



**Privacy Impact Assessment  
for the**

**Rail Security Pilot Study Phase II at PATH**

**July 12, 2006**

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## Introduction

Transit systems are attractive and visible targets for terrorism because they carry large numbers of people in concentrated, highly repetitious, and predictable patterns that are designed for easy access. In response to events in Madrid and London that demonstrated that commuter rail and mass transit are realistic terrorist targets, the Department of Homeland Security (DHS) Office of Science and Technology is implementing a Rail Security Pilot (RSP) under the auspices of congressional mandate found in Conference Report (H. Rep 108-774), "Making Appropriations for the Department of Homeland Security for the Fiscal Year Ending September 30, 2005, and for Other Purposes (pg. 79).

The RSP objective is to develop a credible "response package" that could be quickly and efficiently implemented in response to an event or as the result of intelligence indicating a possible threat exists where explosives would be used in a commuter rail or mass transit venue. At a minimum, the resultant response package will consist of a set of validated concepts of operations (CONOPS), the endorsement of equipment, and a targeted and refined training package. To develop the response package, the RSP will evaluate the effectiveness of off-the-shelf and prototype explosives detection and mitigation capabilities to counter two distinct threats: 1) the suicide bomber and 2) the leave-behind bomb. An important feature of this pilot is the ability to rapidly deploy operational capabilities with minimal set-up costs, which is ideal for responding to intelligence-based monitoring or establishing high-visibility operations for deterrence.

The RSP is divided into two phases. Phase I, conducted in February 2006, did not require the collection of personally identifiable information and evaluated existing countermeasures using aviation security methods that could be implemented immediately. Phase I technologies included walk through metal detectors and dual-energy X-ray machines that were calibrated for the rail threat basis (i.e., large amounts of metal typical of that found in suicide bomber vests and large quantities of explosive capable of damaging key infrastructure).

Phase II is evaluating emerging technologies with varying technological maturity. Phase II activities will occur in several locations and this Privacy Impact Assessment only covers the activities to occur at the Port Authority Trans-Hudson New York New Jersey (PATH NY/NJ). Successful completion of the RSP will provide a combination of technologies, routine operating protocols, and appropriate training curriculum that minimizes the burden of responding to an explosive attack on the rail sector. Ideally, the RSP will offset the increased security burden on law enforcement personnel through increased police effectiveness in their traditional mission areas.

The specific technologies to be fielded with a potential privacy impact include: 1) motion video surveillance cameras, 2) still photography, 3) whole-body infrared images, 4) whole-body



millimeter-wave, and 4) whole body terahertz images. Additionally, personal articles may be inspected, either by law enforcement officers (LEO) or by trained test conductors. A summary of the Phase II screening equipment with potential privacy issues is provided in Table 1 below.

Table 1. Summary of Phase II Screening Equipment with Potential Privacy Issues

Port Authority/ Station	Technology	Operations
Port-Authority Trans Hudson (PATH)/ Exchange Place Station	<ul style="list-style-type: none"> <li>• Passive<sup>1</sup> millimeter wave imaging</li> <li>• Active<sup>2</sup> millimeter wave imaging</li> <li>• Passive terahertz imaging</li> <li>• Infra red imaging</li> <li>• Standard still and surveillance camera images</li> </ul>	<ul style="list-style-type: none"> <li>• Imaging and detection technology identifies objects hidden beneath clothing</li> <li>• Still and motion video technology show facial images</li> </ul>

## Section 1.0 Information collected and maintained

### 1.1 What information is to be collected?

Collected information will be in the form of images of individual commuters traversing the detection area to assess the potential presence of concealed explosive threats. Technologies will include traditional motion video and still photography images, infrared (IR) thermography images, millimeter-wave (MMW) images, and terahertz (THz) images. Both whole body and facial images will be collected depending on the technology system/concept of operations (CONOPS).

- IR Thermography images (passive): Imaging using IR thermography relies upon the IR energy naturally emitted and reflected by the human body. IR energy emitted from the body is absorbed and then re-emitted by clothing. Concealed objects between the body and clothing are observed with IR imaging systems as a thermal contrast (temperature difference).

<sup>1</sup> Passive means the imaging technology uses only what is available to create the image (like non-flash photography)

<sup>2</sup> Active means the imaging technology illuminates the subject to create the image (like flash photography)



- Millimeter-wave images (active and passive): Passive MMW technology uses natural MMW illumination emitted and reflected from a person and the surrounding environment to produce an image. Active MMW illuminates a subject with MMW energy and produces images due to reflections from the body.
- Terahertz images (passive): Passive terahertz imaging is very similar to millimeter wave imaging with a slight shift in measured electromagnetic energy naturally emitted from the human body

Images will only contain date/time or sequence number labels – no other identifying information will be collected.

## **1.2 From whom is information collected?**

All rail commuters who pass into the detection area will be subject to image analyses for concealed body-borne explosive threats as they progress from entrance turnstiles toward subway platforms.

## **1.3 Why is the information being collected?**

The purpose of the RSP is to assess the merits of available, emerging technologies with security system CONOPS to mitigate the threat of a body-borne explosive device or leave-behind bomb. The imaging information provides an indication of a potential threat that requires secondary assessment by law enforcement officers. These technologies and security systems must be evaluated in an actual commuter rail environment to collect operationally relevant data.

## **1.4 What specific legal authorities/arrangements/agreements define the collection of information?**

Pursuant to the Congressional Conference Report (H. Rep 108-774), "Making Appropriations for the Department of Homeland Security for the Fiscal Year Ending September 20, 2005, and for Other Purposes (pg. 79). Congressional appropriation language stipulated that funds be spent for:

- conducting simulated, real-world exercises to validate a training program for the use of commercially available equipment against suicide bombers in commuter and passenger rail environments;
- improving the ability of law enforcement to detect and disrupt potential suicide bombers at a distance while minimizing risk to law enforcement and the general population; and,
- operationally evaluating commercially available systems for rail track surveillance.

## **1.5 Privacy Impact Analysis:**



This pilot project is designed to evaluate the merits of commercial technology to identify suicide bombers among rail passengers in real-world exercises. The technologies capture traditional visible photographic images and emerging “invisible to the eye” images of body-borne concealed threats. There is a risk to privacy with imagery that contains facial and whole body photographs, and/or whole body scans. The risk of this type of privacy interference has been reduced by specifically not collecting additional personally identifiable information (such as name, thus individuals remain anonymous to DHS and the pilot program) and by ensuring that only blurred pictures are shared outside of the RSP.

## Section 2.0 Uses of the system and the information

### 2.1 Describe all the uses of information.

Information is collected in the form of passenger images as follows:

- Traditional motion video images will be obtained in the test areas to evaluate queue lengths at passenger inspection checkpoints and determine the impact of screening on the passenger.
- The infrared (IR), terahertz (THz) and millimeter wave (MMW) images of commuters will be used to evaluate technology and concept of operations effectiveness derived from pooled data.

All of the images collected are part of a primary screening process to identify concealed explosives or shrapnel carried on the commuter’s person. If the system identifies a possible concealed explosive threat, an alarm will occur. Alarm resolution is required on all primary detection alerts and may include law enforcement interrogation and/or physical search. Any illegal contraband that is not evidence of an explosive threat found during secondary inspection/alarm resolution will be managed by local law enforcement authorities. The screening process may uncover other security risks such as concealed weapons or illegal drugs, which will be managed per PATH NY/NJ protocols. DHS will not collect any additional personal information other than the pictures. Local law enforcement may collect additional information, as needed. If requested, DHS may provide PATH NY/NJ a copy of the image photo that prompted the primary screening process.

Image information collected for this pilot project will be held within the project to derive statistical measures of performance for each system. Select images will be shared externally in a training package to disseminate the utility of each technology/CONOPS; however, any facial image shared will be obscured to prevent identification of an individual. If the technology detects a true threat during the pilot, the threat will be handled appropriately through law enforcement.

Images may also be used for training purposes. In this instance the facial features will be blurred.



**2.2 Does the system analyze data to assist users in identifying previously unknown areas of note, concern, or pattern (sometimes referred to as data mining)?**

There are no plans to use this data to search for or to establish patterns involving individuals. The information will be used to estimate measures of effectiveness derived from pooled data, such as probability of detection, false alarm rate, nuisance, alarm rate, impact on the individual and delay time. Data will be deleted within 90 days (per PATH NY/NJ legal). For the purpose of reporting to Congress, a limited number of images will be maintained; however, all identifying features of individuals will be blurred.

**2.3 How will the information collected from individuals or derived from the system be checked for accuracy?**

The accuracy of the information is determined by the detection that takes place. The pilot is seeking to detect a bomb which often consists of explosives, shrapnel, batteries and wires. All positive alarms from the surveillance technologies will require resolution to determine the nature of the alarm. This is performed by escorting the passenger to a partitioned secondary screening facility for questioning and/or physical inspection (such as performing a pat-down inspection). Alarms will be resolved as nuisance (the item causing the alert was appropriately found, but was not a threat), false (no item was found), and true (the item found was a true threat).

**2.4 Privacy Impact Analysis**

Technology has been deployed to blur the images that have personal information such as a face or other identifying features when shared outside of the RSP or used for training purposes. Individuals using the system have been trained on the appropriate use of the system and the collection of the information so as to decrease the risk of misuse of the clear image photos.

## Section 3.0 Retention

**3.1 What is the retention period for the data in the system?**

The data will be analyzed by the DHS RSP for a period not to exceed ninety (90) day, after which the data will be archived or destroyed. Ninety (90) days provides adequate time to complete the RSP and develop follow on actions.

**3.2 Has the retention schedule been approved by the National Archives and Records Administration (NARA)?**

Yes. General Records System 20 covers the disposition of Electronic files or records



created solely to test system performance, as well as hard-copy printouts and related documentation for the electronic files/records.

### **3.3 Privacy Impact Analysis**

The information needs to be retained for 90 days to ensure adequate time is available to assess the utility of the technologies being evaluated and develop the needed training materials.

## **Section 4.0 Internal sharing and disclosure**

### **4.1 With which internal organizations is the information shared?**

DHS/S&T will share the results of the study with the Transportation Security Administration (TSA), but the individual images will not be released unless facial features are obscured/blurred as discussed in other sections.

### **4.2 For each organization, what information is shared and for what purpose?**

DHS/S&T will share the results and the obscured/blurred pictures with TSA to assess merits of technology systems/concepts of operations as requirements for mass transit authorities or for adaptation into other transportation environments.

### **4.3 How is the information transmitted or disclosed?**

The study results and associated obscured/blurred pictures will be transmitted in electronic or print editions. All reports generated by the project will be designated For Official Use Only and will be appropriately maintained.

### **4.4 Privacy Impact Analysis**

Internal information sharing is needed within the S&T technical team to understand and define the technology/CONOPS merits/demerits; and, external to provide summary results. All images shared within DHS/TSA will remain anonymous as no individual is named or otherwise identified. Any images shared external to the RSP team must have blurred facial features to ensure that the identity of the individual is not recognized in any display of the image.

## **Section 5.0 External sharing and disclosure**

### **5.1 With which external organizations is the information shared?**

Study results will be available to transit authorities in the form of a training package that describes technology options and select concepts of operation. Commercial vendors supplying equipment for the pilot will be provided subsets of images to support improvements in the technology. Any images supplied to vendors will protect individual privacy by blurring out the images before sending on to the vendors. The information may also be made available to



Congress.

When an alarm and secondary screening confirms presence of concealed weapons or illegal drugs, PATH NY/NJ will implement law enforcement protocols and RSP may provide the clear photo upon request by the law enforcement authority.

## **5.2 What information is shared and for what purpose?**

Technology system performance results will be shared to enable the transit authorities to evaluate operational costs and benefits of technologies employed in the test. No personally identifiable commuter information will be shared.

If, during the course of the pilot test, the LEO detains a commuter based on concealed contraband or explosives detection, then law enforcement will have access to images collected from the pilot activities for use in legal proceedings. Possession of contraband or explosives may also be confirmed by subsequent search by the LEO, based on the LEO's determination of probable cause.

## **5.3 How is the information transmitted or disclosed?**

Printed or electronic summary reports of the study will be provided without any personally identifiable information.

**5.4 Is a Memorandum of Understanding (MOU), contract, or any agreement in place with any external organizations with whom information is shared, and does the agreement reflect the scope of the information currently shared?**

The training package for transit authorities is intended to provide a current value assessment of technology/CONOPS for consideration of security system upgrades. Information shared with external organizations will not include sufficient detail to identify specific individuals. No specific MOU, contract or agreement is employed.

## **5.5 How is the shared information secured by the recipient?**

Shared information does not include personally identifiable information. Sensitive security information resulting from the RSP will be protected according to DHS information security requirements.

**5.6 What type of training is required for users from agencies outside DHS prior to receiving access to the information?**

Not applicable.

## **5.7 Privacy Impact Analysis**

For study results and associated photos, the information will be obscured or blurred so that no personal information is provided to those looking at the efficacy of the information. For





law enforcement authorities, the clear image photo may be provided if requested after a search has been conducted.

## Section 6.0 Notice

**6.1 Was notice provided to the individual prior to collection of information? If yes, please provide a copy of the notice as an appendix. A notice may include a posted privacy policy, a Privacy Act notice on forms, or a system of records notice published in the Federal Register Notice. If notice was not provided, why not?**

Notice that screening is taking place and what type of technology will be used will be provided prior to entrance to the transit area at PATH. The signage that will be used for the PATH pilot is provided in Appendix A.

Individual commuters will be able to render consent prior to entering the relevant area because sufficient notice will be provided. Given the nature of the information gathered, the RSP will not be collecting information that is considered a record under the Privacy Act. *See* 5 U.S.C. § 552a(a)(4)(defining a record as "any item . . . of information about an individual . . . that contains his name, or the identifying number, symbol, or other identifying particular assigned to the individual, such as a finger or voice print or a photograph.") Accordingly, we will not file a system of records notice in the Federal Register as indicated in 5 U.S.C § 552a(e)(4).

**6.2 Do individuals have an opportunity and/or right to decline to provide information?**

The notice, as described in 6.0, will provide written notice to individuals of their options including the opportunity to enter the station where the test will take place or choose to enter via another station thereby opting out of the pilot study with no record of declination or penalty.

**6.3 Do individuals have the right to consent to particular uses of the information, and if so, how does the individual exercise the right?**

No. Once the passenger chooses to enter the inspection area by passing through the turnstiles, the person has consented to have images obtained by the RSP.

### **6.4 Privacy Impact Analysis**

Individuals will be provided adequate notice, as described in 6.0, that security screening will occur upon entry through the turnstiles. An individual may choose not to consent by leaving the station and entering the rail system through a separate station. Sufficient notice of the location and type of screening has mitigated the risk of the individual being unaware of the collection of information.



## **Section 7.0 Individual Access, Redress and Correction**

### **7.1 What are the procedures that allow individuals to gain access to their own information?**

None. No additional personally identifiable information is collected to associate an individual in an image, nor will the public have access to the image database. Nonetheless, if a person is arrested on the basis of the images, they may request copies of these images from PATH NY/NJ's Legal Department.

### **7.2 What are the procedures for correcting erroneous information?**

If an alarm resolution is required, a physical search is conducted by trained personnel and if nothing is found then the individual is allowed to pass and no personal information is collected. If the wrong individual was brought over for secondary screening, this will be rectified by comparing the clear photo to the individual being screened.

### **7.3 How are individuals notified of the procedures for correcting their information?**

There is no information to be corrected.

### **7.4 If no redress is provided, are alternatives available?**

Redress is provided at the time of the secondary screening.

### **7.5 Privacy Impact Analysis**

Individuals will not have access to collected images because the information is not cataloged by retrievable personal information.

## **Section 8.0 Technical Access and Security**

### **8.1 Which user group(s) will have access to the system?**

Rail Security Pilot S&T technical team consisting of members from Oak Ridge National Laboratory (ORNL), Lawrence Livermore National Laboratory (LLNL), Pacific Northwest Laboratory (PNL), Sandia National Laboratories (SNL) and DHS/S&T will have access to clear and blurred images collected while in the field, and later during data analysis/summary report preparation.

No other groups will have access to the clear images.

### **8.2 Will contractors to DHS have access to the system?**



Yes. U.S. Government National Laboratories are considered DHS intramural laboratories, but may be considered external to the DHS. See 8.1. Commercial vendors supplying technology for the pilot will support the field operations, providing technical advice on optimum operation of the technologies.

**8.3 Does the system use “roles” to assign privileges to users of the system?**

No. There is a limited number of individuals who have access to the system, which will include only the S&T technical team.

**8.4 What procedures are in place to determine which users may access the system and are they documented?**

S&T technical team members are the only individuals with access to the system. This is documented according to previously drafted Statements of Work.

**8.5 How are the actual assignments of roles and rules verified according to established security and auditing procedures?**

The Project Manager will for the S&T technical team. The Project Manager will perform random inspection/auditing to ensure all collected images are managed per the privacy requirements of the project.

**8.6 What auditing measures and technical safeguards are in place to prevent misuse of data?**

Given the small number of individuals with access to this pilot program, auditing has not been put in place. If this program is deployed on a larger basis appropriate auditing measures will be included.

**8.7 Describe what privacy training is provided to users either generally or specifically relevant to the functionality of the program or system?**

Appropriate privacy training has been provided to the limited number of individuals on the S&T technical team with actual access to the system.

**8.8 Is the data secured in accordance with FISMA requirements? If yes, when was Certification & Accreditation last completed?** This section is not applicable because data collected by the RSP is a stand alone system and will not be integrated into existing DHS systems.

**8.9 Privacy Impact Analysis**

The bulk of image data collected will be translated into statistical performance characteristics of the technology by the DHS technical team. Team members have been trained on the appropriate use of the clear image.



## Section 9.0 Technology

The following questions are directed at critically analyzing the selection process for any technologies utilized by the system, including system hardware, RFID, biometrics and other technology.

### **9.1 Was the system built from the ground up or purchased and installed?**

All systems were selected, obtained and installed by the RSP project team.

### **9.2 Describe how data integrity, privacy, and security were analyzed as part of the decisions made for your system.**

The RSP CONOPS for the selected technologies were developed to meet the goals for detection/interruption of suicide bomb threats on individuals without specifically identifying an individual. Decisions to include specific technology/CONOPS into the RSP were based on merits to improve rail security balanced by impacts to transit authority operations.

### **9.3 What design choices were made to enhance privacy?**

Design choices depended on the technology system. Full body imaging technologies were selected and configured so as to not show a revealing image of the screened individual. Video surveillance cameras were selected to be of lower resolution and wider angle viewing than required for individual identification. Furthermore, mount locations were chosen to provide views from above (also limiting individual identification) to assist in the identification of conduct of operations problems, the formation of queues, and time-motion information. The secondary screening location was located out of the main flow of passengers and is a relatively isolated location. Privacy partitions are planned to form discreet, individual secondary screening areas where the cause of the alarm can be identified through questioning, hand held metal detectors, and/or pat-down techniques.

## **Conclusion**

Developing system performance factors to recommend credible suicide bomber rail protection systems and methodologies does not depend on identifying, classifying, or tracking the test participants. The RSP actually benefits from test participant anonymity both in minimizing obtrusiveness on the commuters, who are impacted by deployed systems, and in avoiding the potential for individual profiling. We have selected technologies and CONOPS that meet the goal of detecting threats on individuals without links to collect the identity of these individuals. Images collected will be used to determine threat detection technology performance



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and impacts to transit authority operations. This information can not be mined to provide information about specific individuals and will be either archived at DHS or destroyed at the end of the pilot program.



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Security**

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**Responsible Officials**

Joe Foster

Department of Homeland Security

**Approval Signature Page**

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July 12, 2006

Maureen Cooney  
Acting Chief Privacy Officer  
Chief Freedom of Information Act Officer  
Department of Homeland Security

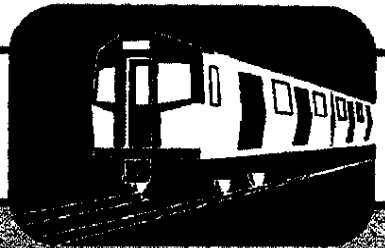


**Appendix A**

**CUSTOMER ADVISORY**

**PATH Exchange Place Station  
Phase 2 Pilot Test  
Passenger Screening Technologies**

**July 13 – July 27, 2006**



**The U.S. Department of Homeland Security**, in cooperation with PATH, a subsidiary of The Port Authority of New York and New Jersey, will conduct Phase 2 of a pilot project to test imaging technologies that detect explosive devices.

