDULE

		Deliverables		
SOW Task	Deliverable	Description	Due Date	Payment
1.0	Project Management Plan	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager.	7 months from Date of Award Base Period Task 1 Submitted and paid	(b)(4)
1.1	Draft of Data Collection Instruments	Draft of all data collection instruments. Final version requires approval by the RSD Program Manager.	1 month from award	(b)(4)
l.la	Final version of Data Collection Instruments	Final versions of all data collection instruments. Final version requires approval by the RSD Program Manager.	4 months from award	(b)(4)
1.2	Draft of Evaluation Framework for Rapid DNA Project	A path forward for the program evaluation that is specifically tailored to the DHS program and technology being evaluated. Final version requires approval by the RSD Program Manager.	1 month from award	(b)(4)
1.2a	Final Evaluation Framework for Rapid DNA Project	A path forward for the program evaluation that is specifically tailored to the DHS program and technology being evaluated. Final version requires approval by the RSD Program Manager.	12 months from award	(b)(4)
1.3	Summary of Data Collection Activities	A summary report of data collection activities and observations	18 menths from award	(b)(4)
1.4	Institutional Review Board for Human Subjects Research	An IRB review will be conducted for the field test of the Rapid DNA project.	6 months from award	(b)(4)
1.5	Update Project Management Plan	Update PMP to reflect additional sub-tasks. The final version requires approval by the RSD Program Manager.	5 montils from date of award	(b)(4)
1.6	Review of public / organizational acceptance literature	A review of relevant literature in area of public and organizational opinions, acceptance, and knowledge about the Rapid DNA system. The final version requires approval by the RSD Program Manager.	3 months from award	(b)(4)
1.7	Draft of Survey Instruments	A draft of all survey instruments for public and organizational acceptance of Rapid DNA technology. Final version requires approval by the RSD Program Manager.	10 months from date of gward	(b)(4)
1.8	Develop Sampling Scheme	Develop sampling plan for relevant respondents (public and organizational). The target population, sampling frame, and final sampling scheme require approval by the RSD Program Manager.	14 months from award	(b)(4)
1.9	Administration Survey Instruments	A draft of all survey instruments for public and organizational acceptance of Rapid DNA technology. Final version requires approval by the RSD Program Manager.	12 months from date of award.	(b)(4)

.10	Analysis of results from all acceptance evaluation	Conduct analysis of all data developed under the subtasks 1.5-1.9 of this task.	18 months from date of award
.11	Final Report for Rapid DNA Project	A formal report that communicates the evaluation procedures and findings to relevant audiences to include all tasks. The length of the final report is anticipated to about 45 pages, including an executive summary of no more than two pages but excluding appendices, if any. The final version requires approval by the RSD Program Manager.	09.12.2015
2.0	Baseline Assessment for Biometric Exit Pilots	A summary of the previously conducted pilots as it stands. The Vendor will work with RSD to aggregate all previous DHS evaluations of operational concepts for biometric exit, and analyze available requirements.	3 months from Date of Award Base Period Task 2
2.1	Evaluation Framework for Biometric Exit Pilots	A methodological review to assess the validity of previous studies in answering research questions necessary to inform a DHS strategy for biometric exit	5 months from Date of Award Base Period Task 2
2.2	Final Report for Biometric Exit Pilots	A formal report that communicates a long-term path forward for the program evaluation that is specifically tailored to inform senior DHS leadership decisions. The length of the final report is anticipated to about 25 pages, including an executive summary of no more than two pages but excluding appendices, if any. The final version requires approval by the RSD Program Manager.	6 months from Date of Award Base Period Task 2
3.0	Baseline Assessment for Mobile Biometrics Project	A summary of the program as it stands. Final version requires approval by the RSD Program Manager	4 months from exercising Option Period
3.1	Evaluation Framework for Mobile Biometrics	A path forward for the program evaluation that is specifically tailored to the program and technology being evaluated. Final version requires approval by the RSD Program Manager.	Option Period Task 3 6 months from exercising Option Period
3.2	Monitoring and Evaluation of Mobile Biometrics Project	Implementation and monitoring of the evaluation framework.	Option Period Task 3 4 to 5 months from exercising Option Period Option Period Task 3
3.3	Final Report for Mobile Biometrics Project	A formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to about 25 pages, including an executive summary of no more than two pages. The final version requires approval by the RSD Program Manager.	12 months from exercising Option Period Option Period Task 3
4.0	Project Management Plan	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager.	1 month from exercising Option Period. Option Period Task 4
4.1	Prepare Experiments	A path forward for the personnel performance evaluation that is specifically tailored to the areas being evaluated. Final version requires approval by the RSD Program Manager.	3 months from exercising Option . Period.
4.2	Гest Subjects	Implementation and monitoring of the evaluation framework. Collect and analyze data.	Option Period Task 4 11 months from exercising Option Period. Option Period Task 4
4.3	Prepare manuscripts/presentations	Manuscripts and publications for both scientific audiences (where appropriate) and TSA stakeholders that communicates the evaluation procedures and findings to relevant audiences. The final versions require approval by the RSD Program Manager.	12 months from exercising Option Period.