**Notice: All passengers entering the PATH Exchange Place Station are subject to a security inspection.**

**Passengers who do not agree to such inspection must exit this station.**

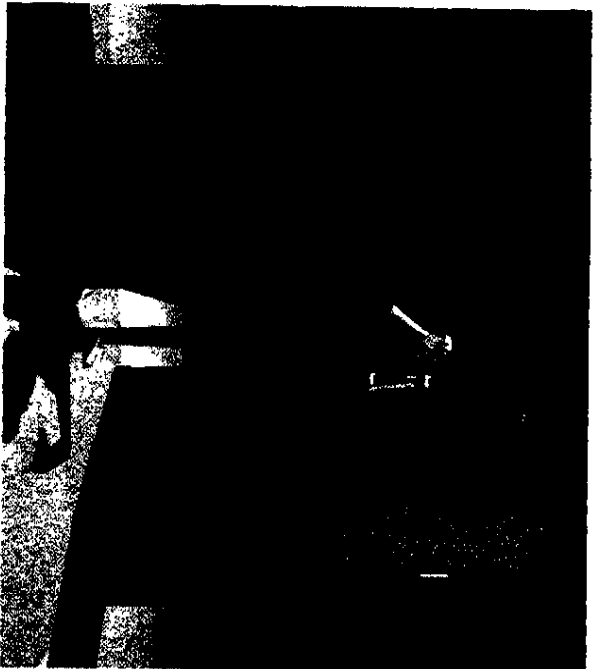
[dhs.gov/securetravel](http://dhs.gov/securetravel)



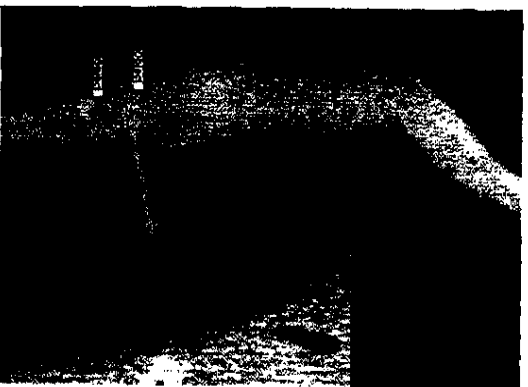
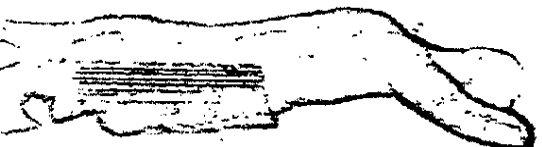
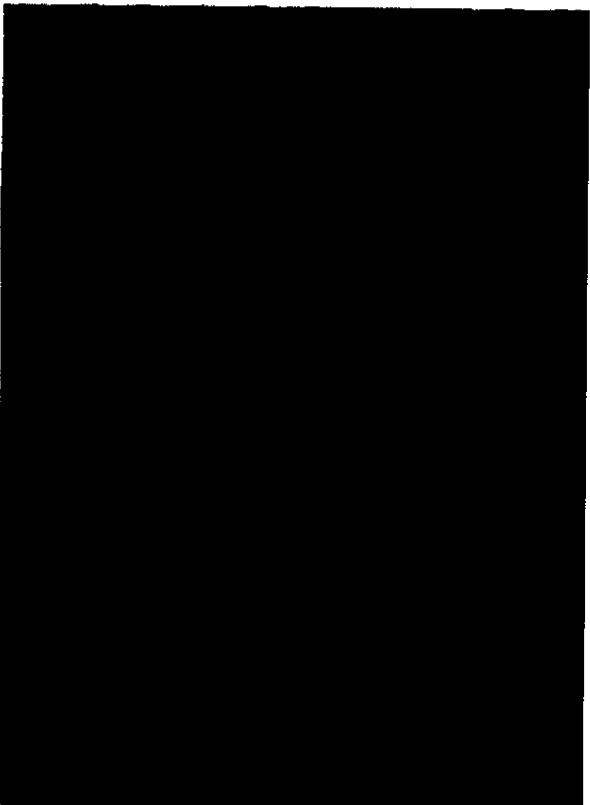
Figure B.1. Security Inspection Notice For Rail Security Pilot At PATH



## Walk-By (Single Sided) or Walk-Through (Double Sided / Offset) Backscatter X-Ray for Suicide Bomber Detection (Rapiscan)



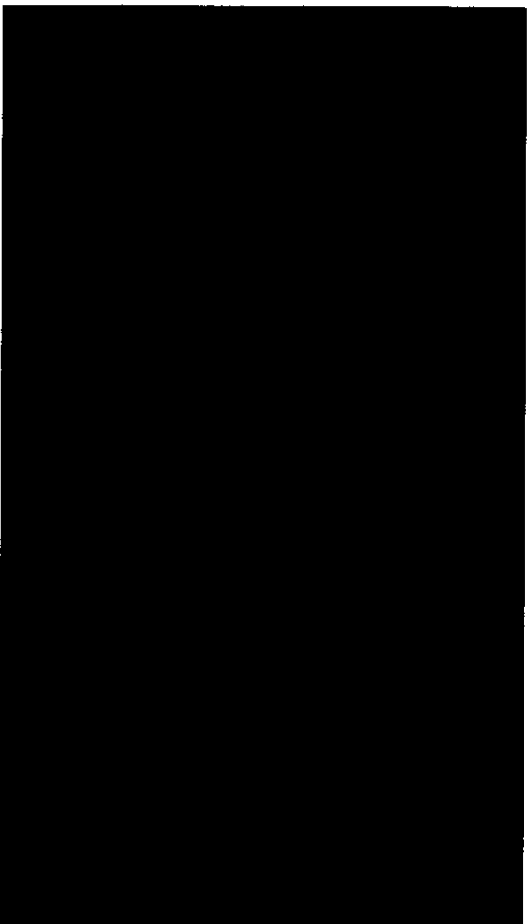
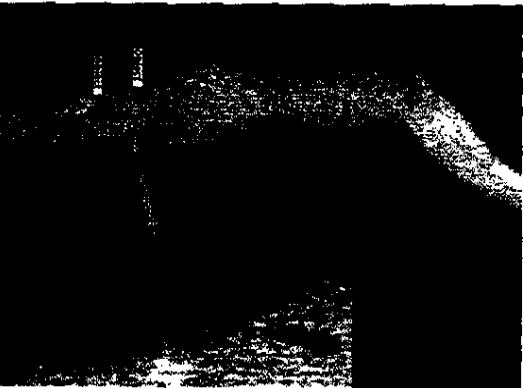
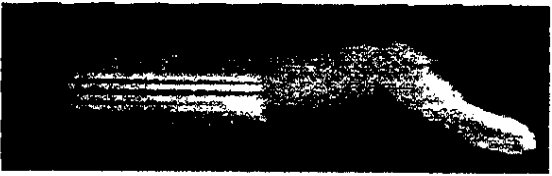
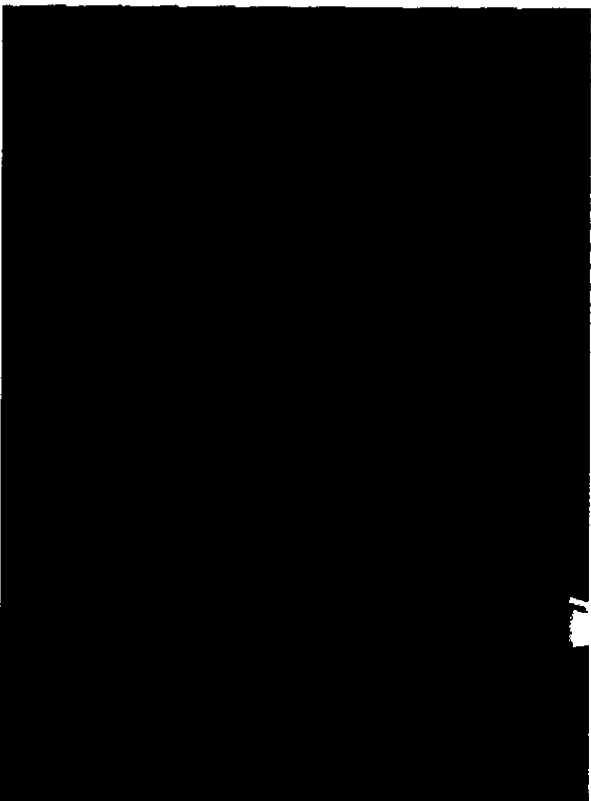
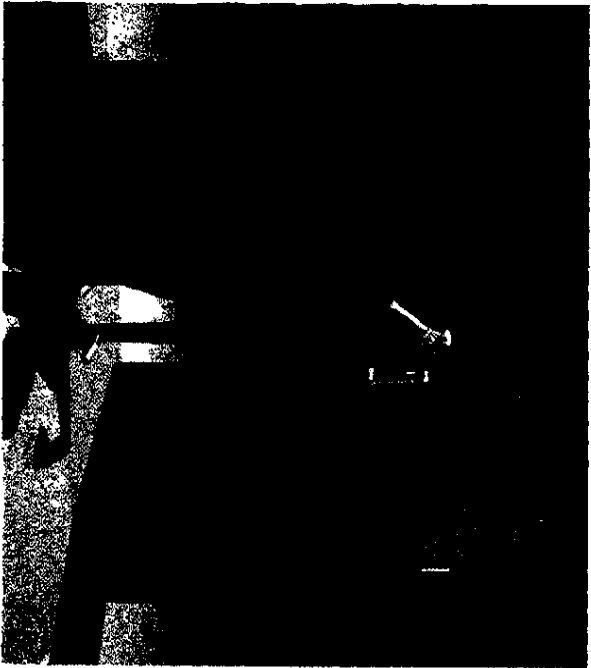
- Designed as a real-time concealed threat detection system
  - *Has Potential for Aviation Threat Detection*
- Derived from the established Secure1000 System (150 of which were recently purchased by TSA)
- Automated Threat Recognition Software is being developed
- Meets ANSI guidelines for Radiation Dosage (<10  $\mu$ Rem/Scan)
- Delivered prototype is currently undergoing Independent T&E
- [REDACTED]
- [REDACTED]
- [REDACTED]







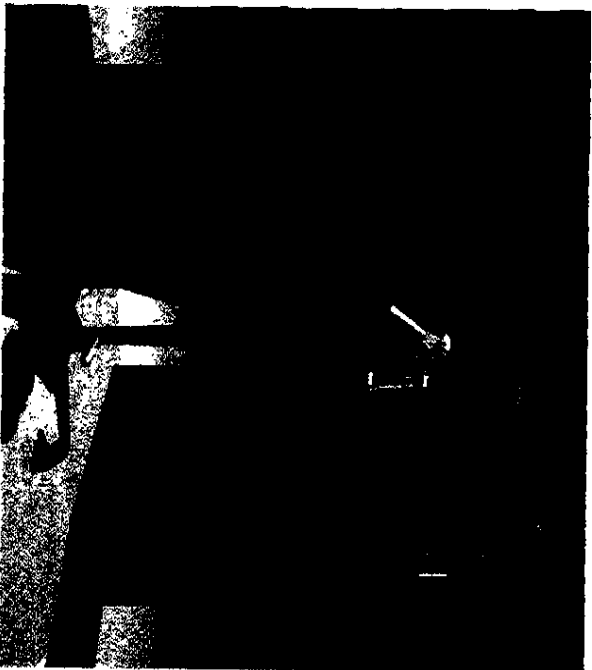
**Walk-By (Single Sided) or Walk-Through (Double Sided / Offset)  
Backscatter X-Ray for Suicide Bomber Detection (Rapiscan)**



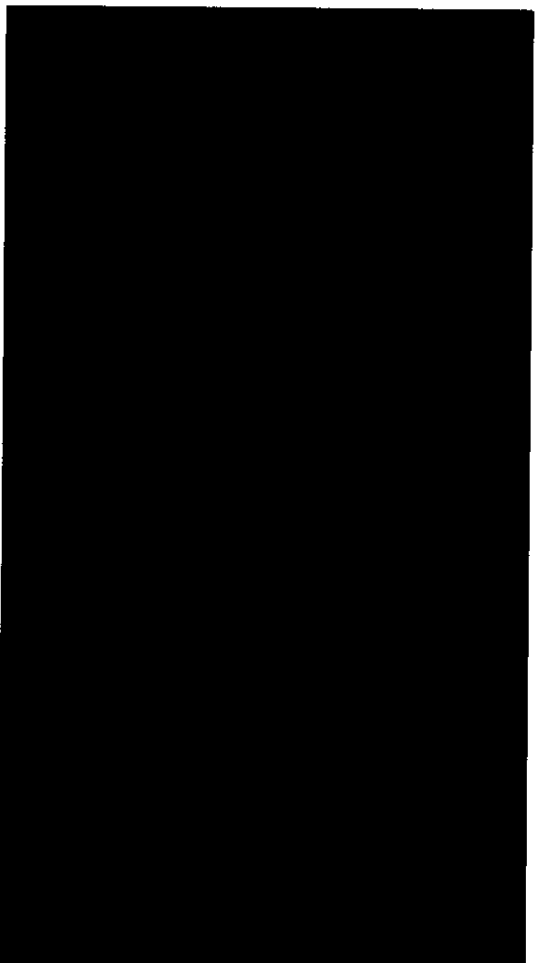
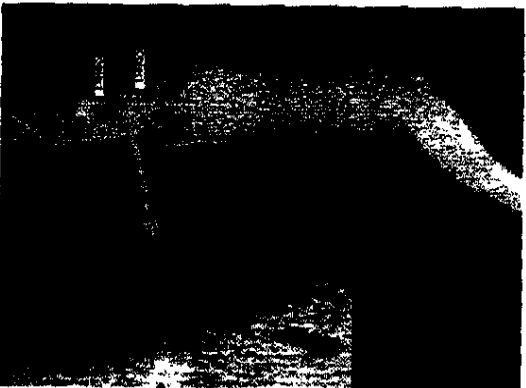
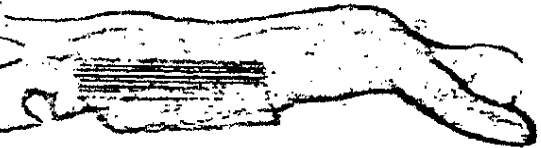


## Walk-By (Single Sided) or Walk-Through (Double Sided / Offset) Backscatter X-Ray for Suicide Bomber Detection (Rapiscan)

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- Designed as a real-time concealed threat detection system for Surface Transportation
  - *Has Potential for Aviation Threat Detection*
- Derived from the established Secure 1000 System (150 of which were recently purchased by TSA)
- Automated Threat Recognition Software is under development (TSWG)
- Both configurations meet ANSI guidelines for Radiation Dosage
- Delivered prototype is currently undergoing Third Party Test & Evaluation



**Standalone Backscatter X-ray System for Imaging of Explosive  
Devices for the  
Counter-Improvised Explosive Device (C-IED) Program**

**A Technology Transition Agreement**

**Between**

**Department of Homeland Security  
Science & Technology Directorate**

**And**

**Transportation Security Administration**

**June 18, 2008**

The responsibilities each Party assumes under this TTA are contingent upon available funds from which expenditures may be legally made. Nothing in this TTA, in and of itself, obligates DHS S&T or (other DHS party) to expend appropriations or to enter into any contract, assistance agreement, interagency agreement, or other financial obligations. This document reflects a good faith agreement by the Parties to common objectives and to execute programs toward these objectives. The agreement is considered to be adaptable, by review and agreement of the Parties, to technical challenges, funding changes, and alterations in operational environments or requirements.

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## **I. Introduction**

This Technology Transition Agreement (TTA) establishes the conditions, roles, and responsibility for the successful transition of technology from the Department of Homeland Security Science & Technology Directorate (DHS S&T), to the Transportation Security Administration (TSA).

### **1.1 Background**

Improvised Explosives Devices (IEDs) have been used by terrorists in attacks in Northern Ireland, Chechnya, Lebanon, and Israel. IEDs have been used in attacks against American interests such as the bombings of the U.S. Embassy and barracks in Lebanon, the Khobar Towers in Saudi Arabia, the U.S. embassies in Kenya and Tanzania, the USS Cole in Yemen, and thousands of annual attacks against American personnel in Iraq and Afghanistan.

In light of the growing threat posed by IEDs to our nation's transportation systems sector architecture, and the passengers and commerce items that move through it, the TSA has conveyed requirements to DHS S&T for developing capabilities for improved detection of explosive devices on people. The delivered technology will provide detection of explosive devices on persons by the use of backscatter imaging. The deliverable will be a system that enables the detection of suicide bombers in various high throughput transportation venues, and drives the development of technology identified in this TTA.

This delivered system will address the following Capability Gap:

**EXG-FY07-01: Standoff detection of explosives & weapons on people**

## **II. Basic Transition Agreement**

### ***a. Standalone Backscatter X-ray System for Imaging of Suicide Bomber Explosive Devices***

DHS S&T will deliver a prototype system for government testing and evaluation in Q1 FY09. The prototype will be capable of imaging a person and the objects on his/her possession while walking in a three (3)-foot wide corridor. The system will use dual backscatter x-ray systems to create 360 degree image of a person, which will then reveal anomalies indicative of an explosive device on his or her persons. The resolution of the image shall be such as to enable a trained system operator to detect anomalies indicative of an explosive device on a person.

## Major Objectives:

### DHS S&T will:

- a) Sponsor the modification of existing commercial backscatter x-ray imaging technologies for detection of Person Borne IEDs (PB/IEDs) within our nation's transportation systems sector.
- b) Implement changes to current backscatter x-ray imaging technologies to create the following capabilities:
  - o Detect explosive devices on persons in walking motion
  - o Provide 360° coverage of subject
  - o Increase detection distance from current commercial capability of less than one (1) foot to 3 feet
  - o Reduce interrogation time from current commercial capability of 25 seconds to ten (10) seconds
  - o Detect explosive devices of a mass lower than 5 kilograms
- c) Fabricate prototype
- d) Assure compliance with ANSI N43.17 for radiation dosage safety
- e) Factory acceptance test
- f) Deliver an operational prototype for field testing and experimentation with ultimate transition to TSA for Operational Test and Evaluation (OT&E).

### TSA will:

- a) Provide government oversight of Developmental Test & Evaluation (DT&E) of the prototype system
- b) Sponsor and execute Operational Test & Evaluation (OT&E) of the prototype system in a transportation system environment

### ***b. Technology Need***

Currently available Commercial-off-the-Shelf (COTS) x-ray technology requires the person being screened to stand stationary within several inches of the x-ray while being interrogated for possible explosives devices. Additionally, currently available COTS technology can only interrogate a 180 degree view of a person. The low throughput of currently available COTS technology makes it inefficient for TSA screening operations. This wide technology gap is due primarily to the fact that, until recently, adequate technology solutions have been unavailable.

The operational needs of the TSA, which involve screening of people moving into and through the transportation system sector, require systems with rapid, high throughput for efficient, effective screening with the minimum disruption achievable. This system must be able to attain the image resolution required to accurately discern an explosive device from other common objects which may be in a person's possession. The system must be able to reliably identify explosive devices on persons, while simultaneously maintaining low false-positive rates. The TSA has established the mission need for this capability via the Capstone

Integrated Project Team (IPT) process, specifically in capability gap EXG-FY07-01: Standoff detection of explosives & weapons on people.

The deliverable will be a system that provides the capability to detect explosive devices on persons in various high throughput venues (e.g. special events, transportation venues, etc.). The system will consist of a portal which utilizes backscatter x-ray interrogation from multiple angles to create 360 degree image of a person and the objects on his/her possession. The display resolution will be high enough so as to allow the detection of anomalies indicative of an explosive device with acceptable rates of error.

It is noted that this technology has certain limitations. The nature of the system raises certain privacy issues since it has the ability to penetrate and image through clothing. In addition, the interrogating beam is a type of x-ray which is a low dose of ionizing radiation. Before transfer, this system will be certified as inherently safe for the screener and those being screened, in addition to being compliant with various privacy laws and governmental regulations.

The Key Performance Parameters (KPPs) of the system are as follows:

The system must:

1. Identify 90% of concealed PB/IED threats
2. Have a false alarm rate not to exceed 10%
3. Detect devices on people within a three (3)-foot wide corridor
4. Interrogate subjects in a non-contact manner
5. Interrogate subjects while they are in walking motion
6. Meet legal privacy requirements
7. Use no more than one trained operator (specific to system operation only)
8. Meet federal safety standards
9. Be at Technology Readiness Level (TRL) 6

The final deliverable will be shipped by DHS S&T to competent authority for DT&E in Q1 FY09 and will be at an estimated Technology Readiness Level 6. Upon delivery, the prototype system will be transitioned to TSA, who will provide oversight of DT&E and conduct OT&E upon completion of DT&E.

### ***c. Integration Strategy***

Upon successful demonstration of Key Performance Parameters through acceptance testing at vendor site, DHS S&T will transition the system to the TSA Chief Technology Officer (CTO), who will provide oversight of DT&E of the system, to be performed by competent authority selected by DHS S&T. Upon completion of DT&E, the CTO will conduct OT&E on the prototype system in a transportation environment. Dependent on the TSA CTO's judgment of the prototype's performance during OT&E, the TSA CTO may or may not choose to further develop the system for deployment readiness and commercialization.

***d. TSA Program Manager***

Lyle Malotky, Science Advisor  
Transportation Security Administration  
[REDACTED]

***e. DHS S&T Project Manager***

Michael Shepard, Standoff Detection Program Manager  
Department of Homeland Security, Science & Technology Directorate,  
Explosives Division [REDACTED]

***f. Capability Gap Requirement Basis***

Department of Homeland Security requirements, including standoff explosive device detection requirements, are created via the Transportation Security Capstone IPT and Project-IPT processes. The IPTs are lead by their respective customers and ensure functional requirements, attributes, and constraints are identified and documented. The requirements are then addressed with an Enabling Homeland Capability (EHC). In addition, the IPTs base their requirements on Homeland Security Presidential Directives, congressional laws and guidance, national planning and implementation guidance, and National Planning Scenarios.

**III. Technical Details and Programmatic**

***a. Technology Status***

**1) Status Summary**

This system is currently in the prototype manufacturing stage. A TRL (level) 6 prototype is expected to be delivered for DT&E in Q1 FY09.

**2) Risk Analysis**



Top Risks	Brief Descriptions	Mitigation Strategies
Detection within a 3 foot wide corridor fails	Explosive device not identifiable at desired distance	<ol style="list-style-type: none"> <li>1. Limit acceptance criteria.</li> <li>2. Supplement contract for further development.</li> <li>3. Terminate program pre-transition.</li> </ol>
Unacceptable Pd and Fa.	Explosive devices not detected/ Non-explosive devices detected as explosive	<ol style="list-style-type: none"> <li>1. Limit acceptance criteria.</li> <li>2. Integrate secondary detection technology into system.</li> </ol>
Not able to identify person affiliated with the alarm	Detection of a explosive device cannot be coupled with the person carrying the device	<ol style="list-style-type: none"> <li>1. Develop an image capture system in tandem with detection system.</li> <li>2. Create infrastructure capable of mitigating threat.</li> </ol>
X-ray dosage exceeds safety standards	Technology unsafe for human screening	<ol style="list-style-type: none"> <li>1. Increase shielding at the cost of weight/size.</li> <li>2. Decrease interrogation time.</li> </ol>
Power consumption exceeds requirements	Technology unable to be setup at any venue	<ol style="list-style-type: none"> <li>1. Include power conversion in technology.</li> </ol>
Deliverable of prototype behind schedule	Prototype will not be ready for planned transition date	<ol style="list-style-type: none"> <li>1. Increase funding to overcome time lapse.</li> <li>2. Alter requirements to the capability at transition date.</li> </ol>

***b. Technology Development Strategy***

Program strategy shall include the examination of the commercially available backscatter x-ray technology for capabilities, short-comings, relevance to operational needs, and investments needed for maturation and demonstration of a standoff system. Various threat scenarios shall also be considered, and appropriate environments and venues must be used for technology demonstrations.

Technology Development consists of:

- Prototype Fabrication – currently ongoing
- Acceptance testing – to be conducted at performer site - 3<sup>rd</sup> Quarter FY08
- Delivery of prototype for government testing – DT&E to be conducted - 1<sup>st</sup> Quarter FY09

Research strategy includes the additional investigation of:

- Integration of information from distributed orthogonal sensors to achieve near real-time conflict resolution and decision-making with high effectiveness.
- Unique physical and chemical phenomena that may indicate the presence of suicide bombers at greater distances.
- New chemical explosives, including liquids.

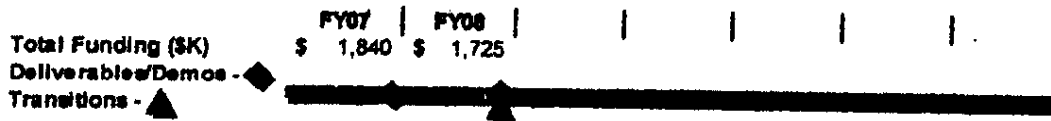
- IED defeat technologies that emerge from the knowledge gained by the development of active sensing technologies.

**c. Exit Criteria**

The final product will consist of a standalone imaging system which meets the KPPs, as evaluated in formal DT&E. The following will also be provided: personnel training, training materials, and support materials required for operation and maintenance of the system and approved by the DHS S&T Test & Evaluation Division. TSA will provide oversight of DT&E. Selective KPPs may be waived by TSA. Existing project plans will also include key decision points. These could serve as additional exit criteria since they will determine whether a project deliverable is ready to proceed to the next phase or transition.

**d. Program Plan**

Major activities planned for the technology/product development.



ID	Task Name	FY07		FY08		FY08		FY08	
		1 <sup>st</sup> Q	2 <sup>nd</sup> Q	3 <sup>rd</sup> Q	4 <sup>th</sup> Q	1 <sup>st</sup> Q	2 <sup>nd</sup> Q	3 <sup>rd</sup> Q	4 <sup>th</sup> Q
1	Prototype Fabrication								
2	Acceptance Test								
3	Deliver Prototype for government testing								
4	User Acquisition								


**e. Funding**


No funds will be transferred between the parties. Each party will fund its own participation in this agreement

**DHS S&T Funding:**

FY/FSP Line Item	FY07	FY08	Total
Funding	\$1,840	\$1,725	\$3,565
FY Totals	\$1,840	\$1,725	\$3,565

#### IV. Signatures

  
Mike Shepard, DHS S&T Project Manager M. Shepard 7 July 2008  
[print and sign] Date

  
Jim Tuttle, DHS S&T Division Director Jim Tuttle 8 June 2008  
[print and sign] Date

  
Ron Motway, TSA OST, Engineering Requirements Ron Motway 20 June 2008  
[print and sign] Date

  
Mike Golden, TSA CTO Michael Golden 20 June 2008  
[print and sign] Date

Department of Homeland Security  
Homeland Security Advanced Research Projects Agency (HSARPA)

Date: September 29, 2005

### **RESEARCH AND DEVELOPMENT AWARD ANNOUNCEMENT**

On April 14, 2005, the Homeland Security Advanced Research Projects Agency (HSARPA) provided \$504,546 funding to Rapiscan Systems High Energy Inspection Corporation of Sunnyvale, CA, 94089-1328 as a result of their responsive proposal to HSARPA's Broad Agency Announcement BAA05-03 "Prototypes and Technology for Improvised Explosive Device Detection (PTIEDD)" of December 21, 2004. This funding increment is the initial feasibility phase of a multi-phase effort.

This BAA solicitation seeks to protect the homeland through detection of high explosives in various applications, including, but not limited to, detection of leave-behind packages, vehicles, and suicide bombers. The systems developed by this research will require innovative or novel capabilities in multiple disciplines including material science, computer science, chemistry, physics, electrical, mechanical and systems engineering.

One focus of this BAA solicitation seeks novel and innovative explosives detection systems to advance the sensitivity, selectivity, standoff distance, and remote detection capability of current explosive detection systems. Key characteristics are wide area surveillance and detection, detection through various materials, maximization of the throughput and/or shortened interrogation time, and transportable, mobile, or portable device for stationary or mobile targets.

This contract funds Rapiscan Systems High Energy Inspection Corporation for the initial phase of a multi-phase effort to develop a system for detection of explosives carried by suicide bombers through backscatter x-ray imaging technology. This system will be used as a walk-through x-ray screening system that could be deployed at entrances to special events or other points of interest. The developed system will provide increased standoff distance, reduced interrogation time, and address how best to mitigate x-ray privacy issues.

HSARPA expects to award additional, similar efforts resulting from this solicitation in the near future.

cc:

Sen. Barbara Boxer  
Sen. Dianne Feinstein  
Rep. Anna G. Eshoo

U.S. Department of Homeland Security

**CONTRACT AWARD NOTIFICATION**

**Competition Sensitive - Not to be divulged outside of DHS unless authorized by the Contracting Officer**

**AGENCY INFORMATION**

1. Organizational Element:  
Science & Technology Directorate – Homeland Security Advanced Research Projects Agency

2. Contracting Officer:

Timothy Davis

Telephone Number: [REDACTED]

3. Project Officer:

Trent DePersia

Telephone Number: [REDACTED]

**CONTRACTOR INFORMATION**

4. Contractor:  
Rapiscan Systems High Energy Corporation

5. Contractor Address: *Include City, State and Zip Code*  
352 East Java Drive  
Sunnyvale, CA 94089-1328

6. Contract No.  
HSHQDC-05-C-00032

7. Contract Value, initial award  
\$504,546

8. Contract Value, including Options  
\$1,657,193

9. Method of Acquisition: *Check One*

Sole Source

Competitive, Sealed Bid

Competitive, Negotiated

10. Major Subcontractor Name(s): *Include Street Address, City, State, and Zip Code*

Subcontractor

Subcontractor

Subcontractor

11. Place(s) of performance (contractor and major subcontractor(s)): *Include Street Address, City, State and Zip Code*

Contractor

Subcontractor

Subcontractor

12. Summary of work to be performed: (Include enough information to describe the effort to be performed and its purpose. Attach a copy of the detailed statement of work. It is imperative that a complete description be provided one that is sufficient for preparing a Press Release and/or providing a meaningful description when notifying interested parties.)

The Contractor will design, develop, and demonstrate a novel transportable system for remote detection of explosives concealed in packages, vehicles or beneath clothing.

Contracting Officer Signature

[REDACTED]

Date

27 Sep 05

<b>AWARD/CONTRACT</b>	1. THIS CONTRACT IS A FIRM ORDER UNLESS (DPA) OR (CP) 505	PERIOD	PAGE OF PAGES 1 23
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2. CONTRACT (FIVE DIGIT) NO. HNSDC-05-D-00022	3. EFFECTIVE DATE 09/30/2005	4. REQUISITION/PURCHASE REQUEST/PROJECT NO. NSAR-05-00158
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5. ISSUED BY Department of Homeland Security Office of Procurement Operations 245 Murrey Drive Bldg. 410 Washington DC 20528	CODE	DESI	6. ADMINISTERED BY (Refer to 401) Department of Homeland Security Office of Procurement Operations 245 Murrey Drive Bldg. 410 Washington DC 20528	CODE	DESI
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7. NAME AND ADDRESS OF CONTRACTOR ( incl. Street, City, County, State and ZIP Code) RAPSCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION 262 EAST JAVA DRIVE SUNNYVALE CA 940891328	8. DELIVERY <input type="checkbox"/> FOB CONSIG <input checked="" type="checkbox"/> OTHER (also include)	9. DISCOUNT FOR PROMPT PAYMENT Net 30
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10. SUBJECT MATTER (if copies unless otherwise specified) TO THE ADDRESS SHOWN IN:	1016 07
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11. SEND TO MARKET FOR Department of Homeland Security 245 Murrey Lane Bldg. 410 Deborah DeValut Science & Technology Directorate Washington DC 20528	CODE	DESI	12. PAYMENT WILL BE MADE BY DMS- Science and Technology Dir. 245 Murrey Lane Bldg. 410 Attn: Deborah DeValut Washington DC 20528	CODE	DMS-SCIENCE&TECH
---	------	------	---	------	------------------

13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION <input type="checkbox"/> 10 USC 2804 (a) <input type="checkbox"/> 41 USC 309 (a)	14. ACCOUNTING AND APPROPRIATION DATA See Schedule
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15A. ITEM	15B. SUPPLIES/SERVICES	15C. QTY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
Continued					
THE TOTAL AMOUNT OF CONTRACT					\$394,546.00

CD	DESC	DESCRIPTION	QUANTITY	CD	DESC	DESCRIPTION	PRICE (\$)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
X	A	BOUND/UNBOUND CONTRACT FORM	1-2	X	1	CONTRACT CLAUSE	7.1-7.2
X	B	SUPPLIES OR SERVICES AND PROCEEDS	3-4	PART III - LIST OF DOCUMENTS, SPECIFICATIONS AND OTHER ATTACH			
X	C	DISCOUNT/INCENTIVE/STIPENDIUM STATEMENT	4-9	X	1	LIST OF ATTACHMENTS	8.1
X	D	PACKAGING AND SHIPPING	7	PART IV - REPRESENTATIONS AND WARRANTIES			
X	E	INSPECTION AND ACCEPTANCE	7-8	X	1	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFICERS	
X	F	DELIVERY OR PERFORMANCE	8-9	X	1	REPR, COMDE, AND NOTES TO OFFICERS	
X	G	CONTRACT ADMINISTRATION DATA	9-12	X	1	REPR, COMDE, AND NOTES TO OFFICERS	
X	H	SPECIAL CONTRACT REQUIREMENTS	12	X	1	REPR, COMDE, AND NOTES TO OFFICERS	

17. CONTRACTOR'S ACCEPTED ASSIGNMENT (Contractor is required to sign this document and retain it copies in readily accessible.) Contractor agrees to transfer and deliver all forms or portions of the contract set forth or otherwise identified above and on any contract sheets for the consideration stated herein. The rights and obligations of the parties to this agreement shall be subject to and governed by the following conditions: (a) the award agreement, (b) the solicitation, if any, and (c) such proposals, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Proposals are not binding.)

18. F. F. AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number \_\_\_\_\_ including the addition or changes made by you which conditions or changes are set forth in 5.1 above, is hereby accepted as to the terms stated above and on any solicitation sheets. This award encompasses the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award agreement. No further contractual document is necessary.

18A. NAME AND TITLE OF SPECIAL (Type or Print)	18B. NAME OF CONTRACTING OFFICER Timothy B. Davis
18C. DATE SIGNED	18D. DATE SIGNED 63 Oct 05

**B.0 SUPPLIES/SERVICES AND PRICES/COSTS****B.1 CONTRACT TYPE AND SCHEDULE OF ITEMS**

The purpose of this cost-type contract is to provide prototype research and development (R&D) for the Department of Homeland Security for the Prototypes and Technology for Improvised Explosives Device Detection program (PTIEDD) program which seeks to develop, rapid prototype, and improve products and systems capable of detecting explosive compounds in vehicles.

**B.2 CONTRACT LINE ITEMS**

1. The Contractor shall provide said R&D Contract Line Items (CLINs) identified below on a Cost Plus Fixed Fee (CPFF) basis. The fixed fee for all CLINs is 6.0%. The Contractor shall consider the Estimated Costs to be Not-To-Exceed (NTE) ceilings that can be changed only through a contract modification.

<i>CLIN</i>	<i>Supplies/Services</i>	<i>Qty</i>	<i>Unit</i>	<i>Est Unit Cost</i>	<i>Fixed Fee</i>	<i>Total CPFF</i>
0001	PTIEDD Phase I	1	Lot			
0002	PTIEDD Phase II (Option 1)	1	Lot			
0003	PTIEDD Phase III (Option 2)	1	Lot			
	<i>Total Not-to-Exceed</i>					

2. The intent of the Government is that this contract be considered a "completion" cost effort. That is, the contractor is obliged to perform through to phase completion. Minor increases in costs will most likely be covered. Significant changes due to the Contractor's underestimating the level of effort or any changes to the Contractor's technical approach will require Government evaluation of the Contractor's progress. The Contracting Officer may request a revised proposal at any time should the situation warrant. The Contractor is obligated to notify the Contracting Officer upon exhaustion of 75% of funding. All decisions regarding additional funding will be subject to the availability of funds.

**B.3 OPTIONS**

1. This PTIEDD project is being conducted in three phases: Phase I (CLIN 0001), develops the idea sufficient to conduct a Preliminary Design Review; Phase II (CLIN 0002, Option 1) develops the idea further and completes a Critical Design Review; Phase III (CLIN 0003, Option 2) is the final component and integrated system testing of the technology. Ninety days before the conclusion of the current phase, contractors making sufficient progress towards the next phase as determined by the contracting officer and program manager, will be directed to submit detailed updated

technical, management, and cost proposals for the next phase within 14 calendar days. At that time, the Government evaluation team will determine, within 14 calendar days, if it is in the government's best interest to exercise the subsequent option. *Prior to 60 days before the end of the current phase, the government will communicate its intention to the contractor. At that time a modification will be prepared incorporating the revised technical & managerial approaches and exercising the option. Said modification will be signed by both parties prior to the start of the option period.*

## **C.0 PHASE I STATEMENT OF WORK**

### **C.1 SCOPE**

Rapiscan Systems High Energy Inspection Corporation located in Sunnyvale, CA, hereinafter referred to as Contractor shall perform the following:

All systems engineering efforts required to research, develop, design, fabricate and test a backscatter imaging system for the non-intrusive detection of suicide bombers.

The system that will be developed as part of this effort will be based on the technology incorporated within the Rapiscan Systems Secure 1000 personnel Screening System, developed in collaboration with the Technical Support Working Group (TSWG).

Phase I consists of the development of a Phase program plan, development of a system performance specification, evaluation of the system safety, a preliminary hardware/software design, a Preliminary Design Review (PDR), and project management. The majority of the Phase I work will be conducted at the Contractor's facility and at corporate headquarters for Rapiscan Systems.

Phase II consists of the following tasks: development of a final Phase III program plan. Creation of detailed drawings and other documentation required for fabrication, assembly, installation and testing of the prototype backscatter imaging system, a Comprehensive Design Review, and project management. Phase III consists of the following tasks: fabrication, assembly, installation of the prototype backscatter imaging system at the Contractor's site for testing and evaluation; and project management. These activities will be conducted at Contractor's facility and at the corporate headquarters for Rapiscan Systems.

Phase III also includes installation and customer acceptance test and evaluation at a government furnished test site as part of the delivery of the system to HSARPA. For the purposes of this draft SOW, the government test site is assumed to be located in New Jersey. After the selection of the government test site has been finalized, the Contractor shall update the program plan for relocating the system to the test site.

The period of performance for Phase I is nine months. The approximate period of performance for Phase II is five months and the approximate period of performance for Phase III is twelve months.



Phase I Project milestones include the following:

- System Performance Specification
- Radiation Safety Evaluation
- PDF
- Updated Project Plan

Project Milestones for Phases II and III include the following:

- CDR
- Phase II Plan
- Phase II Detailed Design
- Phase II Prototype Fabrication
- Phase II Prototype Installation
- Factory Acceptance Test
- Customer Acceptance Test

## **C.2 PHASE I ACTIVITIES**

Contractor shall conduct the systems engineering and research to develop a prototype backscatter imaging system. Design goals are as follows:

- Covert inspection of moving subjects.
- Detection of explosives on suicide bombers through clothing, backpacks, and other packages.
- Radiation safe and meets the requirements of ANSI Standard 43.17 "Radiation Safety for personnel Screening Systems Using X-Ray."

Contractor shall evaluate the performance of the backscatter imaging system on the basis of:

1. The ability to detect concealed explosives and "leave-behind" bombs, weapons, and ceramic components as a person walks through the imaging system.
2. The safety of the system to screen the general public.
3. The evaluation of different deployment scenarios that optimize the protection specifically for large gatherings, points of interest, transportation systems, and special events.

Contractor shall conduct the systems engineering, research, development and laboratory analysis to identify and validate the backscatter imaging system design that best meets the design goals.

This includes:

**System Performance Specification.** Contractor shall develop the operational performance specification from experimental data generated with a realistic testbed and simulated threats.

**Radiation Safety Evaluation.** Contractor shall conduct the systems engineering, research and development to identify and validate the radiation safety system design. The objective is to demonstrate that the backscatter system is safe and that an inspection will not exceed the limits specified by ANSI N43.17 for a general use system.

**Preliminary System Design.** Contractor shall conduct the systems engineering, research and development to identify, design, and validate the overall system and major subsystems. This includes, the imaging system, the safety systems, and the electrical and mechanical subsystems and controls.

### **C.3 TEST AND EVALUATION**

**Preliminary Design Review.** Contractor shall support conduct a PDR. Contractor shall submit all presentation materials at the PDR. These materials will include a preliminary system concept, performance estimate, and experimental plans.

### **C.4 PROGRAM MANAGEMENT**

Contractor shall maintain and implement a Management Program, which clearly defines how the development effort will be managed and controlled. Contractor shall organize, coordinate, and control all internal project activities (including those which are assigned to subcontractors) to ensure the correct and timely delivery of all supplies and services specified in this contract. Contractor shall maintain a program management office function to manage all technical performance, costs, schedule, and delivery requirements of this Program. The Contractor shall report progress at a program reviews and with presentation materials.

### **C.5 DELIVERABLES**

The following are the deliverables associated with this Program:

The Phase I deliverables include:

- Monthly and Quarterly Progress Status Reports
- Phase I Technical Report and Phase II Program Plan
- Preliminary Design and Feasibility Review

The Phase II deliverables include:

- Monthly and Quarterly Progress Status Reports
- Phase II Technical Report and Phase III Program Plan
- Comprehensive Design Review

The Phase III deliverables include:

- Monthly and Quarterly Progress Status Reports
- Phase III Final Report
- Operational Testing Results
- Prototype inspection System along with operator and Maintenance Manuals.

## **C.6 GOVERNMENT FURNISHED EQUIPMENT/INFORMATION/MATERIALS**

### **1. Government Furnished Information:**

The government will evaluate any written request for information or documentation on a case-by-case basis and at its discretion either accept or reject the request.

### **2. Government Furnished Material:**

None.

## **D.0 PACKAGING AND MARKING**

### **D.1 PACKAGING AND MARKING**

Phase I deliverables shall be electronically submitted to [REDACTED]  
Packaging and Marking instructions for Phase II and III deliverables will be addressed at the time of option exercise.

## **E.0 INSPECTION AND ACCEPTANCE**

### **E.1 CLAUSES INCORPORATED BY REFERENCE**

The following FAR clauses are available in full text at <http://farsite.hill.af.mil> and incorporated by reference into this contract:

52.246-9 Inspection of Research and Development (Short Form)	Apr 1984
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### **E.2 INSPECTION AND ACCEPTANCE BY THE GOVERNMENT**

The Contracting Officer's Technical Representative (COTR) identified in Section G of this Contract is responsible for inspection and acceptance of all services, incoming shipments, documents, and services performed specifically for the Contract.

**E.3 ACCEPTANCE CRITERIA**

Certification by the Government of satisfactory services provided is contingent upon the Contractor performing in accordance with the terms and conditions of the contract and all modifications.

**F.0 DELIVERIES OR PERFORMANCE****F.1 CLAUSES INCORPORATED BY REFERENCE**

The following FAR clauses are available in full text at <http://farsite.hill.af.mil> and incorporated by reference into this contract:

52.242-15 Alt I	Stop-Work Order (Alternate I)	Aug 1989 Apr 1984 (Alt I)
52.247-34	F.O.B. Destination	Nov 1991

**F.2 PERIOD OF PERFORMANCE**

The period of performance of Phase I of this Contract is from date of Contract award through 9 months. The period of performance for all optional phases, if exercised, is from date of Contract award through 25 months thereafter.

**F.3 PLACE OF PERFORMANCE**

The services shall be performed at the contractor's facility.

**F.4 DELIVERY ADDRESS**

All deliverables shall be submitted electronically to the Government Program Manager identified in Section G of this Contract.

**F.5 METHOD OF DELIVERY**

Electronic copies shall be delivered in Microsoft Office formatted files, unless otherwise specified by the COTR. Electronic submission shall be made via e-mail, unless otherwise directed by the COTR.

**F.6 DELIVERABLE /DELIVERY SCHEDULE**

Item	Due Date (Time After Contract Award)
Kick-Off Meeting	Within 3 Weeks
Monthly Reports	Monthly
Quarterly Reviews and Reports	Reports: 1 Week Prior to Quarterly Review Reviews: Quarterly
Preliminary Design Review (PDR)	Prior to Task Completion
Final Reports and Review	Upon Task Completion

**G.0 CONTRACT ADMINISTRATION DATA****G.1 CONTRACTING OFFICER (CO)**

The Contracting Officer for this Contract is identified below:

Name:	Timothy Davis
Title:	Contracting Officer
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency / Office of Procurement Operations
Address:	Washington, DC 20598
Voice:	[REDACTED]
Fax:	(202) 254-6167
Email:	[REDACTED]

**G.2 CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)**

The COTR for this Contract is identified below:

Name:	Trent DePersia
Title:	Program Manager
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency
Address:	Washington, DC 20598
Voice:	[REDACTED]
Fax:	(202) 254-6170
Email:	[REDACTED]

**G.3 CONTRACTING OFFICER'S AUTHORITY**

The Contracting Officer (CO) assigned to this contract has responsibility for ensuring the performance of all necessary actions for effective contracting; ensuring compliance with the terms of the contract and safeguarding the interests of the United States in its contractual relationships. The CO is the only individual who has the

authority to enter into, administer, or terminate this contract and is the only person authorized to approve changes to any of the requirements under this contract, and notwithstanding any provision contained elsewhere in this contract, this authority remains solely with the CO.

It is the Contractor's responsibility to contact the CO immediately if there is even the appearance of any technical direction that is or may be outside the scope of the contract. The Government will not reimburse the Contractor for any work not authorized by the CO, including work outside the scope of the contract.

**G.4 CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (HSAR 3052.242-72)  
(DEC 2003)**

- (a) The Contracting Officer may designate Government personnel to act as the Contracting Officer's Technical Representative (COTR) to perform functions under the contract such as review or inspection and acceptance of supplies, services, including construction, and other functions of a technical nature. The Contracting Officer will provide a written notice of such designation to the Contractor within five working days after contract award or for construction, not less than five working days prior to giving the contractor the notice to proceed. The designation letter will set forth the authorities and limitations of the COTR under the contract.
- (b) The Contracting Officer cannot authorize the COTR or any other representative to sign documents, such as contracts, contract modifications, etc., that require the signature of the Contracting Officer.

(End of clause)

**G.5 INTERPRETATION OR MODIFICATION**

No oral statement by any person, and no written statement by anyone other than the Contracting Officer (CO), or his/her authorized representative acting within the scope of his/her authority, shall be interpreted as modifying or otherwise affecting the terms of this contract. All requests for interpretation or modification shall be made in writing to the CO.

**G.6 ACCOUNTING AND APPROPRIATION DATA**

The accounting and appropriation data corresponding to this contract is found in Block 14 on the award cover page (SF-26).

**G.7 INVOICING INSTRUCTIONS**

In order to initiate payment, the Contractor shall submit proper invoices for payment in the manner and format described herein:

- (a) The Contractor shall submit an original invoice or send via facsimile or email to the following address:

Department of Homeland Security  
Science & Technology Directorate  
Attn: PPB / Deborah DeVault  
Washington, DC 20528  
email address: [REDACTED]

(b) Each invoice shall include the following:

- (1) Contract Number
- (2) Contractor Name
- (3) Date of Invoice
- (4) Invoice/voucher Number
- (5) Material
- (6) Labor
- (7) Benefits
- (8) Overhead
- (9) Other Direct Cost (ODCs)
- (10) Travel
- (11) Total Costs

Backup documents shall be available for audit/review to DCAA, upon request.

#### **G.8 TRAVEL**

(a) Approval of Foreign Travel: The cost of foreign travel is allowable only when the specific written approval of the Contracting Officer or Contract Specialist responsible for administration of the contract is obtained prior to commencing the trip. Approval must be requested at least 30 days before the scheduled departure date in order that all necessary clearances may be processed. Each individual trip must be approved separately even though it may have been include in a previously approved budget Foreign travel is defined as any travel outside of Canada and the United States and its territories and possessions.

(b) Domestic/local travel shall take place in accordance with the Federal Travel Regulations (FTR) and will be considered reasonable and allowable to the extent permitted by FAR 31.205-46. Documentation will be available upon request to DCAA.

#### **G.9 GOVERNMENT FURNISHED EQUIPMENT/INFORMATION/MATERIALS**

There will be no GFE/GFI/GFM provided as part of this contract.

#### **H.0 SPECIAL CONTRACT REQUIREMENTS**

## **H.1 CONFIDENTIALITY OF INFORMATION**

- (a) To the extent that the work under this contract requires that the Contractor be given access to or be furnished with confidential or proprietary business, technical, or financial information or data belonging to other entities which is clearly marked as confidential or proprietary, the Contractor shall, after receipt thereof, treat such information in confidence and agrees not to appropriate such information to its own use or to disclose such information to third parties unless specifically authorized in writing by the Contracting Officer. The foregoing obligations, however, shall not apply to:
- (1) Information or data which is in the public domain at the time of receipt by the Contractor;
  - (2) Information or data which is published or otherwise subsequently becomes part of the public domain through no fault of the Contractor;
  - (3) Information or data which the Contractor can demonstrate was already in its possession at the time of receipt thereof; or
  - (4) Information or data which the Contractor can demonstrate was received by it from a third party who did not require the Contractor to treat it in confidence.
- (b) The Contractor agrees (1) to enter into an agreement, identical in all material respects to the requirements of paragraph (a) above, with each entity requesting such agreement and that is supplying such confidential or proprietary information or data to the Contractor under this contract and (2) to supply a copy of such agreement to the Contracting Officer, upon written request.
- (c) This clause shall be included in any subcontract under which there is a requirement or there becomes a requirement that the subcontractor be given access to or be furnished with confidential or proprietary business, technical, or financial information or data.

## **H.2 ACCESS RESTRICTION**

The Contractor shall restrict access to those individuals with a valid need-to-know who are actually providing services under this contract. Further dissemination to other contractors, subcontractors, or other government agencies and private individuals or organizations is prohibited unless authorized in writing by the Contracting Officer's Technical Representative (COTR).