4.4	Quarterly Reports	Quarterly report formats will be approved as part of the PMP (Task 4.0) but will, at a minimum, include budget expenditure and task progress.	3. 6. & 9 months from <u>(r</u> exercising Option Period. Option Period Task 4	b)(4)
4.5	Draft Final Reports	A draft version of a final report that communicates the evaluation procedures and findings to relevant audiences.	15 months from exercising Option Period.	
4.6	Final Reports	A formal report that communicates the evaluation procedures and findings to relevant audiences. The final version requires approval by the RSD Program Manager.	Option Period Task 4 Demonths from exercising Option Period. Option Period Task 4	
5.0	Project Management Plan	A project management plan that will accomplish the program's objectives as outlined by RSD personnel. The final version requires approval by the RSD Program Manager.	I month from exercising Option. Optional Task 5	
5.1	Review of Literature	A review of relevant literature in the area of First Responder acquisition, training, and use of CBRNE Equipment.	3 months from exercising Option. Optional Task 5	
5.2	Quarterly Reports	Quarterly report formats will be approved as part of the PMP (Task 5.0) but will, at a minimum, include budget expenditure and task progress.	3. 6. 9. 12 & 15 months from exercising Option. Optional Task 5	
5. 3	Draft Survey Instrument	Draft of all data collection instruments. Final version requires approval by the RSD Program Manager.	6 months from exercising Option. Optional Task 5	
5.4	Summary of Data Collection Activities	A summary report of Phase I data collection activities and observations.	9 months from exercising Option. Optional Task 5	
5.5	Draft Final Report	A draft formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to be about 25 pages, including an executive summary of no more than two pages but excluding appendices, if any. The draft final version requires approval by the RSD Program Manager.	16 months from exercising Option. Optional Task 5	
5.6	Final Report	A formal report that communicates the evaluation procedures and findings to relevant audiences. The length of the final report is anticipated to be about 25 pages, including an executive summary of no more than two pages but excluding appendices, if any. The final version requires approval by the RSD Program Manager.	18 months from exercising Option. Optional Task 5	

*Due to rounding, grand total at Firm Fixed Price is $\frac{(b)(4)}{2}$

* COR shall determine, at his discretion, how long after receipt of the draft deliverable RTI has to deliver the final version and how long the Government will review the draft, before providing comments.

VI. Other Task Order Details

- 1. Period of Performance. The task order period of performance is from 14 September 2011 through 13 September 2015.
- 2. Travel. Domestic travel on the part of the Vendor's staff may be required in the performance of the

ATTACHMENT 1

14-10-13-DHS-FOIA-20150402-Production