## **I.0 CONTRACT CLAUSES**



**I.1 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)**

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://farsite.hill.af.mil> (FAR Clauses 52.###)

[http://www.dhs.gov/dhspublic/interweb/assetlibrary/DHS\\_HSAR\\_With\\_Notice\\_04-01.pdf](http://www.dhs.gov/dhspublic/interweb/assetlibrary/DHS_HSAR_With_Notice_04-01.pdf) (HSAR Clauses 30##.###)

(End of Clause)

**I.2 CLAUSES INCORPORATED BY REFERENCE**

The following FAR and HSAR clauses are incorporated by reference into this contract:

52.202-1	Definitions	Jul 2004
52.203-3	Gratuities	Apr 1984
52.203-5	Covenant Against Contingent Fees	Apr 1984
52.203-7	Anti-Kickback Procedures	Jul 1995
52.203-8	Cancellation, Recession and Recovery of Funds for Illegal or Improper Activity	Jan 1997
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity	Jan 1997
52.203-12	Limitation on Payments to Influence Certain Federal Transactions	Jun 2003
52.204-4	Printed or Copied Double Sided on Recycled Paper	Aug 2000
52.204-7	Central Contractor Registration	Oct 2003
52.209-6	Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment	Jan 2005
52.215-2	Audit and Records – Negotiation	Jun 1999
52.215-8	Order of Precedence – Uniform Contract Format	Oct 1997
52.215-10	Price Reduction for Defective Cost or Pricing Data	Oct 1997
52.215-12	Subcontractor Cost or Pricing Data	Oct 1997
52.215-14	Integrity of Unit Prices	Oct 1997
52.215-15 Alt 1	Pension Adjustments and Asset Reversions	Oct 2004
52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions	Oct 1997
52.215-21	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data – Modifications	Oct 1997
52.216-7	Allowable Cost and Payment	Dec 2002

52.222-1	Notice to the Government of Labor Disputes	Feb 1997
52.222-2	Payment for Overtime Premiums	Jul 1990
52.222-3	Convict Labor	Jun 2003
52.221-21	Prohibition of Segregated Facilities	Feb 1999
52.222-26	Equal Opportunity	Apr 2002
52.222-35	Equal Opportunity for Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	Dec 2001
52.222-36	Affirmative Action for Workers with Disabilities	Jun 1998
52.222-37	Employment Reports on Special Disables Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	Dec 2001
52.223-3 Alt I	Hazardous Material Identification and Material Safety Data - Alternate I	Jan 1997, Jul 1995 (Alt I)
52.223-6	Drug Free Workplace	May 2001
52.223-7	Notice of Radioactive Materials	Jan 1997
52.223-14	Toxic Chemical Release Reporting	Aug 2003
52.225-13	Restrictions on Certain Foreign Purchases	Mar 2005
52.225-16	Sanctioned European Union Country Services	Feb 2000
52.226-1	Utilization of Indian Organizations and Indian-Owned Economic Enterprises	Jun 2000
52.227-1 Alt I	Authorization and Consent - Alternate I	Jul 1995, Apr 1984 (Alt I)
52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement	Aug 1996
52.227-12	Patent Rights Retention by Contractor, Long Form	Jan 1997
52.227-14	Rights in Data - General	Jun 1987
52.227-14/ Alt. IV	Rights in Data - General (Alternate IV)	Jun 1987
52.227-16	Additional Data Rights	Jun 1987
52.228-7	Insurance - Liability to Third Persons	Mar 1996
52.230-2	Cost Accounting Standards	Apr 1998
52.230-6	Administration of Cost Accounting Standards	Nov 1999
52.232-9	Limitation on Withholding of Payments	Apr 1984
52.232-17	Interest	Jun 1996
52.232-22	Limitation of Funds	Apr 1984
52.232-23	Assignment of Claims	Jan 1986
52.232-25	Prompt Payment	Oct 2003
52.232-33	Payment by Electronic Funds Transfer - Central Contractor Registration	Oct 2003
52.233-1	Disputes	Jul 2002
52.233-3 Alt I	Protest After Award - Alternate I	Aug 1996, Jun 1985 (Alt I)

52.233-4	Applicable Law for Breach of Contract Claim	Oct 2004
52.242-1	Notice of Intent to Disallow Costs	Apr 1984
52.242-3	Penalties for Unallowable Costs	May 2001
52.242-4	Certification of Final Indirect Costs.	Jan 1997
52.242-13	Bankruptcy	Jul 1995
52.243-2 Alt V	Changes – Cost Reimbursement – Alternate V	Aug 1987, Apr 1984 (Alt V)
52.244-2 Alt II	Subcontracts – Alternate II	Aug 1998, Aug 1998 (Alt II)
52.244-5	Competition in Subcontracting	Dec 1996
52.244-6	Subcontracts for Commercial Items	Dec 2004
52.245-5	Government Property (Cost-Reimbursement, Time-and-Materials, or Labor Hour Contracts)	May 2004
52.247-1	Commercial Bill of Lading Notations	Apr 1984
52.247-63	Preference for U.S. Flag Air Carriers	Jun 2003
52.249-6	Termination (Cost Reimbursement)	Sep 1996
52.249-14	Excusable Delays	Apr 1984
52.251-1	Government Supply Sources	Apr 1984
52.253-1	Computer Generated Forms	Jan 1991
3052.219-70	Small Business Subcontracting Program Reporting	Dec 2003

### I.3 NOTIFICATION OF OWNERSHIP CHANGES (FAR 52.215-19) (OCT 1997)

- (a) The Contractor shall make the following notifications in writing:
- (1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.
  - (2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.
- (b) The Contractor shall --
- (1) Maintain current, accurate, and complete inventory records of assets and their costs;
  - (2) Provide the ACO or designated representative ready access to the records upon request;
  - (3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and
  - (4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

- (c) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(End of Clause)

**I.4 NOTIFICATION OF EMPLOYEES RIGHTS CONCERNING PAYMENT OF UNION DUES AND FEES (FAR 52.222-39) (DEC 2004)**

- (a) *Definition.* As used in this clause—  
“United States” means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.
- (b) *Except* as provided in paragraph (e) of this clause, during the term of this contract, the Contractor shall post a notice, in the form of a poster, informing employees of their rights concerning union membership and payment of union dues and fees, in conspicuous places in and about all its plants and offices, including all places where notices to employees are customarily posted. The notice shall include the following information (except that the information pertaining to National Labor Relations Board shall not be included in notices posted in the plants or offices of carriers subject to the Railway Labor Act, as amended (45 U.S.C. 151-188)).

**Notice to Employees**

Under Federal law, employees cannot be required to join a union or maintain membership in a union in order to retain their jobs. Under certain conditions, the law permits a union and an employer to enter into a union-security agreement requiring employees to pay uniform periodic dues and initiation fees. However, employees who are not union members can object to the use of their payments for certain purposes and can only be required to pay their share of union costs relating to collective bargaining, contract administration, and grievance adjustment.

If you do not want to pay that portion of dues or fees used to support activities not related to collective bargaining, contract administration, or grievance adjustment, you are entitled to an appropriate reduction in your payment. If you believe that you have been required to pay dues or fees used in part to support activities not related to collective bargaining, contract administration, or grievance adjustment, you may be entitled to a refund and to an appropriate reduction in future payments.

For further information concerning your rights, you may wish to contact the National Labor Relations Board (NLRB) either at one of its Regional offices or at the following address or toll free number:

National Labor Relations Board  
Division of Information  
1099 14th Street, N.W.  
Washington, DC 20570  
1-866-667-6572  
1-866-316-6572 (TTY)

To locate the nearest NLRB office, see NLRB's website at <http://www.nlr.gov>.

- (c) The Contractor shall comply with all provisions of Executive Order 13201 of February 17, 2001, and related implementing regulations at 29 CFR Part 470, and orders of the Secretary of Labor.
- (d) In the event that the Contractor does not comply with any of the requirements set forth in paragraphs (b), (c), or (g), the Secretary may direct that this contract be cancelled, terminated, or suspended in whole or in part, and declare the Contractor ineligible for further Government contracts in accordance with procedures at 29 CFR Part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures. Such other sanctions or remedies may be imposed as are provided by 29 CFR Part 470, which implements Executive Order 13201, or as are otherwise provided by law.
- (e) The requirement to post the employee notice in paragraph (b) does not apply to—
  - (1) Contractors and subcontractors that employ fewer than 15 persons;
  - (2) Contractor establishments or construction work sites where no union has been formally recognized by the Contractor or certified as the exclusive bargaining representative of the Contractor's employees;
  - (3) Contractor establishments or construction work sites located in a jurisdiction named in the definition of the United States in which the law of that jurisdiction forbids enforcement of union-security agreements;
  - (4) Contractor facilities where upon the written request of the Contractor, the Department of Labor Deputy Assistant Secretary for Labor-Management Programs has waived the posting requirements with respect to any of the Contractor's facilities if the Deputy Assistant Secretary finds that the Contractor has demonstrated that—
    - (i) The facility is in all respects separate and distinct from activities of the Contractor related to the performance of a contract; and
    - (ii) Such a waiver will not interfere with or impede the effectuation of the Executive order; or
  - (5) Work outside the United States that does not involve the recruitment or employment of workers within the United States.
- (f) The Department of Labor publishes the official employee notice in two variations; one for contractors covered by the Railway Labor Act and a second for all other contractors. The Contractor shall—
  - (1) Obtain the required employee notice poster from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW, Room N-5605,

Washington, DC 20210, or from any field office of the Department's Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;

- (2) Download a copy of the poster from the Office of Labor-Management Standards website at <http://www.olms.dol.gov>; or
  - (3) Reproduce and use exact duplicate copies of the Department of Labor's official poster.
- (g) The Contractor shall include the substance of this clause in every subcontract or purchase order that exceeds the simplified acquisition threshold, entered into in connection with this contract, unless exempted by the Department of Labor Deputy Assistant Secretary for Labor-Management Programs on account of special circumstances in the national interest under authority of 29 CFR 470.3(c). For indefinite quantity subcontracts, the Contractor shall include the substance of this clause if the value of orders in any calendar year of the subcontract is expected to exceed the simplified acquisition threshold. Pursuant to 29 CFR Part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures, the Secretary of Labor may direct the Contractor to take such action in the enforcement of these regulations, including the imposition of sanctions for noncompliance with respect to any such subcontract or purchase order. If the Contractor becomes involved in litigation with a subcontractor or vendor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

(End of clause)

#### **I.5 RIGHTS TO PROPOSAL DATA (TECHNICAL) (FAR 52.227-23) (JUN 1987)**

Except for data contained in NA, it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data—General" clause contained in this contract) in and to the technical data contained in the proposal dated February 8 2005, upon which this contract is based.

(End of clause)

#### **I.6 NOTIFICATION OF CHANGES (FAR 52.243-7) (APR 1984)**

- (h) *Definitions.* "Contracting Officer," as used in this clause, does not include any representative of the Contracting Officer. "Specifically Authorized Representative (SAR)," as used in this clause, means any person the Contracting Officer has so designated by written notice (a copy of which shall be provided to the Contractor) which shall refer to this paragraph and shall be issued to the designated representative before the SAR exercises such authority.
- (i) *Notice.* The primary purpose of this clause is to obtain prompt reporting of Government conduct that the Contractor considers to constitute a change to this contract. Except for changes identified as such in writing and signed by the

Contracting Officer, the Contractor shall notify the Administrative Contracting Officer in writing promptly, within five (5) calendar days from the date that the Contractor identifies any Government conduct (including actions, inactions, and written or oral communications) that the Contractor regards as a change to the contract terms and conditions. On the basis of the most accurate information available to the Contractor, the notice shall state—

- (1) The date, nature, and circumstances of the conduct regarded as a change;
  - (2) The name, function, and activity of each Government individual and Contractor official or employee involved in or knowledgeable about such conduct;
  - (3) The identification of any documents and the substance of any oral communication involved in such conduct;
  - (4) In the instance of alleged acceleration of scheduled performance or delivery, the basis upon which it arose;
  - (5) The particular elements of contract performance for which the Contractor may seek an equitable adjustment under this clause, including—
    - (i) What contract line items have been or may be affected by the alleged change;
    - (ii) What labor or materials or both have been or may be added, deleted, or wasted by the alleged change;
    - (iii) To the extent practicable, what delay and disruption in the manner and sequence of performance and effect on continued performance have been or may be caused by the alleged change;
    - (iv) What adjustments to contract price, delivery schedule, and other provisions affected by the alleged change are estimated; and
  - (6) The Contractor's estimate of the time by which the Government must respond to the Contractor's notice to minimize cost, delay or disruption of performance.
- (j) *Continued performance.* Following submission of the notice required by paragraph (b) of this clause, the Contractor shall diligently continue performance of this contract to the maximum extent possible in accordance with its terms and conditions as construed by the Contractor, unless the notice reports a direction of the Contracting Officer or a communication from a SAR of the Contracting Officer, in either of which events the Contractor shall continue performance; provided, however, that if the Contractor regards the direction or communication as a change as described in paragraph (b) of this clause, notice shall be given in the manner provided. All directions, communications, interpretations, orders and similar actions of the SAR shall be reduced to writing promptly and copies furnished to the Contractor and to the Contracting Officer. The Contracting Officer shall promptly countermand any action which exceeds the authority of the SAR.
- (k) *Government response.* The Contracting Officer shall promptly, within 15 calendar days after receipt of notice, respond to the notice in writing. In responding, the Contracting Officer shall either—
- (1) Confirm that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance;

- (2) Countermand any communication regarded as a change;
  - (3) Deny that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance; or
  - (4) In the event the Contractor's notice information is inadequate to make a decision under paragraphs (d)(1), (2), or (3) of this clause, advise the Contractor what additional information is required, and establish the date by which it should be furnished and the date thereafter by which the Government will respond.
- (l) *Equitable adjustments.*
- (1) If the Contracting Officer confirms that Government conduct effected a change as alleged by the Contractor, and the conduct causes an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether changed or not changed by such conduct, an equitable adjustment shall be made—
    - (i) In the contract price or delivery schedule or both; and
    - (ii) In such other provisions of the contract as may be affected.
  - (2) The contract shall be modified in writing accordingly. In the case of drawings, designs or specifications which are defective and for which the Government is responsible, the equitable adjustment shall include the cost and time extension for delay reasonably incurred by the Contractor in attempting to comply with the defective drawings, designs or specifications before the Contractor identified, or reasonably should have identified, such defect. When the cost of property made obsolete or excess as a result of a change confirmed by the Contracting Officer under this clause is included in the equitable adjustment, the Contracting Officer shall have the right to prescribe the manner of disposition of the property. The equitable adjustment shall not include increased costs or time extensions for delay resulting from the Contractor's failure to provide notice or to continue performance as provided, respectively, in paragraphs (b) and (c) of this clause.

(End of clause)

**I.7 PROHIBITION ON CONTRACTS WITH CORPORATE EXPATRIATES (HSAR 3052.209-70) (DEC 2003)**

- (a) *Prohibitions.*  
Section 835 of Public Law 107-296, prohibits the Department of Homeland Security from entering into any contract with a foreign incorporated entity after November 25, 2002, which is treated as an inverted domestic corporation as defined in this clause. The Secretary shall waive the prohibition with respect to any specific contract if the Secretary determines that the waiver is required in the interest of homeland security, or to prevent the loss of any jobs in the United States or prevent the Government from incurring any additional costs that otherwise would not occur.
- (b) *Definitions.* As used in this clause:  
"Expanded Affiliated Group" means an affiliated group as defined in section 1504(a) of the Internal Revenue Code of 1986 (without regard to section 1504(b))



of such Code), except that section 1504 of such Code shall be applied by substituting 'more than 50 percent' for 'at least 80 percent' each place it appears. "Foreign Incorporated Entity" means any entity which is, or but for subsection (b) of Section 835 of the Homeland Security Act, Public Law 107-296, would be, treated as a foreign corporation for purposes of the Internal Revenue Code of 1986.

"Inverted Domestic Corporation." A foreign incorporated entity shall be treated as an inverted domestic corporation if, pursuant to a plan (or a series of related transactions)—

- (1) The entity completes after November 25, 2002, the direct or indirect acquisition of substantially all of the properties held directly or indirectly by a domestic corporation or substantially all of the properties constituting a trade or business of a domestic partnership;
  - (2) After the acquisition at least 80 percent of the stock (by vote or value) of the entity is held—
    - (i) In the case of an acquisition with respect to a domestic corporation, by former shareholders of the domestic corporation by reason of holding stock in the domestic corporation; or
    - (ii) In the case of an acquisition with respect to a domestic partnership, by former partners of the domestic partnership by reason of holding a capital or profits interest in the domestic partnership; and
  - (3) The expanded affiliated group which after the acquisition includes the entity does not have substantial business activities in the foreign country in which or under the law of which the entity is created or organized when compared to the total business activities of such expanded affiliated group. "Person", "domestic", and "foreign" have the meanings given such terms by paragraphs (1), (4), and (5) of section 7701(a) of the Internal Revenue Code of 1986, respectively.
- (c) Special rules. The following definitions and special rules shall apply when determining whether a foreign incorporated entity should be treated as an inverted domestic corporation.
- (1) Certain Stock Disregarded. For the purpose of treating a foreign incorporated entity as an inverted domestic corporation these shall not be taken into account in determining ownership:
    - (i) stock held by members of the expanded affiliated group which includes the foreign incorporated entity; or
    - (ii) stock of such entity which is sold in a public offering related to the acquisition described in subsection (b)(1) of Section 835 of the Homeland Security Act, Public Law 107-296.
  - (2) Plan Deemed In Certain Cases. If a foreign incorporated entity acquires directly or indirectly substantially all of the properties of a domestic corporation or partnership during the 4-year period beginning on the date which is after the date of enactment of this Act and which is 2 years before the ownership requirements of subsection (b)(2) are met, such actions shall be treated as pursuant to a plan.

- (3) **Certain Transfers Disregarded.** The transfer of properties or liabilities (including by contribution or distribution) shall be disregarded if such transfers are part of a plan a principal purpose of which is to avoid the purposes of this section.
- (d) **Special Rule for Related Partnerships.**  
For purposes of applying Section 835(b) of Public Law 107-296 to the acquisition of a domestic partnership, except as provided in regulations, all domestic partnerships which are under common control (within the meaning of section 482 of the Internal Revenue Code of 1986) shall be treated as a partnership.
- (e) **Treatment of Certain Rights.**
- (1) Certain rights shall be treated as stocks to the extent necessary to reflect the present value of all equitable interests incident to the transaction, as follows:
- (i) warrants;
  - (ii) options;
  - (iii) contracts to acquire stock;
  - (iv) convertible debt instruments; and
  - (v) others similar interests.
- (2) Rights labeled as stocks shall not be treated as stocks whenever it is deemed appropriate to do so to reflect the present value of the transaction or to disregard transactions whose recognition would defeat the purpose of Section 835.
- (f) **Disclosure.**  
By signing and submitting its offer, an Offeror under this solicitation represents that it not a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of Section 835 of the Homeland Security Act, Public Law 107-296 of November 25, 2002.
- (g) If a waiver has been granted, a copy of the approved waiver shall be attached to the bid or proposal.

(End of provision)

#### **I.8 INSURANCE (HSAR 3052.228-70) (DEC 2003)**

In accordance with the clause entitled "Insurance - Work on a Government Installation" [or Insurance - Liability to Third Persons] in Section I, insurance of the following kinds and minimum amounts shall be provided and maintained during the period of performance of this contract:

- (a) **Worker's compensation and employer's liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(a).
- (b) **General liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(b).
- (c) **Automobile liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(c).

(End of clause)

J.0 ATTACHMENTS

RESERVED

<b>AWARD/CONTRACT</b>	1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)	RATING	PAGE OF PAGES 1   23
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2. CONTRACT (Proc. Inst. Ident.) NO. HSHQDC-05-C-00032	3. EFFECTIVE DATE 09/30/2005	4. REQUISITION/PURCHASE REQUEST/PROJECT NO. RBAR-05-00156
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5 ISSUED BY Department of Homeland Security Office of Procurement Operations 245 Murray Drive Bldg. 410 Washington DC 20528	CODE DHS	6. ADMINISTERED BY (If other than Item 5) Department of Homeland Security Office of Procurement Operations 245 Murray Drive Bldg. 410 Washington DC 20528	CODE DHS
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7. NAME AND ADDRESS OF CONTRACTOR (No., Street, City, Country, State and ZIP Code)  RAPISCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION 352 EAST JAVA DRIVE SUNNYVALE CA 940891328	8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input checked="" type="checkbox"/> OTHER (See below)
	9. DISCOUNT FOR PROMPT PAYMENT  Net 30
	10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN:  ITEM G7

CODE 0829118430000	FACILITY CODE
11. SHIP TO/MARK FOR Department of Homeland Security 245 Murray Lane Bldg. 410 Deborah DeVault Science & Technology Directorate Washington DC 20528	CODE DHS
12. PAYMENT WILL BE MADE BY DHS- Science and Technology Dir. 245 Murray Lane Bldg. 410 Attn: Deborah DeVault Washington DC 20528	CODE DHS-SCIENCE&TECH

13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 USC 2304 (c) ( ) <input type="checkbox"/> 41 USC 253 (c) ( )	14. ACCOUNTING AND APPROPRIATION DATA  See Schedule
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15A. ITEM	15B. SUPPLIES/SERVICES	15C. QTY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
Continued					

15G. TOTAL AMOUNT OF CONTRACT	\$504,546.00
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(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
X	A	SOLICITATION/CONTRACT FORM	1-2	X	I	CONTRACT CLAUSES	11-22
X	B	SUPPLIES OR SERVICES AND PRICE/COST	3-4	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
X	C	DESCRIPTION/SPECS/WORK STATEMENT	4-7	X	J	LIST OF ATTACHMENTS	23
X	D	PACKAGING AND MARKING	7	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
X	E	INSPECTION AND ACCEPTANCE	7-8	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS		
X	F	DELIVERIES OR PERFORMANCE	8-9		L INSTR., CONDS., AND NOTICES TO OFFERORS		
X	G	CONTRACT ADMINISTRATION DATA	9-11	M	EVALUATION FACTORS FOR AWARD		
X	H	SPECIAL CONTRACT REQUIREMENTS	12				

CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17. <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return <u>1</u> copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)	18. <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____ including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.
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18A. NAME AND TITLE OF SIGNER (Type or print)	20A. NAME OF CONTRACTING OFFICER
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18B. NAME OF CONTRACTOR BY _____ (Signature of person authorized to sign)	19C. DATE SIGNED	20B. UNITED STATES OF AMERICA BY _____ (Signature of the Contracting Officer)	20C. DATE SIGNED
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NAME OF OFFEROR OR CONTRACTOR  
**RAPISCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION**

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0001	<p>Tax ID Number: 942367397  DUNS Number: 082911843+0000</p> <p>Accounting Info:  NONE000 000 RX 06 10 DC 005 06 01 0000 00 00 00  00 GE DL 2550 000000  FOB: Destination  Period of Performance: 09/30/2005 to 06/30/2006</p> <p>Funding is provided for Phase I in accordance with the Statement of Work.  Obligated Amount: \$504,546.00</p> <p>TTA-1: One or more award(s) may be provided for developmental products improvement for systems capable of detecting explosive compounds in vehicles.</p> <p>TTA-2: One or more award(s) may be provided to research and develop future or novel technologies to detect improvised explosives in vehicles, leaving behind packages, or carried by suicide bombers.</p> <p>Total amount of award: \$504,546.00. The obligation for this award is shown in box 15G.</p>				504,546.00

**B.0 SUPPLIES/SERVICES AND PRICES/COSTS****B.1 CONTRACT TYPE AND SCHEDULE OF ITEMS**

The purpose of this cost-type contract is to provide prototype research and development (R&D) for the Department of Homeland Security for the Prototypes and Technology for Improvised Explosives Device Detection program (PTIEDD) program which seeks to develop, rapid prototype, and improve products and systems capable of detecting explosive compounds in vehicles.

**B.2 CONTRACT LINE ITEMS**

1. The Contractor shall provide said R&D Contract Line Items (CLINs) identified below on a Cost Plus Fixed Fee (CPFF) basis. The fixed fee for all CLINs is 6.0%. The Contractor shall consider the Estimated Costs to be Not-To-Exceed (NTE) ceilings that can be changed only through a contract modification.

<i>CLIN</i>	<i>Supplies/Services</i>	<i>Qty</i>	<i>Unit</i>	<i>Est Unit Cost</i>	<i>Fixed Fee</i>	<i>Total CPFF</i>
0001	PTIEDD Phase I	1	Lot			
0002	PTIEDD Phase II (Option 1)	1	Lot			
0003	PTIEDD Phase III (Option 2)	1	Lot			
	<i>Total Not-to-Exceed</i>					

2. The intent of the Government is that this contract be considered a "completion" cost effort. That is, the contractor is obliged to perform through to phase completion. Minor increases in costs will most likely be covered. Significant changes due to the Contractor's underestimating the level of effort or any changes to the Contractor's technical approach will require Government evaluation of the Contractor's progress. The Contracting Officer may request a revised proposal at any time should the situation warrant. The Contractor is obligated to notify the Contracting Officer upon exhaustion of 75% of funding. All decisions regarding additional funding will be subject to the availability of funds.

**B.3 OPTIONS**

1. This PTIEDD project is being conducted in three phases: Phase I (CLIN 0001), develops the idea sufficient to conduct a Preliminary Design Review; Phase II (CLIN 0002, Option 1) develops the idea further and completes a Critical Design Review; Phase III (CLIN 0003, Option 2) is the final component and integrated system testing of the technology. Ninety days before the conclusion of the current phase, contractors making sufficient progress towards the next phase as determined by the contracting officer and program manager, will be directed to submit detailed updated

technical, management, and cost proposals for the next phase within 14 calendar days. At that time, the Government evaluation team will determine, within 14 calendar days, if it is in the government's best interest to exercise the subsequent option. *Prior to 60 days before the end of the current phase, the government will communicate its intention to the contractor. At that time a modification will be prepared incorporating the revised technical & managerial approaches and exercising the option. Said modification will be signed by both parties prior to the start of the option period.*

## **C.0 PHASE I STATEMENT OF WORK**

### **C.1 SCOPE**

Rapiscan Systems High Energy Inspection Corporation located in Sunnyvale, CA, hereinafter referred to as Contractor shall perform the following:

All systems engineering efforts required to research, develop, design, fabricate and test a backscatter imaging system for the non-intrusive detection of suicide bombers.

The system that will be developed as part of this effort will be based on the technology incorporated within the Rapiscan Systems Secure 1000 personnel Screening System, developed in collaboration with the Technical Support Working Group (TSWG).

Phase I consists of the development of a Phase program plan, development of a system performance specification, evaluation of the system safety, a preliminary hardware/software design, a Preliminary Design Review (PDR), and project management. The majority of the Phase I work will be conducted at the Contractor's facility and at corporate headquarters for Rapiscan Systems.

Phase II consists of the following tasks: development of a final Phase III program plan. Creation of detailed drawings and other documentation required for fabrication, assembly, installation and testing of the prototype backscatter imaging system, a Comprehensive Design Review, and project management. Phase III consists of the following tasks: fabrication, assembly, installation of the prototype backscatter imaging system at the Contractor's site for testing and evaluation; and project management. These activities will be conducted at Contractor's facility and at the corporate headquarters for Rapiscan Systems.

Phase III also includes installation and customer acceptance test and evaluation at a government furnished test site as part of the delivery of the system to HSARPA. For the purposes of this draft SOW, the government test site is assumed to be located in New Jersey. After the selection of the government test site has been finalized, the Contractor shall update the program plan for relocating the system to the test site.

The period of performance for Phase I is nine months. The approximate period of performance for Phase II is five months and the approximate period of performance for Phase III is twelve months.

Phase I Project milestones include the following:

- System Performance Specification
- Radiation Safety Evaluation
- PDF
- Updated Project Plan

Project Milestones for Phases II and III include the following:

- CDR
- Phase II Plan
- Phase II Detailed Design
- Phase II Prototype Fabrication
- Phase II Prototype Installation
- Factory Acceptance Test
- Customer Acceptance Test

## C.2 PHASE I ACTIVITIES

Contractor shall conduct the systems engineering and research to develop a prototype backscatter imaging system. Design goals are as follows:

- Covert inspection of moving subjects.
- Detection of explosives on suicide bombers through clothing, backpacks, and other packages.
- Radiation safe and meets the requirements of ANSI Standard 43.17 "Radiation Safety for personnel Screening Systems Using X-Ray."

Contractor shall evaluate the performance of the backscatter imaging system on the basis of:

1. The ability to detect concealed explosives and "leave-behind" bombs, weapons, and ceramic components as a person walks through the imaging system.
2. The safety of the system to screen the general public.
3. The evaluation of different deployment scenarios that optimize the protection specifically for large gatherings, points of interest, transportation systems, and special events.

Contractor shall conduct the systems engineering, research, development and laboratory analysis to identify and validate the backscatter imaging system design that best meets the design goals.

This includes:



**System Performance Specification.** Contractor shall develop the operational performance specification from experimental data generated with a realistic testbed and simulated threats.

**Radiation Safety Evaluation.** Contractor shall conduct the systems engineering, research and development to identify and validate the radiation safety system design. The objective is to demonstrate that the backscatter system is safe and that an inspection will not exceed the limits specified by ANSI N43.17 for a general use system.

**Preliminary System Design.** Contractor shall conduct the systems engineering, research and development to identify, design, and validate the overall system and major subsystems. This includes, the imaging system, the safety systems, and the electrical and mechanical subsystems and controls.

### **C.3 TEST AND EVALUATION**

**Preliminary Design Review.** Contractor shall support conduct a PDR. Contractor shall submit all presentation materials at the PDR. These materials will include a preliminary system concept, performance estimate, and experimental plans.

### **C.4 PROGRAM MANAGEMENT**

Contractor shall maintain and implement a Management Program, which clearly defines how the development effort will be managed and controlled. Contractor shall organize, coordinate, and control all internal project activities (including those which are assigned to subcontractors) to ensure the correct and timely delivery of all supplies and services specified in this contract. Contractor shall maintain a program management office function to manage all technical performance, costs, schedule, and delivery requirements of this Program. The Contractor shall report progress at a program reviews and with presentation materials.

### **C.5 DELIVERABLES**

The following are the deliverables associated with this Program:

The Phase I deliverables include:

- Monthly and Quarterly Progress Status Reports
- Phase I Technical Report and Phase II Program Plan
- Preliminary Design and Feasibility Review

The Phase II deliverables include:

- Monthly and Quarterly Progress Status Reports
- Phase II Technical Report and Phase III Program Plan
- Comprehensive Design Review

The Phase III deliverables include:

- Monthly and Quarterly Progress Status Reports
- Phase III Final Report
- Operational Testing Results
- Prototype inspection System along with operator and Maintenance Manuals.

### **C.6 GOVERNMENT FURNISHED EQUIPMENT/INFORMATION/MATERIALS**

#### **1. Government Furnished Information:**

The government will evaluate any written request for information or documentation on a case-by-case basis and at its discretion either accept or reject the request.

#### **2. Government Furnished Material:**

None.

### **D.0 PACKAGING AND MARKING**

#### **D.1 PACKAGING AND MARKING**

Phase I deliverables shall be electronically submitted to [REDACTED]  
Packaging and Marking instructions for Phase II and III deliverables will be addressed at the time of option exercise.

### **E.0 INSPECTION AND ACCEPTANCE**

#### **E.1 CLAUSES INCORPORATED BY REFERENCE**

The following FAR clauses are available in full text at <http://farsite.hill.af.mil> and incorporated by reference into this contract:

52.246-9	Inspection of Research and Development (Short Form)	Apr 1984
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#### **E.2 INSPECTION AND ACCEPTANCE BY THE GOVERNMENT**

The Contracting Officer's Technical Representative (COTR) identified in Section G of this Contract is responsible for inspection and acceptance of all services, incoming shipments, documents, and services performed specifically for the Contract.

**E.3 ACCEPTANCE CRITERIA**

Certification by the Government of satisfactory services provided is contingent upon the Contractor performing in accordance with the terms and conditions of the contract and all modifications.

**F.0 DELIVERIES OR PERFORMANCE****F.1 CLAUSES INCORPORATED BY REFERENCE**

The following FAR clauses are available in full text at <http://farsite.hill.af.mil> and incorporated by reference into this contract:

52.242-15 Alt I	Stop-Work Order (Alternate I)	Aug 1989 Apr 1984 (Alt I)
52.247-34	F.O.B. Destination	Nov 1991

**F.2 PERIOD OF PERFORMANCE**

The period of performance of Phase I of this Contract is from date of Contract award through 9 months. The period of performance for all optional phases, if exercised, is from date of Contract award through 25 months thereafter.

**F.3 PLACE OF PERFORMANCE**

The services shall be performed at the contractor's facility.

**F.4 DELIVERY ADDRESS**

All deliverables shall be submitted electronically to the Government Program Manager identified in Section G of this Contract.

**F.5 METHOD OF DELIVERY**

Electronic copies shall be delivered in Microsoft Office formatted files, unless otherwise specified by the COTR. Electronic submission shall be made via e-mail, unless otherwise directed by the COTR.

**F.6 DELIVERABLE /DELIVERY SCHEDULE**

Item	Due Date (Time After Contract Award)
Kick-Off Meeting	Within 3 Weeks
Monthly Reports	Monthly
Quarterly Reviews and Reports	Reports: 1 Week Prior to Quarterly Review Reviews: Quarterly
Preliminary Design Review (PDR)	Prior to Task Completion
Final Reports and Review	Upon Task Completion

**G.0 CONTRACT ADMINISTRATION DATA****G.1 CONTRACTING OFFICER (CO)**

The Contracting Officer for this Contract is identified below:

Name:	Timothy Davis
Title:	Contracting Officer
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency / Office of Procurement Operations
Address:	Washington, DC 20598
Voice:	[REDACTED]
Fax:	(202) 254-6167
Email:	[REDACTED]

**G.2 CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)**

The COTR for this Contract is identified below:

Name:	Trent DePersia
Title:	Program Manager
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency
Address:	Washington, DC 20598
Voice:	[REDACTED]
Fax:	(202) 254-6170
Email:	[REDACTED]

**G.3 CONTRACTING OFFICER'S AUTHORITY**

The Contracting Officer (CO) assigned to this contract has responsibility for ensuring the performance of all necessary actions for effective contracting; ensuring compliance with the terms of the contract and safeguarding the interests of the United States in its contractual relationships. The CO is the only individual who has the

authority to enter into, administer, or terminate this contract and is the only person authorized to approve changes to any of the requirements under this contract, and notwithstanding any provision contained elsewhere in this contract, this authority remains solely with the CO.

It is the Contractor's responsibility to contact the CO immediately if there is even the appearance of any technical direction that is or may be outside the scope of the contract. The Government will not reimburse the Contractor for any work not authorized by the CO, including work outside the scope of the contract.

**G.4 CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (HSAR 3052.242-72)  
(DEC 2003)**

- (a) The Contracting Officer may designate Government personnel to act as the Contracting Officer's Technical Representative (COTR) to perform functions under the contract such as review or inspection and acceptance of supplies, services, including construction, and other functions of a technical nature. The Contracting Officer will provide a written notice of such designation to the Contractor within five working days after contract award or for construction, not less than five working days prior to giving the contractor the notice to proceed. The designation letter will set forth the authorities and limitations of the COTR under the contract.
- (b) The Contracting Officer cannot authorize the COTR or any other representative to sign documents, such as contracts, contract modifications, etc., that require the signature of the Contracting Officer.

(End of clause)

**G.5 INTERPRETATION OR MODIFICATION**

No oral statement by any person, and no written statement by anyone other than the Contracting Officer (CO), or his/her authorized representative acting within the scope of his/her authority, shall be interpreted as modifying or otherwise affecting the terms of this contract. All requests for interpretation or modification shall be made in writing to the CO.

**G.6 ACCOUNTING AND APPROPRIATION DATA**

The accounting and appropriation data corresponding to this contract is found in Block 14 on the award cover page (SF-26).

**G.7 INVOICING INSTRUCTIONS**

In order to initiate payment, the Contractor shall submit proper invoices for payment in the manner and format described herein:

- (a) The Contractor shall submit an original invoice or send via facsimile or email to the following address:

Department of Homeland Security  
Science & Technology Directorate  
Attn: PPB / Deborah DeVault  
Washington, DC 20528  
email address: [REDACTED]

(b) Each invoice shall include the following:

- (1) Contract Number
- (2) Contractor Name
- (3) Date of Invoice
- (4) Invoice/voucher Number
- (5) Material
- (6) Labor
- (7) Benefits
- (8) Overhead
- (9) Other Direct Cost (ODCs)
- (10) Travel
- (11) Total Costs

Backup documents shall be available for audit/review to DCAA, upon request.

#### **G.8 TRAVEL**

(a) **Approval of Foreign Travel:** The cost of foreign travel is allowable only when the specific written approval of the Contracting Officer or Contract Specialist responsible for administration of the contract is obtained prior to commencing the trip. Approval must be requested at least 30 days before the scheduled departure date in order that all necessary clearances may be processed. Each individual trip must be approved separately even though it may have been include in a previously approved budget Foreign travel is defined as any travel outside of Canada and the United States and its territories and possessions.

(b) Domestic/local travel shall take place in accordance with the Federal Travel Regulations (FTR) and will be considered reasonable and allowable to the extent permitted by FAR 31.205-46. Documentation will be available upon request to DCAA.

#### **G.9 GOVERNMENT FURNISHED EQUIPMENT/INFORMATION/MATERIALS**

There will be no GFE/GFI/GFM provided as part of this contract.

#### **H.0 SPECIAL CONTRACT REQUIREMENTS**

## H.1 CONFIDENTIALITY OF INFORMATION

- (a) To the extent that the work under this contract requires that the Contractor be given access to or be furnished with confidential or proprietary business, technical, or financial information or data belonging to other entities which is clearly marked as confidential or proprietary, the Contractor shall, after receipt thereof, treat such information in confidence and agrees not to appropriate such information to its own use or to disclose such information to third parties unless specifically authorized in writing by the Contracting Officer. The foregoing obligations, however, shall not apply to:
- (1) Information or data which is in the public domain at the time of receipt by the Contractor;
  - (2) Information or data which is published or otherwise subsequently becomes part of the public domain through no fault of the Contractor;
  - (3) Information or data which the Contractor can demonstrate was already in its possession at the time of receipt thereof; or
  - (4) Information or data which the Contractor can demonstrate was received by it from a third party who did not require the Contractor to treat it in confidence.
- (b) The Contractor agrees (1) to enter into an agreement, identical in all material respects to the requirements of paragraph (a) above, with each entity requesting such agreement and that is supplying such confidential or proprietary information or data to the Contractor under this contract and (2) to supply a copy of such agreement to the Contracting Officer, upon written request.
- (c) This clause shall be included in any subcontract under which there is a requirement or there becomes a requirement that the subcontractor be given access to or be furnished with confidential or proprietary business, technical, or financial information or data.

## H.2 ACCESS RESTRICTION

The Contractor shall restrict access to those individuals with a valid need-to-know who are actually providing services under this contract. Further dissemination to other contractors, subcontractors, or other government agencies and private individuals or organizations is prohibited unless authorized in writing by the Contracting Officer's Technical Representative (COTR).

## I.0 CONTRACT CLAUSES

**I.1 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)**

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

<http://farsite.hill.af.mil> (FAR Clauses 52.###)

[http://www.dhs.gov/dhspublic/interweb/assetlibrary/DHS\\_HSAR\\_With\\_Notice\\_04-01.pdf](http://www.dhs.gov/dhspublic/interweb/assetlibrary/DHS_HSAR_With_Notice_04-01.pdf) (HSAR Clauses 30##.###)

(End of Clause)

**I.2 CLAUSES INCORPORATED BY REFERENCE**

The following FAR and HSAR clauses are incorporated by reference into this contract:

52.202-1	Definitions	Jul 2004
52.203-3	Gratuities	Apr 1984
52.203-5	Covenant Against Contingent Fees	Apr 1984
52.203-7	Anti-Kickback Procedures	Jul 1995
52.203-8	Cancellation, Recession and Recovery of Funds for Illegal or Improper Activity	Jan 1997
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity	Jan 1997
52.203-12	Limitation on Payments to Influence Certain Federal Transactions	Jun 2003
52.204-4	Printed or Copied Double Sided on Recycled Paper	Aug 2000
52.204-7	Central Contractor Registration	Oct 2003
52.209-6	Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment	Jan 2005
52.215-2	Audit and Records - Negotiation	Jun 1999
52.215-8	Order of Precedence - Uniform Contract Format	Oct 1997
52.215-10	Price Reduction for Defective Cost or Pricing Data	Oct 1997
52.215-12	Subcontractor Cost or Pricing Data	Oct 1997
52.215-14	Integrity of Unit Prices	Oct 1997
52.215-15 Alt 1	Pension Adjustments and Asset Reversions	Oct 2004
52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions	Oct 1997
52.215-21	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data - Modifications	Oct 1997
52.216-7	Allowable Cost and Payment	Dec 2002



52.222-1	Notice to the Government of Labor Disputes	Feb 1997
52.222-2	Payment for Overtime Premiums	Jul 1990
52.222-3	Convict Labor	Jun 2003
52.221-21	Prohibition of Segregated Facilities	Feb 1999
52.222-26	Equal Opportunity	Apr 2002
52.222-35	Equal Opportunity for Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	Dec 2001
52.222-36	Affirmative Action for Workers with Disabilities	Jun 1998
52.222-37	Employment Reports on Special Disables Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	Dec 2001
52.223-3 Alt I	Hazardous Material Identification and Material Safety Data - Alternate I	Jan 1997, Jul 1995 (Alt I)
52.223-6	Drug Free Workplace	May 2001
52.223-7	Notice of Radioactive Materials	Jan 1997
52.223-14	Toxic Chemical Release Reporting	Aug 2003
52.225-13	Restrictions on Certain Foreign Purchases	Mar 2005
52.225-16	Sanctioned European Union Country Services	Feb 2000
52.226-1	Utilization of Indian Organizations and Indian-Owned Economic Enterprises	Jun 2000
52.227-1 Alt I	Authorization and Consent - Alternate I	Jul 1995, Apr 1984 (Alt I)
52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement	Aug 1996
52.227-12	Patent Rights Retention by Contractor, Long Form	Jan 1997
52.227-14	Rights in Data - General	Jun 1987
52.227-14/ Alt. IV	Rights in Data - General (Alternate IV)	Jun 1987
52.227-16	Additional Data Rights	Jun 1987
52.228-7	Insurance - Liability to Third Persons	Mar 1996
52.230-2	Cost Accounting Standards	Apr 1998
52.230-6	Administration of Cost Accounting Standards	Nov 1999
52.232-9	Limitation on Withholding of Payments	Apr 1984
52.232-17	Interest	Jun 1996
52.232-22	Limitation of Funds	Apr 1984
52.232-23	Assignment of Claims	Jan 1986
52.232-25	Prompt Payment	Oct 2003
52.232-33	Payment by Electronic Funds Transfer - Central Contractor Registration	Oct 2003
52.233-1	Disputes	Jul 2002
52.233-3 Alt I	Protest After Award - Alternate I	Aug 1996, Jun 1985 (Alt I)

52.233-4	Applicable Law for Breach of Contract Claim	Oct 2004
52.242-1	Notice of Intent to Disallow Costs	Apr 1984
52.242-3	Penalties for Unallowable Costs	May 2001
52.242-4	Certification of Final Indirect Costs.	Jan 1997
52.242-13	Bankruptcy	Jul 1995
52.243-2 Alt V	Changes – Cost Reimbursement – Alternate V	Aug 1987, Apr 1984 (Alt V)
52.244-2 Alt II	Subcontracts – Alternate II	Aug 1998, Aug 1998 (Alt II)
52.244-5	Competition in Subcontracting	Dec 1996
52.244-6	Subcontracts for Commercial Items	Dec 2004
52.245-5	Government Property (Cost-Reimbursement, Time-and-Materials, or Labor Hour Contracts)	May 2004
52.247-1	Commercial Bill of Lading Notations	Apr 1984
52.247-63	Preference for U.S. Flag Air Carriers	Jun 2003
52.249-6	Termination (Cost Reimbursement)	Sep 1996
52.249-14	Excusable Delays	Apr 1984
52.251-1	Government Supply Sources	Apr 1984
52.253-1	Computer Generated Forms	Jan 1991
3052.219-70	Small Business Subcontracting Program Reporting	Dec 2003

### I.3 NOTIFICATION OF OWNERSHIP CHANGES (FAR 52.215-19) (OCT 1997)

- (a) The Contractor shall make the following notifications in writing:
- (1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.
  - (2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.
- (b) The Contractor shall --
- (1) Maintain current, accurate, and complete inventory records of assets and their costs;
  - (2) Provide the ACO or designated representative ready access to the records upon request;
  - (3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and
  - (4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

- (c) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(End of Clause)

**1.4 NOTIFICATION OF EMPLOYEES RIGHTS CONCERNING PAYMENT OF UNION DUES AND FEES (FAR 52.222-39) (DEC 2004)**

- (a) *Definition. As used in this clause—*  
“United States” means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.
- (b) *Except as provided in paragraph (e) of this clause, during the term of this contract, the Contractor shall post a notice, in the form of a poster, informing employees of their rights concerning union membership and payment of union dues and fees, in conspicuous places in and about all its plants and offices, including all places where notices to employees are customarily posted. The notice shall include the following information (except that the information pertaining to National Labor Relations Board shall not be included in notices posted in the plants or offices of carriers subject to the Railway Labor Act, as amended (45 U.S.C. 151-188)).*

**Notice to Employees**

Under Federal law, employees cannot be required to join a union or maintain membership in a union in order to retain their jobs. Under certain conditions, the law permits a union and an employer to enter into a union-security agreement requiring employees to pay uniform periodic dues and initiation fees. However, employees who are not union members can object to the use of their payments for certain purposes and can only be required to pay their share of union costs relating to collective bargaining, contract administration, and grievance adjustment.

If you do not want to pay that portion of dues or fees used to support activities not related to collective bargaining, contract administration, or grievance adjustment, you are entitled to an appropriate reduction in your payment. If you believe that you have been required to pay dues or fees used in part to support activities not related to collective bargaining, contract administration, or grievance adjustment, you may be entitled to a refund and to an appropriate reduction in future payments.

For further information concerning your rights, you may wish to contact the National Labor Relations Board (NLRB) either at one of its Regional offices or at the following address or toll free number:

National Labor Relations Board  
Division of Information  
1099 14th Street, N.W.  
Washington, DC 20570  
1-866-667-6572  
1-866-316-6572 (TTY)

To locate the nearest NLRB office, see NLRB's website at  
<http://www.nlr.gov>.

- (c) The Contractor shall comply with all provisions of Executive Order 13201 of February 17, 2001, and related implementing regulations at 29 CFR Part 470, and orders of the Secretary of Labor.
- (d) In the event that the Contractor does not comply with any of the requirements set forth in paragraphs (b), (c), or (g), the Secretary may direct that this contract be cancelled, terminated, or suspended in whole or in part, and declare the Contractor ineligible for further Government contracts in accordance with procedures at 29 CFR Part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures. Such other sanctions or remedies may be imposed as are provided by 29 CFR Part 470, which implements Executive Order 13201, or as are otherwise provided by law.
- (e) The requirement to post the employee notice in paragraph (b) does not apply to—
  - (1) Contractors and subcontractors that employ fewer than 15 persons;
  - (2) Contractor establishments or construction work sites where no union has been formally recognized by the Contractor or certified as the exclusive bargaining representative of the Contractor's employees;
  - (3) Contractor establishments or construction work sites located in a jurisdiction named in the definition of the United States in which the law of that jurisdiction forbids enforcement of union-security agreements;
  - (4) Contractor facilities where upon the written request of the Contractor, the Department of Labor Deputy Assistant Secretary for Labor-Management Programs has waived the posting requirements with respect to any of the Contractor's facilities if the Deputy Assistant Secretary finds that the Contractor has demonstrated that—
    - (i) The facility is in all respects separate and distinct from activities of the Contractor related to the performance of a contract; and
    - (ii) Such a waiver will not interfere with or impede the effectuation of the Executive order; or
  - (5) Work outside the United States that does not involve the recruitment or employment of workers within the United States.
- (f) The Department of Labor publishes the official employee notice in two variations; one for contractors covered by the Railway Labor Act and a second for all other contractors. The Contractor shall—
  - (1) Obtain the required employee notice poster from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW, Room N-5605,

Washington, DC 20210, or from any field office of the Department's Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;

- (2) Download a copy of the poster from the Office of Labor-Management Standards website at <http://www.olms.dol.gov>; or
  - (3) Reproduce and use exact duplicate copies of the Department of Labor's official poster.
- (g) The Contractor shall include the substance of this clause in every subcontract or purchase order that exceeds the simplified acquisition threshold, entered into in connection with this contract, unless exempted by the Department of Labor Deputy Assistant Secretary for Labor-Management Programs on account of special circumstances in the national interest under authority of 29 CFR 470.3(c). For indefinite quantity subcontracts, the Contractor shall include the substance of this clause if the value of orders in any calendar year of the subcontract is expected to exceed the simplified acquisition threshold. Pursuant to 29 CFR Part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures, the Secretary of Labor may direct the Contractor to take such action in the enforcement of these regulations, including the imposition of sanctions for noncompliance with respect to any such subcontract or purchase order. If the Contractor becomes involved in litigation with a subcontractor or vendor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

(End of clause)

#### **I.5 RIGHTS TO PROPOSAL DATA (TECHNICAL) (FAR 52.227-23) (JUN 1987)**

Except for data contained in NA, it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data—General" clause contained in this contract) in and to the technical data contained in the proposal dated February 8 2005, upon which this contract is based.

(End of clause)

#### **I.6 NOTIFICATION OF CHANGES (FAR 52.243-7) (APR 1984)**

- (h) *Definitions.* "Contracting Officer," as used in this clause, does not include any representative of the Contracting Officer. "Specifically Authorized Representative (SAR)," as used in this clause, means any person the Contracting Officer has so designated by written notice (a copy of which shall be provided to the Contractor) which shall refer to this paragraph and shall be issued to the designated representative before the SAR exercises such authority.
- (i) *Notice.* The primary purpose of this clause is to obtain prompt reporting of Government conduct that the Contractor considers to constitute a change to this contract. Except for changes identified as such in writing and signed by the

Contracting Officer, the Contractor shall notify the Administrative Contracting Officer in writing promptly, within five (5) calendar days from the date that the Contractor identifies any Government conduct (including actions, inactions, and written or oral communications) that the Contractor regards as a change to the contract terms and conditions. On the basis of the most accurate information available to the Contractor, the notice shall state—

- (1) The date, nature, and circumstances of the conduct regarded as a change;
  - (2) The name, function, and activity of each Government individual and Contractor official or employee involved in or knowledgeable about such conduct;
  - (3) The identification of any documents and the substance of any oral communication involved in such conduct;
  - (4) In the instance of alleged acceleration of scheduled performance or delivery, the basis upon which it arose;
  - (5) The particular elements of contract performance for which the Contractor may seek an equitable adjustment under this clause, including—
    - (i) What contract line items have been or may be affected by the alleged change;
    - (ii) What labor or materials or both have been or may be added, deleted, or wasted by the alleged change;
    - (iii) To the extent practicable, what delay and disruption in the manner and sequence of performance and effect on continued performance have been or may be caused by the alleged change;
    - (iv) What adjustments to contract price, delivery schedule, and other provisions affected by the alleged change are estimated; and
  - (6) The Contractor's estimate of the time by which the Government must respond to the Contractor's notice to minimize cost, delay or disruption of performance.
- (j) *Continued performance.* Following submission of the notice required by paragraph (b) of this clause, the Contractor shall diligently continue performance of this contract to the maximum extent possible in accordance with its terms and conditions as construed by the Contractor, unless the notice reports a direction of the Contracting Officer or a communication from a SAR of the Contracting Officer, in either of which events the Contractor shall continue performance; provided, however, that if the Contractor regards the direction or communication as a change as described in paragraph (b) of this clause, notice shall be given in the manner provided. All directions, communications, interpretations, orders and similar actions of the SAR shall be reduced to writing promptly and copies furnished to the Contractor and to the Contracting Officer. The Contracting Officer shall promptly countermand any action which exceeds the authority of the SAR.
- (k) *Government response.* The Contracting Officer shall promptly, within 15 calendar days after receipt of notice, respond to the notice in writing. In responding, the Contracting Officer shall either—
- (1) Confirm that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance;

- (2) Countermand any communication regarded as a change;
  - (3) Deny that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance; or
  - (4) In the event the Contractor's notice information is inadequate to make a decision under paragraphs (d)(1), (2), or (3) of this clause, advise the Contractor what additional information is required, and establish the date by which it should be furnished and the date thereafter by which the Government will respond.
- (l) *Equitable adjustments.*
- (1) If the Contracting Officer confirms that Government conduct effected a change as alleged by the Contractor, and the conduct causes an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether changed or not changed by such conduct, an equitable adjustment shall be made—
    - (i) In the contract price or delivery schedule or both; and
    - (ii) In such other provisions of the contract as may be affected.
  - (2) The contract shall be modified in writing accordingly. In the case of drawings, designs or specifications which are defective and for which the Government is responsible, the equitable adjustment shall include the cost and time extension for delay reasonably incurred by the Contractor in attempting to comply with the defective drawings, designs or specifications before the Contractor identified, or reasonably should have identified, such defect. When the cost of property made obsolete or excess as a result of a change confirmed by the Contracting Officer under this clause is included in the equitable adjustment, the Contracting Officer shall have the right to prescribe the manner of disposition of the property. The equitable adjustment shall not include increased costs or time extensions for delay resulting from the Contractor's failure to provide notice or to continue performance as provided, respectively, in paragraphs (b) and (c) of this clause.

(End of clause)

**I.7 PROHIBITION ON CONTRACTS WITH CORPORATE EXPATRIATES (HSAR 3052.209-70) (DEC 2003)**

**(a) Prohibitions.**

Section 835 of Public Law 107-296, prohibits the Department of Homeland Security from entering into any contract with a foreign incorporated entity after November 25, 2002, which is treated as an inverted domestic corporation as defined in this clause. The Secretary shall waive the prohibition with respect to any specific contract if the Secretary determines that the waiver is required in the interest of homeland security, or to prevent the loss of any jobs in the United States or prevent the Government from incurring any additional costs that otherwise would not occur.

**(b) Definitions. As used in this clause:**

"Expanded Affiliated Group" means an affiliated group as defined in section 1504(a) of the Internal Revenue Code of 1986 (without regard to section 1504(b))

of such Code), except that section 1504 of such Code shall be applied by substituting 'more than 50 percent' for 'at least 80 percent' each place it appears. "Foreign Incorporated Entity" means any entity which is, or but for subsection (b) of Section 835 of the Homeland Security Act, Public Law 107-296, would be, treated as a foreign corporation for purposes of the Internal Revenue Code of 1986.

"Inverted Domestic Corporation." A foreign incorporated entity shall be treated as an inverted domestic corporation if, pursuant to a plan (or a series of related transactions)—

- (1) The entity completes after November 25, 2002, the direct or indirect acquisition of substantially all of the properties held directly or indirectly by a domestic corporation or substantially all of the properties constituting a trade or business of a domestic partnership;
  - (2) After the acquisition at least 80 percent of the stock (by vote or value) of the entity is held—
    - (i) In the case of an acquisition with respect to a domestic corporation, by former shareholders of the domestic corporation by reason of holding stock in the domestic corporation; or
    - (ii) In the case of an acquisition with respect to a domestic partnership, by former partners of the domestic partnership by reason of holding a capital or profits interest in the domestic partnership; and
  - (3) The expanded affiliated group which after the acquisition includes the entity does not have substantial business activities in the foreign country in which or under the law of which the entity is created or organized when compared to the total business activities of such expanded affiliated group. "Person", "domestic", and "foreign" have the meanings given such terms by paragraphs (1), (4), and (5) of section 7701(a) of the Internal Revenue Code of 1986, respectively.
- (c) Special rules. The following definitions and special rules shall apply when determining whether a foreign incorporated entity should be treated as an inverted domestic corporation.
- (1) Certain Stock Disregarded. For the purpose of treating a foreign incorporated entity as an inverted domestic corporation these shall not be taken into account in determining ownership:
    - (i) stock held by members of the expanded affiliated group which includes the foreign incorporated entity; or
    - (ii) stock of such entity which is sold in a public offering related to the acquisition described in subsection (b)(1) of Section 835 of the Homeland Security Act, Public Law 107-296.
  - (2) Plan Deemed In Certain Cases. If a foreign incorporated entity acquires directly or indirectly substantially all of the properties of a domestic corporation or partnership during the 4-year period beginning on the date which is after the date of enactment of this Act and which is 2 years before the ownership requirements of subsection (b)(2) are met, such actions shall be treated as pursuant to a plan.



- (3) **Certain Transfers Disregarded.** The transfer of properties or liabilities (including by contribution or distribution) shall be disregarded if such transfers are part of a plan a principal purpose of which is to avoid the purposes of this section.
- (d) **Special Rule for Related Partnerships.**  
For purposes of applying Section 835(b) of Public Law 107-296 to the acquisition of a domestic partnership, except as provided in regulations, all domestic partnerships which are under common control (within the meaning of section 482 of the Internal Revenue Code of 1986) shall be treated as a partnership.
- (e) **Treatment of Certain Rights.**
- (1) **Certain rights shall be treated as stocks to the extent necessary to reflect the present value of all equitable interests incident to the transaction, as follows:**
- (i) warrants;
  - (ii) options;
  - (iii) contracts to acquire stock;
  - (iv) convertible debt instruments; and
  - (v) others similar interests.
- (2) **Rights labeled as stocks shall not be treated as stocks whenever it is deemed appropriate to do so to reflect the present value of the transaction or to disregard transactions whose recognition would defeat the purpose of Section 835.**
- (f) **Disclosure.**  
By signing and submitting its offer, an Offeror under this solicitation represents that it not a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of Section 835 of the Homeland Security Act, Public Law 107-296 of November 25, 2002.
- (g) **If a waiver has been granted, a copy of the approved waiver shall be attached to the bid or proposal.**

(End of provision)

#### **I.8 INSURANCE (HSAR 3052.228-70) (DEC 2003)**

In accordance with the clause entitled "Insurance - Work on a Government Installation" [or Insurance - Liability to Third Persons] in Section I, insurance of the following kinds and minimum amounts shall be provided and maintained during the period of performance of this contract:

- (a) **Worker's compensation and employer's liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(a).
- (b) **General liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(b).
- (c) **Automobile liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(c).

(End of clause)

J.0 ATTACHMENTS

RESERVED

**AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**

1. CONTRACT ID CODE: \_\_\_\_\_ PAGE OF PAGES: 3  
 2. AMENDMENT/MODIFICATION NO: **PC0331** 3. EFFECTIVE DATE: **06/29/2006** 4. REQUISITION/PURCHASE REQ. NO.: \_\_\_\_\_ 5. PROJECT NO. (if applicable): \_\_\_\_\_

6. ISSUED BY: **DHS** 7. ADMINISTERED BY (if other than item 6): **DHS**

Department of Homeland Security  
 Office of Procurement Operations  
 245 Murray Drive  
 Bldg. 410  
 Washington DC 20528

8. NAME AND ADDRESS OF CONTRACTOR (As stated, county, State and ZIP Code):  
**RAYSCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION**  
 352 EAST JAVA DRIVE  
 SUNNYVALE CA 940891328

9A. AMENDMENT OF SOLICITATION NO.: \_\_\_\_\_  
 9B. DATED (SEE ITEM 11): \_\_\_\_\_  
 10A. MODIFICATION OF CONTRACT ORDER NO.: **RSRQDC-05-C-00032**  
 10B. DATED (SEE ITEM 11): **09/30/2005**

CODE: **0829118430000** FACILITY CODE: \_\_\_\_\_

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**  
 The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers  is extended,  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 6 and 7, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and the amendment, and is registered prior to the specified hour and date specified.

**12. ACCOUNTING AND APPROPRIATION DATA (if required)**  
 See Schedule

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACT ORDERS. IT MODIFIES THE CONTRACT ORDER NO. AS DESCRIBED IN ITEM 14.**

- A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
- B. THE ABOVE NUMBERED CONTRACT ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
- C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: \_\_\_\_\_
- D. OTHER (Specify type of modification and authority): \_\_\_\_\_

**X Bilateral Agreement**

**IMPORTANT:** Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)**

Tax ID Number: **94 2367397**  
 DUNS Number: **0829118430000**  
 Pursuant to mutual agreement this Modification shall extend the performance period of the existing award to August 30, 2006.  
 Period of Performance: **06/29/2006 to 08/30/2006**

Except as provided herein, all terms and conditions of the document referenced in item 8A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print): **R. A. Armistead, President** 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print): **Timothy B. Davis**

15B. CONTRACTING OFFICER: \_\_\_\_\_ 15C. DATE SIGNED: **7/6/06** 16B. IMMEDIATE SUPERVISOR: \_\_\_\_\_ 16C. DATE SIGNED: **JUN 30 2006**

**Bray, Kelly <CTR>**

**From:** Ron Hughes [REDACTED]  
**Sent:** Wednesday, June 28, 2006 9:04 PM  
**To:** Armwood, Wanda; DePersia, Trent; Bray, Kelly <CTR>; Shepard, Mike <CTR>  
**Cc:** [REDACTED] Harry Pak; Andreas Pfander; Amit Verma; Steve Gray; Ron Hughes; Fuoti, Kirsten <CTR>; Caramanica, Janet  
**Subject:** Request for No-Cost Extension for BAA# 05-03, TTA: 2

Dear Ms. Armwood,

Rapiscan Systems formally requests a 60-day No-Cost extension for Phase I of the following HSARPA project:

**BAA Number: 05-03 , TTA: 2**

**Title: *Non-Intrusive Detection of Suicide Bombers***

The extension request is to allow Rapiscan additional time to complete the Phase I Final Report and submit the revised Phase II Proposal. The successful completion of the Preliminary Design Review was held today June 28, 2006 with the attendance of Trent Depersia and Kelly Bray.

We greatly appreciate your attention. Please advise if you need further details.

Thanks and Best Regards,

Ronald J Hughes

Sr. Project Manager

Rapiscan Systems

[REDACTED]

[REDACTED]

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7/6/2006



NAME OF OFFEROR OR CONTRACTOR  
**RAPISCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION**

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0002	<p>In accordance with the terms and conditions of the basic contract, Option 1 - CLIN 0002 (Phase II) is hereby exercised in the total CPFF amount of \$398,995.</p> <p>PTIEDD Phase II (Option 1) Obligated Amount: \$398,995.00 Product/Service Code: R425 Product/Service Description: ENGINEERING &amp; TECHNICAL SERVICES</p> <p>CLIN 0002 Total Estimated Cost: \$376,410 CLIN 0002 Total Fixed Fee: \$22,585 CLIN 0002 Total CPFF: \$398,995 All other terms and conditions of contract HSHQDC-05-C-00032 remain unchanged.</p>				398,995.00

The purposes of this modification to Contract HSHQDC-05-C-00032 are to exercise Option I CLIN 0002 initiating performance of Phase II and conduct administrative changes to designate a new Contracting Officer. As such, the following applies:

1. Under **Section B: SUPPLIES/SERVICES AND PRICES/COSTS**, and in accordance with clause **B.3 Options**: Option 1, CLIN 0002, is hereby exercised to initiate Phase II of the Non-Intrusive Detection of Suicide Bombers PTIEDD Project. The cost, fixed fee, and total values for CLIN 0002 are revised as follows:

<i>CLIN</i>	<i>Supplies/Services</i>	<i>Qty</i>	<i>Unit</i>	<i>Est Unit Cost</i>	<i>Fixed Fee</i>	<i>Total CPFF</i>
0002	PTIEDD Phase II (Option 1)	1	Lot	████████	████████	████████

2. **Section C: DESCRIPTION/SPECIFICATIONS/WORK STATEMENT**, the following changes Statement of Work are incorporated:

- a. Under paragraph C.1 **Scope** the following applies:
  - i. The period of performance for Phase II is six (6) months.
  - ii. Phase II Project Milestones include the following:
    - Detailed System Design Specification
    - CONOPS, Cost of Ownership, and Test Plan
    - CDR
    - Phase III Plan

- b. Under paragraph C.2 **Phase II Activities** are added as follows:

The Contractor shall conduct the systems engineering, research and design to develop detailed design specifications and documents for a prototype backscatter imaging system. Design goals are as follows:

- Covert inspection of moving subjects
- Detection of explosives on suicide bombers through clothing, backpacks, and other packages
- Radiation safe meeting all the requirements of ANSI Standard 43.17 "Radiation Safety for Personnel Screening Systems Using X-Ray"

The Contractor shall utilize comprehensive data and image analysis obtained in Phase I regarding system performance of the backscatter imaging system on the basis of:

- The ability to detect concealed explosives and "leave-behind" bombs, weapons, and ceramic components as a person walks through the imaging system
- The radiation safety of the system with regard to screening the general public
- The evaluation of DHS/S&T selected deployment scenarios proposed for the prototype that optimize the protection specifically for large gatherings, points of interest, transportation systems, and/or special events

The Contractor shall conduct the systems engineering design effort, utilizing the research, development, and laboratory analysis from Phase I to identify the appropriate design

specifications for the backscatter imaging system that best meets the design goals. This includes:

1. Design specification. The Contractor shall develop the design specification from Phase I experimental data, associated analysis, and DHS/S&T deployment criteria to be determined early in Phase II. The Walk-Through Testbed constructed during Phase I will be used to verify design concepts.
2. Radiation Safety Evaluation. The Contractor shall conduct systems engineering design effort to ensure the radiation safety of the system. The objective is to demonstrate that the backscatter system is safe and that an inspection will not exceed the limits specified by ANSI 43.17 for a general use system.
3. Comprehensive System Design. The Contractor shall detail the systems engineering design over all system and major subsystems. This includes the imaging system, the safety systems, and the electrical and mechanical subsystems and controls.

c. Under paragraph C.3 Test and Evaluation the following is added:

**Comprehensive/Critical Design Review (CDR).** The Contractor shall conduct a CDR. The Contractor shall submit all presentation materials at the CDR. These materials will include detailed design documentation, CONOPS, cost of ownership, and the test plan.

3. Under Section D: **PACKAGING AND MARKING, D.1 Packaging and Marking**, Phase II document deliverables shall be submitted electronically to the Government Program Manager (Mr. Trent DePersia) [REDACTED]

4. Under Section F: **DELIVERIES OF PERFORMANCE, F.2 Period of Performance** is modified to the following:

CLIN 0002: The period of performance of Phase II of this Contract is from date of authorization to proceed through six (6) months.

5. Under Section G: **CONTRACT ADMINISTRATION DATA**, the following changes apply:

a. Change G.1 Contracting Officer (CO) to the following:

The Contracting Officer for this Contract is identified below:

Name:	Wanda Armwood
Title:	Contracting Officer
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency / Office of Procurement Operations
Address:	Washington, DC 20598
Voice:	[REDACTED]
Fax:	(202) 254-6167
Email:	[REDACTED]



- b. **G.6 Accounting and Appropriation Data:** The accounting and appropriation data found on Page 2 of the Standard Form (SF-30) applies to this modification. CLIN 0002 is fully funded.
6. **Add Clause I-9: Precontract Costs (HSAR 3052.231-70) (Dec 2003)** as it applies to CLIN 0002.

The Contractor shall be entitled to reimbursement for pre-contract costs incurred on or after 23 October 2006 under CLIN 0002 in an amount not to exceed [REDACTED] that, if incurred after the Option for CLIN 0002 had been exercised, would have been reimbursable under this contract.

**ALL OTHER TERMS AND CONDITIONS OF CONTRACT HSHQDC-05-C-00032  
REMAIN UNCHANGED AND IN FULL EFFECT.**



NAME OF OFFEROR OR CONTRACTOR  
 RAPISCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION

ITEM NO (A)	SUPPLIES SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0003	<p>The period of performance is hereby extended 90 days from 10/23/2006 - 5/22/2007 to 10/23/2006 - 7/21/2007.</p> <p>All other terms and conditions remain the same.</p> <p>Obligated Amount: \$0.00            Product/Service Code: R425            Product/Service Description: ENGINEERING &amp; TECHNICAL SERVICES</p>				0.00

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | CONTRACT ID CODE | PAGE OF PAGES  
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2 AMENDMENT/MODIFICATION NO | 3 EFFECTIVE DATE | 4 REQUISITION/PURCHASE REQ. NO. | 5 PROJECT NO (if applicable)  
 000004 | See Block 16C | RBBN-07-00074 |

6 ISSUED BY | CODE | 7 ADMINISTERED BY (if other than item 6) | CODE  
 U.S. Dept. of Homeland Security | DHS/OPO/S&T/S&T | U.S. Dept. of Homeland Security | DHS/OPO/S&T/S&T

Office of Procurement Operations  
 S&T Acquisition Division  
 245 Murray Lane, SW  
 Building 410  
 Washington DC 20528

8 NAME AND ADDRESS OF CONTRACTOR (file, street, county, State and ZIP Code)

RAPISCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION  
 152 EAST JAVA DRIVE  
 SUNNYVALE CA 940891328

9A AMENDMENT OF SOLICITATION NO

9B DATED (SEE ITEM 11)

10A MODIFICATION OF CONTRACT/ORDER NO  
 HSHQDC-05-C-00032

10B DATED (SEE ITEM 11)  
 09/30/2005

CODE 0829118430000 | FACILITY CODE

11 THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers  is extended,  is not extended  
 Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 10, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and the amendment, and is received here at the address and date specified.

12 ACCOUNTING AND APPROPRIATION DATA (if required)  
 NONE000-000-7X-33-02-03-001-01-00-0000-00-00-00-00-GE-AP-25-50-000000 | Net Increase: \$782,400.00

13 THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACT/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE  
 A THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A  
 B THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b)  
 C THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF  
 D OTHER (Specify type of modification and authority)  
 X Federal Acquisition Regulation 43.103(a) Supplemental Agreement

IF IMPORTANT: Contingent  is not  is required to sign this document and return \_\_\_\_\_ 1 \_\_\_\_\_ copies to the issuing office

14 DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)  
 Tax ID Number: 94-2367397  
 DUNS Number: 082911843+0000  
 The purpose of this modification is to provide funding for Phase III under CLIN 0003 of the basic contract.  
 Discount Terms:  
 Net 30  
 FOB: Destination  
 Period of Performance: 10/23/2006 to 06/25/2008

Add Item 0004 as follows:

Continued ...  
 Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A NAME AND TITLE OF SIGNER (Type or print) | 16A NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  
 Robert A. Armistead, President | Mark T. Robbins

15B CONTRACTOR/OFFEROR | 15C DATE SIGNED | 15D UNITED STATES OF AMERICA | 15E DATE SIGNED  
 [Redacted] | 6/26/2007 | [Redacted] | 6/27/07

NSN 7540-01-152-9070 | Previous edition unclassified | STANDARD FORM 38 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243

CONTINUATION SHEET

REFERENCE NO OF DOCUMENT BEING CONTINUED  
HSHQDC-05-C-00032/P00004

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NAME OF OFFEROR OR CONTRACTOR  
RAPISCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION

ITEM NO (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0004	"Non-Intrusive Detection of Suicide Bombers' Phase III in accordance with the attached Statement of Work. Obligated Amount: \$782,400.00 Product/Service Code: R425 Product/Service Description: ENGINEERING & TECHNICAL SERVICES				782,400.00

# **Non-Intrusive Detection of Suicide Bombers Phase III**

## **U.S. Department of Homeland Security Science and Technology Directorate Explosives Division**

RSEN-07-00074

### **I. Background**

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge technologies and scientific talent in its quest to make America safer. The DHS Directorate of Science and Technology (S&T) is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and leveraging these existing resources into technological tools to help protect the homeland. The Suicide Borne IED program supports this effort by focusing on protecting the homeland from the threat of explosives through detection. Solutions targeted are either near-term or more in-depth for suicide bomb and/or leave-behind bomb detection.

### **II. Scope of Work**

Phase III consists of the following tasks: completion of the final design, fabrication, assembly, installation of the prototype backscatter imaging system at Rapiscan Systems for test and evaluation; and project management. Phase III also includes installation and customer acceptance test and evaluation at a government-furnished test site as part of the delivery of the system to DHS S&T. For the purposes of this SOW, the government test site is assumed to be the Transportation Security Agency Technical Center located in Atlantic City, New Jersey. After the selection of the government test site has been finalized, the Contractor shall update the program plan and budget (if required) for relocating the system to the test site.

The period of performance for Phase III is twelve (12) months.

Project Milestones for Phase III include the following:

- Phase III Prototype Fabrication and demonstration
- Factory Acceptance Test
- Phase III Prototype Installation
- Customer Acceptance Test

#### **1. Phase III Activities**

Contractor shall conduct the systems engineering and research to develop a prototype backscatter imaging system. Design goals are as follows:

- Subjects are moving.
- System providing 360° of coverage of subject

- Imaging of explosives and explosive devices on suicide bombers through clothing, backpacks, and other packages.
- Radiation dosage which meets the requirements of ANSI Standard 43.17 "Radiation Safety for Personnel Screening Systems Using X-Ray."

The Government will evaluate the performance of the backscatter imaging system on the basis of:

- The ability to image concealed explosives and explosive devices, as a person walks through the imaging system.
- The safety of the system permitting screening the general public.
- The potential application of different deployment scenarios that optimize the protection specifically for large gatherings, points of interest, transportation systems, and special events.

Contractor shall fabricate the prototype system, install the imaging software, and prepare the Operator and Maintenance Manuals. A test matrix will be developed in collaboration with DHS S&T to demonstrate the capabilities of the system to identify suicide bombers. The Contractor shall conduct a Factory Acceptance Test and then deliver and install the prototype in a DHS S&T facility. A Customer Acceptance Test will be performed and the appropriate DHS and TSA personnel will be trained in operation of the system.

#### **Prototype Backscatter Imaging Phase III Tasks**

<b>Item</b>	<b>Time After Award</b>
1. Kick Off Meeting	Within 3 weeks
2. Monthly Reports	Monthly
3. Interim Progress Review (IPR) and Report	Report: 1 week prior to IPR Review: 3 Months
4. Prototype Fabrication	9 Months
5. Prototype Delivery and Installation	10 Months
6. Factory Acceptance Test	10 Months
7. Provide support for Government testing	12 Months
7. Final Reports and Review	Upon task completion

#### **2. Test and Evaluation**

**Factory Acceptance Test (FAT).** Contractor shall conduct a Factory Acceptance Test, developed in collaboration with DHS S&T. Contractor shall submit all presentation materials at the conclusion of the FAT, including test results.

**Customer Acceptance Test (CAT).** Contractor shall conduct a Customer Acceptance Test once the prototype system is delivered and installed in a DHS S&T facility. The CAT will be developed in collaboration with DHS S&T.

### 3. Program Management

Contractor shall maintain and implement a Management Program, which clearly defines how the development effort will be managed and controlled. Contractor shall organize, coordinate, and control all internal project activities (including those which are assigned to subcontractors) to ensure the correct and timely delivery of all supplies and services specified in this contract. Contractor shall provide a program management function to manage all technical performance, cost, schedule, and delivery requirements of this Program. The Contractor shall report progress at program reviews and with presentation materials. The Program Manager shall be responsible for coordinating and managing the efforts of the Rapiscan subsidiaries: Rapiscan Security Products (located in Torrance, CA) and Rapiscan Systems Neutronics and Advanced Technologies (located in Sunnyvale, CA).

### III. Other Contract Details

1. **Period of Performance.** The period of performance for this Phase III SOW is twelve (12) months from the completion date of Phase II. DHS may give subsequent extension notices to Rapiscan Systems High Energy Inspection Corporation in writing for further performance in accordance with the terms of this SOW.

**Travel.** The DHS Explosives Division Director and the DHS S&T Special Assistant for International Policy must approve all foreign travel in advance.

2. **DHS-Furnished Information.**

- a. DHS will provide certain DHS information, materials, and forms unique to DHS to Rapiscan Systems High Energy Inspection Corporation to support certain tasks under this SOW.
- b. The DHS S&T Technical Representative identified in this SOW will be the point of contact (POC) for identification of any required information to be supplied by DHS.
- c. Rapiscan Systems High Energy Inspection Corporation will prepare any documentation according to the guidelines provided by DHS.

3. **DHS-Furnished Facilities, Supplies, and Services.** If work at DHS-provided facilities is necessary for the services being performed under this SOW, such facilities will be provided at S&T's office in Washington, D.C. Parking facilities are not provided, however several commercial parking facilities are located near S&T's office. Basic facilities such as work space and associated operating requirements (e.g., phones, desks, utilities, desktop computers, and consumable and general purpose office supplies) will be provided to Rapiscan Systems High Energy Inspection Corporation personnel working in S&T's office.



4. **Place of Performance.** Rapiscan Systems High Energy Inspection Corporation will perform the work under this SOW at Rapiscan's Sunnyvale location or the location of a subcontractor.
5. **DHS-Furnished Property.** DHS property will not be provided to Rapiscan Systems High Energy Inspection Corporation unless otherwise agreed in a task order issued under this SOW. In such instances, DHS will maintain property records.

Before purchasing any individual item equal to or exceeding \$50,000 that is required to support technical tasks performed pursuant to this SOW, Rapiscan Systems High Energy Inspection Corporation shall obtain the DHS S&T Technical Representative's prior written consent. The DHS S&T Technical Representative may lower or raise the aforementioned \$50,000 threshold at his/her discretion and on written notice to Rapiscan Systems High Energy Inspection Corporation. If the DHS S&T Technical Representative consents to such purchase, such item shall become the property of DHS. Rapiscan Systems High Energy Inspection Corporation will maintain any such items according to currently existing property accountability procedures. The DHS S&T Technical Representative will determine the final disposition of any such items.

6. **Deliverables.** Rapiscan Systems High Energy Inspection Corporation will provide all deliverables identified in this SOW directly to the DHS S&T Technical Representative with a copy of the transmittal letter to the Contracting Officer.

Deliverable Item	Frequency	Comments
Monthly Reports	Monthly, Due 10 days after the start of a new month	Summarizes technical, schedule, and cost performance of the project during the previous month and provides milestones for the next month.
Quarterly Reports	Quarterly, Due 5 days before a quarterly review	Summarizes the technical, schedule and cost performance of the project over the previous quarter and provides milestones for the next quarter.
Quarterly Review	Quarterly	Scheduled in consultation with the COTR. Location to be selected in consultation with COTR.
Quarterly Review Materials	Quarterly, due five days before a quarterly review	
Final Phase III Report	One time	Due 30 days after completion of the technical performance period.
Factory Acceptance Test Report	One time	Due 15 days after the completion of the Factory Acceptance Test.
Customer Acceptance Test Report	One time	Due 15 days after the completion of the Customer Acceptance Test.

Prototype Backscatter Imaging System	One time	Due at the Customer Acceptance Test. This is a 2-sided backscatter x-ray imaging system and associated imaging computer.
Operator and Maintenance Manuals	One time	Due at the Customer Acceptance Test.
Training materials	One time	Due at the Customer Acceptance Test.

**Data Deliverables:** For prototype operation, Rapiscan shall provide Secure 1000 operating and system software\*, image display and user interface which will be furnished to the government under limited rights. This will include the imaging data acquisition system and readout electronics.

\*Secure 1000 is a Rapiscan product line from which deliverables, both hardware and software, were derived. Engineering rights will be maintained by Rapiscan per pre-existing patents:

- a. Patent Number 6,094,472 issued July 25, 2000 "X-ray backscatter imaging system including moving body tracking assembly"
- b. Patent Number 6,665,373 issued December 13, 2003 "X-ray imaging system with active detectors"

**Acceptance Criteria:** Prior to delivery to the government, a series of acceptance tests will be performed at Rapiscan's facilities:

Factory Acceptance Test (FAT). Rapiscan shall conduct a Factory Acceptance Test, developed in collaboration with DHS S&T. Rapiscan shall submit all presentation materials at the conclusion of the FAT, including test results. Specific details of the FAT will be developed, during execution of the proposed R&D effort, to demonstrate proper function of the prototype and associated components. Baseline figures of merit will be established prior to the FAT. At a minimum, a "two-sided" imaging system, providing 360° of coverage of moving persons, will be delivered.

Upon delivery to the government, a series of acceptance tests will be performed at a government site to be determined:

Customer Acceptance Test (CAT). Rapiscan shall conduct a Customer Acceptance Test once the prototype system is delivered and installed in a DHS S&T facility. The CAT will be developed in collaboration with DHS S&T, but will closely mimic criteria established for the FAT

7. **Program Status Report.** Rapiscan Systems High Energy Inspection Corporation will deliver a monthly program status report to the DHS S&T Technical Representative and DHS S&T Resource Manager containing metrics pertaining to financial, schedule, and scope information, risk information, and performance assessment information of all work performed hereunder.

8. **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 Rapiscan Systems High Energy Inspection Corporation as to which work will be conducted in a classified manner and at which classification level. If such DHS-guidance conflicts with applicable DOE guidelines, Rapiscan Systems High Energy Inspection Corporation will adhere to the applicable DOE guidelines. Rapiscan Systems High Energy Inspection Corporation will also adhere to other applicable Government orders, guides, and directives pertaining to classified or confidential work. This SOW may require access to information at the FOUO level.

#### IV. Points of Contact

Rapiscan Systems High Energy Inspection Corporation Points of Contact (POCs) are as follows:

- Technical POC(s) – Ed Franco  
352 East Java Drive  
Sunnyvale, CA 94089-1328  
[REDACTED]

- Financial POC(s) – Ed Lebaker  
352 East Java Drive  
Sunnyvale, CA 94089-1328  
[REDACTED]

Rapiscan Systems High Energy Inspection Corporation may change the individual designated as a POC upon notice to DHS S&T of such change.

The DHS POCs are as follows:

- DHS S&T Technical Representative – Mike Shepard  
Department of Homeland Security  
ATTN: Science and Technology  
Directorate/Explosives Division, Mike Shepard  
Washington, DC 20528  
[REDACTED]

- Financial Analyst – Shaun MacKeever  
Contractor in support of the  
Department of Homeland Security

Science and Technology Directorate  
Washington, DC 20528



DHS S&T may change the individual designated as a POC upon notice to Rapiscan Systems High Energy Inspection Corporation of such change.



NAME OF OFFEROR OR CONTRACTOR  
**RAPISCAN SYSTEMS HIGH ENERGY INSPECTION CORPORATION**

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0005	Period of Performance: 10/23/2008 to 06/30/2009  Add item 0005 as follows:  The purpose of this modification is to incorporate additional work into this contract and extend the period of performance. Please see the attached Statement of Work. Obligated Amount: \$175,000.00				175,000.00

# Statement of Work for Rapiscan Systems High Energy Inspection Corporation

U.S. Department of Homeland Security  
Science and Technology Directorate  
Explosives Division

## I. Background

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge technologies and scientific talent to make America safer. The DHS Science and Technology (S&T) Directorate is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and leveraging these existing resources into technological tools to help protect the homeland. The Counter- Improvised Explosive Device (C-IED) Program supports this effort by focusing on protecting the homeland from the threat of IED explosives through deterrence, prediction, detection, defeat, and mitigation. Solutions targeted are either near-term or more in-depth for Person Borne (PB/IED), Vehicle Borne (VB/IED), and/or Leave Behind (LB/IED) IED detection.

## II. Scope of Work

The purpose of this SOW is to extend the period of performance and add additional funding to the HSHQDC-05-C-00032 contract. The Rapiscan High Energy Inspection Corporation is developing a walk-through backscatter x-ray detection system and due to the complex nature of this R&D effort at hand additional funding is necessary complete previously scheduled tasks to meet such goals. Specific tasks include the following:

1. Final development of the X-Ray source and Chopper Wheel. Tasks include:
  - a. Achieving the required image resolution by maintaining a small X-ray focal spot at the higher power by performing research on custom X-Ray sources with small spots and a 90-degree fan beam
  - b. Implementing a strategy for cooling the more powerful source
  - c. Designing and building a higher speed chopper wheel including the investigation of attenuating materials that would provide the yield strength to withstand the centrifugal forces at 5,000 RPM.
2. Packaging and shipping system to an East coast DHS testing location.
3. Installation of the system at the testing location.
4. Provide training manuals and a 2-day training class for DHS operators at the testing location.

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Tasks/Deliverables

Program Element / Project	Major Tasks	Key Milestones and Deliverables
Complete development of prototype	<ul style="list-style-type: none"><li>• Achieve required image resolution by maintaining a small X-ray focal spot at the higher power by performing research on custom X-Ray sources with small spots and a 90-degree fan beam</li><li>• Implement strategy for cooling the more powerful source;</li><li>• Design and build a higher speed chopper wheel.</li></ul>	<ul style="list-style-type: none"><li>• Complete prototype system ready for transition to Government; due 6 months after contract award</li></ul>
Install system at test location	<ul style="list-style-type: none"><li>• Packaging and shipping system to an East coast DHS testing location.</li><li>• Installation of the system at the testing location.</li><li>• Provide training manuals and a 2-day training class for DHS operators at the testing location.</li></ul>	<ul style="list-style-type: none"><li>• Install system at testing location; due 8 months after contract award</li><li>• Provide training manuals and class for operators; due 12 months after award</li></ul>

**III. Other Contract Details**

1. **Period of Performance.** The period of performance for this SOW is 12 months after the contract award date. DHS may give subsequent extension notices to Rapiscan Systems High Energy Inspection Corporation in writing for further performance in accordance with the terms of this SOW.
2. **Travel.** Travel may be required in the performance of the duties listed herein. It is anticipated that travel will be limited to continental United States. The DHS S&T Technical Representative must approve all additional travel. All travel and other direct costs associated with the execution of the tasks indicated in this SOW will be reimbursed in accordance with the limits set forth in the Federal Travel Regulations, provided the performer provides appropriate supporting documentation.
3. **DHS-Furnished Information.**

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DHS will provide certain DHS information, materials, and forms unique to DHS to Rapiscan Systems High Energy Inspection Corporation to support certain tasks under this SOW.

The DHS S&T Technical Representative identified in this SOW will be the point of contact (POC) for identification of any required information to be supplied by DHS.

Rapiscan Systems High Energy Inspection Corporation will prepare any documentation according to the guidelines provided by DHS.

4. **DHS-Furnished Facilities, Supplies, and Services.** If work at DHS-provided facilities is necessary for the services being performed under this SOW, such facilities will be provided at S&T's office in Washington, D.C. Parking facilities are not provided, however several commercial parking facilities are located near S&T's office. Basic facilities such as work space and associated operating requirements (e.g., phones, desks, utilities, desktop computers, and consumable and general purpose office supplies) will be provided to Rapiscan Systems High Energy Inspection Corporation personnel working in S&T's office.
5. **Place of Performance.** Rapiscan Systems High Energy Inspection Corporation will perform the work under this SOW at Rapiscan's Sunnyvale location or the location of a subcontractor, and at the test site upon delivery.
6. **DHS-Furnished Property.** DHS property will not be provided to Rapiscan Systems High Energy Inspection Corporation unless otherwise agreed in a task order issued under this SOW. In such instances, DHS will maintain property records.

Before purchasing any individual item equal to or exceeding \$50,000 that is required to support technical tasks performed pursuant to this SOW, Rapiscan Systems High Energy Inspection Corporation shall obtain the DHS S&T Technical Representative's prior written consent. The DHS S&T Technical Representative may lower or raise the aforementioned \$50,000 threshold at his/her discretion and on written notice to Rapiscan Systems High Energy Inspection Corporation. If the DHS S&T Technical Representative consents to such purchase, such item shall become the property of DHS. Rapiscan Systems High Energy Inspection Corporation will maintain any such items according to currently existing property accountability procedures. The DHS S&T Technical Representative will determine the final disposition of any such items.

7. **Deliverables.** Rapiscan Systems High Energy Inspection Corporation will provide all deliverables identified in this SOW directly to the DHS S&T Technical Representative with a copy of the transmittal letter to the Contracting Officer.

**Acceptance Criteria.** Deliverables shall be subject to testing, review, and acceptance by DHS to verify that each deliverable satisfies DHS's applicable acceptance criteria.

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"Acceptance criteria" mean the criteria developed by DIIS to determine whether a deliverable is ready for acceptance by DHS and may include, without limitation, requirements that the applicable deliverable: (i) has been completed and delivered/achieved according to this SOW; (ii) meets or exceeds the identified requirements in this SOW, including but not limited to technical specifications and performance standards; and (iii) complies with such other criteria as may be developed and agreed on by DIIS and Rapiscan Systems High Energy Inspection Corporation. Deliverables for which DHS wishes to develop acceptance criteria will be identified by DHS, in writing, prior to initiation of any work on such deliverables. DHS and Rapiscan Systems High Energy Inspection Corporation will agree in writing on the acceptance criteria associated with such deliverables.

**Correction of Nonconformities.** If a deliverable fails to meet the relevant acceptance criteria (each such failure or deficiency is referred to as a "nonconformity"), DHS will provide written notification to Rapiscan Systems High Energy Inspection Corporation of such failure. Upon receiving such notice, Rapiscan Systems High Energy Inspection Corporation will inform DHS in writing of the costs associated with correction and proposed actions to correct. Corrective actions will not be undertaken until additional funding has been received as well as clear written guidance as to what actions are authorized. The corrected nonconformity will be redelivered to DHS, who will then confirm in writing whether the redelivered deliverable conforms to and satisfies the applicable acceptance criteria. The process described in this section may be repeated as necessary until all nonconformities are corrected and the deliverable conforms to and satisfies its acceptance criteria or until either party reasonably determines that continued efforts would be unsuccessful. DHS will cover all expenses associated with these corrective activities.

7. **Program Status Report.** Rapiscan Systems High Energy Inspection Corporation will deliver a monthly program status report due the 15<sup>th</sup> of each month to the DHS S&T Technical Representative, DIIS S& Explosives Operations Manager, and DHS S&T Financial Analyst containing metrics pertaining to financial, schedule, and scope information, risk information, and performance assessment information of all work performed hereunder.

8. **Funding Requirements.** DHS will provide funding to Rapiscan Systems High Energy Inspection Corporation in accordance with DHS's appropriations and available funds. Requested funding is \$175,000.

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 Rapiscan Systems High Energy Inspection Corporation as to which work will be conducted in a classified manner and at which classification level. If such DHS-guidance

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conflicts with applicable DOF guidelines, Rapiscan Systems High Energy Inspection Corporation will adhere to the applicable DOE guidelines. Rapiscan Systems High Energy Inspection Corporation will also adhere to other applicable Government orders, guides, and directives pertaining to classified or confidential work. This SOW may require access to information at the FOUO level.

#### IV. Points of Contact

Rapiscan Systems High Energy Inspection Corporation Points of Contact (POCs) are as follows:

**Technical POC(s):**

Dan Strellis  
520 Almanor Avenue  
Sunnyvale, CA 94085-3533  
[REDACTED]

**Financial POC(s):**

Lyon Tilman  
520 Almanor Avenue  
Sunnyvale, CA 94085-3533  
[REDACTED]

Rapiscan Systems High Energy Inspection Corporation may change the individual designated as a POC upon notice to DHS S&T of such change.

The DHS POCs are as follows:

**DHS S&T Technical Representative:**

Mike Shepard  
Department of Homeland Security  
Science and Technology Directorate  
Explosives Division  
Washington, DC 20582  
[REDACTED]  
Fax: 202-254-5396  
[REDACTED]

**DHS S&T Explosives Operations Manager:**

Wallicia Tapscott  
Explosives Division

Deleted: Ed Franco  
Deleted: 352 East Java Drive  
Deleted: 94089-1328  
Deleted: 408-733-7780 ext.286  
Deleted: efranco@rapiscansystems.co  
m  
Formatted: Underline, font color:  
Blue  
Deleted: Ed Lebakker  
Deleted: 352 East Java Drive  
Deleted: 94089-1328  
Deleted: 408-733-7780 ext.221  
Deleted: elebakker@rapiscansystems.co  
m

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Science and Technology Directorate  
Department of Homeland Security  
Washington, DC 20582

[REDACTED]  
Fax: 202-254-5393  
[REDACTED]

**DHS S&T Financial Analyst:**  
Shaun MacKeever  
Contractor in Support of Department of Homeland Security  
Science and Technology Directorate  
Explosives Division  
Washington, DC 20582

[REDACTED]  
Fax: 202-254-5391  
[REDACTED]

DHS S&T may change the individual designated as a POC upon notice to Rapiscan Systems High Energy Inspection Corporation of such change.

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# Homeland Security

10 July 2006

Northeastern University  
360 Huntington Avenue  
Boston, MA 02115-5000  
Attn: Richard McNeil

**Subject:** Notice to Proceed

**Reference:** BAA 05-03, Prototypes and Technology for Improvised Explosives Device Detection

Dear Mr. McNeil,

As you know, the Homeland Security Advanced Research Projects Agency (HSARPA) of the Department of Homeland Security (DHS) is in the process of negotiating a CPFF contract with your organization based upon your proposal submitted under BAA 05-03.

This letter serves as a Notice to Proceed pending issuance of a contract to your organization no later than September 15, 2006.

Allowable costs under said contract will include all costs you incur in connection with the work covered by this contract during the period starting from the date of this letter to the effective date of the contract provided such costs would have been allowable pursuant to the terms of the contract had the contract been in effect during said period. It is further provided that such incurred costs shall not, in the aggregate, exceed \$500,000 of the estimated cost of the proposed contract unless such amount is increased in writing by the Contracting Officer. Please be advised that if the parties are unable to reach agreement on the award of the proposed contract the Government shall be under no obligation to reimburse you for any costs incurred.

Please feel free to contact Mr. Albert Dainton at [REDACTED] or email [REDACTED] for further assistance or contact me via email at [REDACTED]

Sincerely,

[REDACTED]  
Tim Davis  
Contracting Officer,  
Department of Homeland Security

**Statement of Work for Intelligent Pedestrian Surveillance Platform**  
**Directorate of Science and Technology**  
**U.S. Department of Homeland Security**  
**Explosives Division**

**RSEN-09-00040**

**I. Background**

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge technologies and scientific talent in its quest to make America safer. The DHS Directorate of Science and Technology (S&T) is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and leveraging these existing resources into technological tools to help protect the homeland. DHS S&T is committed to protecting the homeland, its infrastructure, and citizens from threats including those presented by Improvised Explosive Devices (IEDs).

The Counter-IED (C-IED) program at DHS S&T is accomplishing this by developing technologies that aid in the detection of IEDs and their explosive components. DHS S&T customers need a greater capability than what is currently available for detecting IEDs on people, whether at checkpoints or in standoff applications. This is especially relevant at high volume public areas and entrances to important infrastructure.

Intelligent Pedestrian Surveillance Platform will support this effort through providing a potential capability to monitor and track individuals in a crowd.

**II. Scope of Work**

Siemens Corporate Research will perform the tasks described in this SOW with managerial oversight by Northeastern University. This scope of work is a modification to the original contract (awarded under HAA 05-03 Prototypes and Technologies for Improvised Explosives Device Detection). This SOW is a continuation of Phase I work for Northeastern University's subcontractor, Siemens Corporate Research.

In Phase I, Northeastern University completed the following tasks with the exception of the highlighted ones:

- 1) **Intelligent Video:**
  - a. Test and analyze the performance of the Intelligent Video
  - b. Test the software System architecture, and integration
  - c. Test and evaluate visualization front end, policy engine
  - d. Develop system configuration Concept (w/ team)
  - e. Write Preliminary Design Review (Intelligent Video, software integration) (PDF)
  - f. Write Phase I Final Report (Intelligent Video, and software integration)

- 2) Radar:
  - a. Design experiments to validate the algorithms
  - b. Investigate clutter reduction approaches
  - c. Develop system configuration Concept (w/team)
  - d. Write Preliminary Design Review (radar sensor) (PDR)
  - e. Based on the existing wide aperture antenna array, establish specifications and design a single multi-monostatic mm-wave element of the full array.
  - f. Design and fabricate or purchase a standard gain feed and a reflector antenna for radar.
  - g. Build the radar element by combining source, antennas, and drive electronics.
  - h. Fabricate an adjustable support structure for mounting and repositioning the single element to simulate a full array of stationary elements.
  - i. Test the array antenna mm-wave radar element indoors in a large W-band rated anechoic chamber. Compare with modeled results.
  - j. Write Phase I Final Report (radar sensor)
- 3) X-Ray:
  - a. Develop System Configuration Concept (w/team)
  - b. Write Preliminary Design Review (X-ray sensor, hardware integration) (PDR)
  - c. Write Phase I Final Report (X-ray sensor, hardware integration)
- 4) Terahertz:
  - a. Develop system Configuration Concept
  - b. Write Preliminary Design review (THz sensor) (PDR)
  - c. Write Phase I Final Report (THz sensor)
- 5) Suicide bomber Test subject:
- 6) Hardware and software Integration:
- 7) Program Management:
  - a. System Configuration Concept
  - b. Preliminary Design Review (PDR)
  - c. Phase I Final Report

In the extension of Phase I, called Phase Ia and Ib here, Northeastern University and their subcontractor will complete the following tasks completing the work highlighted in Section 1 above:

**1. Fast indexing**

**1.1. Background Subtraction**

The work involved will be incorporating Siemens background modeling techniques to the demo system and detecting boundaries of pedestrian groups.

**1.2. Base-level Illumination Compensation**

Last illumination changes in outdoor environments (e.g., due to fast moving clouds blocking the sun) can cause difficulties in vision algorithm performance. To improve robustness against such lighting changes, we propose to introduce a global illumination compensation component in the system.

### **1.3. Shape-based Indexing**

Siemens will take steps to make the algorithm [Dong07] robust, accurate and real-time. The efforts involve robustness against cast shadow, faster search algorithm and better optimization algorithms.

## **2. Level 1 Detection and Tracking**

### **2.1. Basic Blob Tracking**

The effort involves integrating the tracker and making it perform robustly against environment factors such as changing illumination.

### **2.2. Discriminative Tracker**

Discriminative features are selected that can best separate a pedestrian from the background.

## **3. Level 2 Detection and Tracking**

### **3.1. Pedestrian Detection by Segmentation**

Siemens will build upon the algorithm described in [Dong07]. The improvements will be made in the following areas: 1) Improving the speed. Currently, the algorithm takes on average 1 second to segment the people in the group using the Markov Chain Monte Carlo (MCMC) method. This is far from the desired real-time performance (processing one frame in less than 33 milliseconds). Solving this problem will be a major challenge. 2) Improving the accuracy of the segmented people. We will try to reduce undetected people and false alarms using appearance, color, information and temporal integration.

### **3.2. Multiple Pedestrian Tracking in a Small Group**

Siemens will take steps to make multiple-people tracking in level-2 cases accurate, robust and real-time.

### **3.3. Discriminative Tracking using Discriminative Features Selection and Dynamics of Groups**

3.4. Active Sensor Control for acquiring discriminative features (depends on the funding of the prototype system development)

## **4. Empirical Performance Evaluation**

### **4.1. Empirical Performance Evaluation: Fast Indexing**

### **4.2. Empirical Performance Evaluation: Detection**

### **4.3. Empirical Performance Evaluation: Tracking**

## **5. Advanced HMI – Workflow and Ergonomic/Human Factor Analysis**

A novel HMI concept for use within the framework of the intelligent pedestrian tracking is developed.

## **6. Advanced HMI – Feasibility of using Eye Tracking in Pedestrian Surveillance HMI Design**

An empirical study will evaluate, using human participants, whether the novel HMI concept can feasibly be deployed within the context of the intelligent pedestrian tracker.

## **Prototype Multi-Camera System and IPSP**



## 7. Sensor System

### 7.1. Basic Level Sensor Planning

Basic level sensor planning includes the following tasks:

1) Selection of cameras and lens systems, including the overview panoramic camera(s), stereo camera and the PTZ camera. Selected cameras should be compatible with the Surveillance platform for minimum efforts in camera interface development. 2) Camera geometry design, i.e., where to mount and orient the cameras.

### 7.2. Video Stabilization

Siemens will adapt an internal stabilization algorithm for the HSARPA project needs.

Improvements needed include faster processing speed and robustness against moving crowd.

### 7.3. Camera Calibration

Siemens will use existing calibration algorithms to calibrate the camera systems including the relative displacement and orientation among the overview cameras, the stereo camera, and the PTZ camera.

### 7.4. Multiple View Video Stitching

Once cameras are calibrated, the stitching function can be derived. The emphasis will be on real-time generation of panoramic videos.

### 7.5. Pan/Tilt/Zoom Slaving

Siemens will design the PTZ pointing function. There are two levels of effort involved. First, when an operator clicks on a pixel in the panorama, the PTZ camera will be directed to the corresponding location using a pre-computed zoom-level. Second, in conjunction with the tracking/detection algorithms (work packages 7 and 8), the IVS automatically computes the best pan, tilt angles and zoom level in order to best observe a group of pedestrians.

### 7.6. Stereo Matching and Triangulation

The emphasis will be on robust feature correspondence and real-time performance. A stereo measurement confidence will also be generated. When correspondences are un-reliable, possibly due to occlusion, low-texture or visual ambiguity, low measurement confidence levels will be reported.

## 8. Intelligent Pedestrian Surveillance Platform

Siemens will develop:

### 8.1. System architecture design

### 8.2. Interface for video processing plug-ins to perform intelligent video tasks

### 8.3. A simple user interface for tracking result display and enabling an operator to click on a specific tracked pedestrian for a PTZ close-up survey. The outputs from the plug-ins will be sent to a second PC (command and control (C&C)) as events, utilizing the event handling mechanism of surveillance. A (possibly incomplete) list of events include: panoramic video frame event, object tracking event, auto-zoom event, and optical tripwire event. The results will then be displayed on the C&C computer screen.

Siemens will define a test protocol and test the software quality and compatibility of the demo system

Program Element / Project	Major Tasks	Key Milestones and Deliverables
<b>Phase L. Previously Funded</b>	1. BomDetec Integrated Suicide bomber detection platform	<ul style="list-style-type: none"> <li>• Monthly summaries, due NLT 8 business days after month's end</li> <li>• Monthly teleconferences with DHS S&amp;T Contracting Officer Technical Representative (COTR), NLT 10 days after month's end</li> <li>• Quarterly reports- 3, 6, 9, 12, 15, and 17 months from contract award date</li> <li>• Final report-17 months after award date</li> </ul>
<b>Phase Ia. Pedestrian Tracker Base Package Funded by this action.</b>	<ol style="list-style-type: none"> <li>1. Fast indexing</li> <li>2. Level 1 Detection and Tracking</li> <li>3. Level-2 Pedestrian Detection and Tracking</li> <li>4. Empirical Performance Evaluation</li> <li>5. Advanced HMI</li> </ol>	<ul style="list-style-type: none"> <li>• Monthly summaries, due NLT 8 business days after month's end</li> <li>• Monthly teleconferences with DHS S&amp;T COTR, NLT 10 days after month's end</li> <li>• Demonstration - 6 months after award</li> </ul>

Program Element / Project	Major Tasks	Key Milestones and Deliverables
		<ul style="list-style-type: none"> <li>• Demonstration- 12 months after award</li> <li>• Quarterly reports and reviews- 3, 6, 9, 12, 15, and 17 months from award</li> <li>• Final report-17 months after award date</li> </ul>
<p><b>Phase II. Prototype Multi-Camera System and IPSP. Funded by this action.</b></p>	<ol style="list-style-type: none"> <li>1. Basic Level Sensor Planning</li> <li>2. Video Stabilization</li> <li>3. Camera Calibration</li> <li>4. Multiple View Video Switching</li> <li>5. Pan/Tilt/Zoom Staying</li> <li>6. Stereo Matching and Triangulation</li> <li>7. Intelligent Pedestrian Surveillance Platform</li> </ol>	<ul style="list-style-type: none"> <li>• Monthly summaries, due SLI 8 business days after month's end</li> <li>• Monthly teleconferences with DHS S&amp;T COTR, SLI 10 days after month's end</li> <li>• Demonstration - 6 months after award</li> <li>• Demonstration- 12 months after award</li> <li>• Quarterly reports and reviews- 3, 6, 9, 12, 15, and 17 months from award</li> <li>• Final report and review-17 months after award date</li> <li>• IRL6 Level Prototype Demo</li> </ul>

Monthly Status Teleconferences will consist of the following:

A monthly teleconference will take place within 10 business days of the end of the month between the Principal Investigator for Northeastern University and subcontractor Siemens Corporate Research and DHS S&T COTR. In addition, a supplemental document, not to exceed one page in length, will be electronically submitted to the DHS S&T COTR at least 48 hours prior to the scheduled teleconference. This document will describe the previous 30 calendar days' activity, technical progress achieved against goals, difficulties encountered, recovery plans (if needed), plans for the next 30 day period, and financial status. The teleconference and one page document will satisfy monthly reporting requirements.

Due Date: Within 8 business days of the end of the month for summary sheet and 10 days for teleconference.

Quarterly Reports and Reviews will consist of the following:

Quarterly presentations will take place within 5 days of submission of the quarterly reports. Quarterly reports are due as outlined in the chart above and are not to exceed 10 pages with cover page and will be electronically submitted to the DHS S&T COTR. The Quarterly Presentations will be either conducted via phone or in person between the Principal Investigator for Northeastern University and subcontractor Siemens Corporate Research and the DHS S&T COTR to discuss the Quarterly Reports. These reports will describe the previous 90 calendar days' activity (60 days for the final time period), principals involved in the actual work of the period, technical progress achieved against goals, difficulties encountered, funds expended against each sub-task in the previous period, recovery plans (if needed), explicit plans for the next time period, and financial status.

Due Date: 3, 6, 9, 12, 15, and 17 months after award

Final Reports will consist of the following:

For a final report, Northeastern University and subcontractor Siemens Corporate Research will provide a technical report of their work performed during the preceding Phase or Phases. This will include, where applicable, performance predictions, estimates of cost of ownership, and an enumeration of remaining unknowns and uncertainties. This final report will be a cumulative, stand-alone document that describes the work of the entire Phase leading up to it. It must include any technical data gathered, such as, measurements taken, models developed, simulation results, and formulations developed. This final report should also include "lessons learned" from the effort, recommendations for future research in this area, and a comprehensive account of all funds expended. Northeastern University and subcontractor Siemens Corporate Research will develop a plan for executing Phase II of the project. This must include a test plan for evaluating the prototype video analytics system. The final report will also include documentation of the executed work plan, including the contracted Statement of Work (SOW), as well as a work plan and SOW for proposed future efforts where appropriate.

Due Date: 17 months after award

Other Reports:

Additional deliverables will be required depending upon specific program attributes. Northeastern University and subcontractor Siemens Corporate Research and government will come to mutual agreement of the format and extent of such deliverables at the time of award. Additional deliverables may include, but are not limited to:

- Participation in an annual DHS event at the discretion of the DHS S&T Technical Representative. Possible events include presentation or exhibition at Stakeholder's meetings, customer events, or select technical conferences,
- Review meetings include a kickoff meeting and a final review meeting. Location of these meetings will be at the discretion of the DHS S&T Technical Representative, but will likely be at the preferred location of Northeastern University, Siemens Corporate Research or DHS S&T HQ
- Where appropriate, system engineering drawings, blueprints, and specifications will be compiled and delivered to DHS S&T along with the final report.

### **III. Other Contract Details**

- A. Period of Performance.** *The period of performance for this SOW is from the contract award date to 18 months after the award date. DHS may give subsequent extension notices to Northeastern University and subcontractor Siemens Corporate Research in writing for further performance in accordance with the terms of this SOW.*
- B. Travel.** *Travel may be required in the performance of the duties listed herein. It is anticipated that travel will be limited to the Washington DC metro area, Boston, MA and Princeton, NJ. The DHS S&T COTR must approve all additional travel. All travel and other direct costs associated with the execution of the tasks indicated in this SOW will be reimbursed in accordance with the limits set forth in the Federal Travel Regulations, provided the performer provides appropriate supporting documentation.*
- C. DHS-Furnished Information.**
1. *DHS will provide certain DHS information, materials, and forms unique to DHS to Northeastern University and subcontractor Siemens Corporate Research to support certain tasks under this SOW.*
  2. *The DHS S&T COTR identified in this SOW will be the point of contact (POC) for identification of any required information to be supplied by DHS.*
  3. *Northeastern University and subcontractor Siemens Corporate Research will prepare any documentation according to the guidelines provided by DHS.*
- D. DHS-Furnished Facilities, Supplies, and Services.** *If work at DHS-provided facilities is necessary for the services being performed under this SOW, such facilities will be provided*

at S&T's office in Washington, D.C. Parking facilities are not provided, however several commercial parking facilities are located near S&T's office. Basic facilities such as work space and associated operating requirements (e.g., phones, desks, utilities, desktop computers, and consumable and general purpose office supplies) will be provided to Northeastern University and subcontractor Siemens Corporate Research personnel working in S&T's office.

- F. Place of Performance.** Northeastern University and subcontractor Siemens Corporate Research will perform the work under this SOW at Siemens Corporate Research in Princeton, NJ.
- F. DHS-Furnished Property.** DHS property will not be provided to Northeastern University and subcontractor Siemens Corporate Research unless otherwise agreed in a task order issued under this SOW. In such instances, DHS will maintain property records.

Before purchasing any individual item equal to or exceeding \$50,000 that is required to support technical tasks performed pursuant to this SOW, Northeastern University and subcontractor Siemens Corporate Research shall obtain the DHS S&T Technical Representative's prior written consent. The DHS S&T COTR may lower or raise the aforementioned \$50,000 threshold at his/her discretion and on written notice to Northeastern University and subcontractor Siemens Corporate Research. If the DHS S&T COTR consents to such purchase, such item shall become the property of DHS. Northeastern University and subcontractor Siemens Corporate Research will maintain any such items according to currently existing property accountability procedures. The DHS S&T COTR will determine the final disposition of any such items.

- G. Deliverables.** Northeastern University and subcontractor Siemens Corporate Research will provide all deliverables identified in this SOW directly to the DHS S&T COTR and DHS Contracting Officer with a copy of the transmittal letter to the Financial Analyst.
- H. Program Status Report.** Northeastern University and subcontractor Siemens Corporate Research will deliver a monthly program status report to the DHS S&T COTR and DHS S&T Explosives Business Operations Manager, and DHS S&T Financial Analyst. This document is due within 8 business days of the end of the month and will describe the previous 30 calendar days' activity, technical progress achieved against goals, difficulties encountered, recovery plans (if needed), plans for the next 30 day period, and financial status. The length of the report will not exceed one page.
- I. Funding Requirements.** DHS will provide funding to Northeastern University and subcontractor Siemens Corporate Research in accordance with DHS's appropriations and available funds.
- J. Security Requirements.**

1. All work performed under this SOW is unclassified unless otherwise specified by DHS.
2. If classified work is required under this SOW, DHS will provide specific guidance to Northeastern University and subcontractor Siemens Corporate Research as to which work will be conducted in a classified manner and at which classification level. Northeastern University and subcontractor Siemens Corporate Research will also adhere to other applicable Government orders, guides, and directives pertaining to classified or confidential work.

#### **IV. Points of Contact**

Northeastern University Points of Contact (POCs) are as follows:

**Technical POC(s) –**

Michael Silevitch  
Northeastern University  
360 Huntington Avenue, 302 Stearns Center  
Boston, MA 02115

**Financial POC(s) –**

John Harris  
Director of Research and Property Accounting  
Northeastern University, 251RI  
360 Huntington Avenue  
Boston, MA 02115  
Tel: [REDACTED]

Lawrence W. Barnett

**Acting Director, Division of Sponsored Projects Administration**

Northeastern University  
360 Huntington Avenue, 405 Lake Hall  
Boston, MA 02115  
Tel: [REDACTED]  
Fax: 617-373-4595  
[REDACTED]

Anne Magrath, CRA  
Director of Finance & Research Contracts Administration Operations  
The Bernard M. Gordon Center for Subsurface Sensing and Imaging Systems  
Northeastern University  
360 Huntington Avenue, 302 Stearns Center  
Boston, MA 02115  
Tel: [REDACTED]

Cell: [REDACTED]  
Fax: 617-373-8627

Northeastern University may change the individual designated as a POC upon notice to DHS S&T of such change.

The DHS POCs are as follows:

**DHS S&T COTR --**

Michael Shepard, PhD  
Department of Homeland Security  
ATTN: Science and Technology Directorate  
Explosives Division  
245 Murray Lane  
Washington, DC 20528  
Tel: [REDACTED]  
Fax: 202-254-5396  
[REDACTED]

**DHS S&T Explosives Operations Manager -**  
Wallicia Tapscott  
Department of Homeland Security  
ATTN: Science and Technology Directorate  
Explosives Division  
245 Murray Lane  
Washington, DC 20528  
Tel: [REDACTED]  
Fax: 202-254-5395  
[REDACTED]

**DHS S&T Financial Analyst -**  
Omar Canales  
Contractor in Support of:  
Department of Homeland Security  
ATTN: Science and Technology Directorate  
Office of Chief Financial Officer  
245 Murray Lane  
Washington, DC 20528  
Tel: [REDACTED]  
Fax: 202-254-5392  
[REDACTED]

DHS S&T may change the individual designated as a POC upon notice to Northeastern University and subcontractor Siemens Corporate Research of such change.



<b>AWARD/CONTRACT</b>	THIS CONTRACT IS A RATED ORDER UNDER DPAS (19 CFR 208)	RATINGS	PAGE OF PAGES 31
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2 CONTRACT (Proc and Item) NO. HSRQDC-07-C-00016	3 EFFECTIVE DATE 07/19/2006	4 REQUISITION/PURCHASE REQUEST/PROJECT NO. RSEN-07-00014
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5 ISSUED BY U.S. Dept. of Homeland Security Office of Procurement Operations S&T Acquisition Branch 245 Murray Lane, SW Building 410 Washington DC 20528	CODE DHS/OPO/S&T/S&T	6 ADMINISTERED BY (If other than Item 5) OPO S&T Acquisition Branch	CODE DHS/OPO/S&T/S&T
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7 NAME AND ADDRESS OF CONTRACTOR (No. Street, City, Country, State and ZIP Code) NORTHEASTERN UNIVERSITY 360 HUNTINGTON AVENUE 251 RT BOSTON MA 021155000	8 DELIVERY <input type="checkbox"/> FOB ORIGIN <input checked="" type="checkbox"/> OTHER (See below)
	9 DISCOUNT FOR PROMPT PAYMENT Net 30

10 SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN	ITEM
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CODE 0014236310000	FACILITY CODE
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11 SHIP TO/MARK FOR Department of Homeland Security 245 Murray Lane Bldg. 410 Washington DC 20528	CODE DHS	12 PAYMENT WILL BE MADE BY Department of Homeland Security Science and Technology Directorate 245 Murray Lane Building 410 Attn: Ms. Deborah DeVault Washington DC 20528	CODE
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13 AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION 10 U.S.C 2304 (a)(1)      41 U.S.C 253 (a)(1)	14 ACCOUNTING AND APPROPRIATION DATA See Schedule
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15A ITEM NO	15B SUPPLIES/SERVICES	15C QUANTITY	15D UNIT	15E UNIT PRICE	15F AMOUNT
Continued					
15G TOTAL AMOUNT OF CONTRACT					\$1,305,181.00

DD	DDC	DESCRIPTION	PAGES	DD	DDC	DESCRIPTION	PAGE(S)
PART I - THE OFFER				PART II - CONTRACT DOCUMENTS			
X	A	SOLICITATION/CONTRACT FORM	1	X	I	CONTRACT CLAUSES	16
X	B	SUPPLIES OR SERVICES AND PRICES/COSTS	4	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH			
X	C	DESCRIPTIONS/PIC'S/WORK STATEMENT	5	X	J	LIST OF ATTACHMENTS	26
X	D	PACKAGING AND MARKING	9	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
X	E	INSPECTION AND ACCEPTANCE	9	X	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	27
X	F	DELIVERIES OR PERFORMANCE	10	PART V - INSTR. COND. AND NOTICES TO OFFERORS			
X	G	CONTRACT ADMINISTRATION DATA	11	L	INSTR. COND. AND NOTICES TO OFFERORS		
X	H	SPECIAL CONTRACT REQUIREMENTS	14	M	EVALUATION FACTORS FOR AWARD		

CONTRACTING OFFICER WILL COMPLETE ITEM BY OR AS APPLICABLE

17. <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return _____ copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the solicitation stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)	18. <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____ including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.
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18A. NAME AND TITLE OF SIGNER (Type or print) Maureen A. Joyce, Director, DSPA	18B. NAME OF CONTRACTOR BY _____	18C. DATE SIGNED 12-4-2006	19A. NAME OF CONTRACTING OFFICER Wanda J. Arwood	19B. UNITED STATES OF AMERICA BY _____	19C. DATE SIGNED 12/6/06
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NAME OF OFFEROR OR CONTRACTOR  
**NORTHEASTERN UNIVERSITY**

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0001	<p>Tax ID Number: 04-1679980 DUNS Number: 001423631+0000 POB: Destination</p> <p><b>PTIEDD - Phase I: BomDetec Project Including Data Deliverables</b> Fully Funded Obligation Amount: [REDACTED] Product/Service Code: R425 Product/Service Description: ENGINEERING &amp; TECHNICAL SERVICES</p> <p>Delivery: 04/09/2007 Accounting Info: NONE000-000-RX-06-10-DC-005-06-01-0000-00-00-00-00 -GE-DL-25-50-00000 Funded: \$903,678.00 Accounting Info: NONE000-000-5X-06-10-DC-005-06-01-0000-00-00-00-00 -GE-DL-25-50-00000 Funded: \$120,500.00 Accounting Info: NONE000-000-5X-06-20-DC-005-06-01-0000-00-00-00-00 -GE-DL-25-50-00000 Funded: \$281,003.00</p> <p>CLIN 0001 Total Estimated Cost: [REDACTED] CLIN 0001 Total Fixed Fee: [REDACTED] CLIN 0001 Total CPFF: [REDACTED]</p> <p>CLIN 0001 is incrementally funded in the amount of \$1,305,181. This amount appears in Block 15G of the SF26 as the amount obligated with this action.</p>	1	LO	[REDACTED]	[REDACTED]
0002	<p><b>OPTION 1: PTIEDD - Phase II: BomDetec Project Including Data Deliverables</b> Amount: \$1,697,743.00 (Option Line Item) 04/09/2007 Product/Service Code: R425 Product/Service Description: ENGINEERING &amp; TECHNICAL SERVICES</p> <p>Delivery: 365 Days After Award Accounting Info:</p> <p>CLIN 0002 Total Estimated Cost: [REDACTED] CLIN 0002 Total Fixed Fee: [REDACTED] CLIN 0002 Total CPFF: [REDACTED] Continued ...</p>	1	LO	[REDACTED]	0.00

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 HSHQDC-07-C-00016

PAGE OF  
 3 31

NAME OF OFFEROR OR CONTRACTOR

NORTHEASTERN UNIVERSITY

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0003	<p>OPTION 2: PTIEDD - Phase III: BomDetec Project                      Including Data Deliverables                      Amount: \$523,332.00 (Option Line Item)                      04/06/2008                      Product/Service Code: R425                      Product/Service Description: ENGINEERING &amp;                      TECHNICAL SERVICES</p> <p>Delivery: 180 Days After Award                      Accounting Info:</p> <p>CLIN 0003 Total Estimated Cost: [REDACTED]                      CLIN 0003 Total Fixed Fee: [REDACTED]                      CLIN 0003 Total CPFF: [REDACTED]</p> <p>If and to the extent that all options are                      exercised:</p> <p>The total amount of award: \$3,932,458.00. The                      obligation for this award is shown in box 15G.</p>	1	LO	[REDACTED]	0.00

**SECTION B - SUPPLIES/SERVICES AND PRICES/COSTS**

**B-1: CONTRACT TYPE AND SCHEDULE OF ITEMS**

The purpose of this cost-type contract is to provide prototype research and development (R&D) for the Department of Homeland Security for the Prototypes and Technology for Improvised Explosives Device Detection program (PTIEDD) program which seeks to support R&D of next generation or novel technologies or prototypes for detection of improvised explosives in vehicles, in leave-behind packages, or carried by suicide bombers.

**B-2: CONTRACT LINE ITEMS**

1. The Contractor shall perform the R&D Contract Line Item Numbers (CLINs) identified below on a Cost-Plus-Fixed-Fee (CPFF) basis. The fixed fee for all CLINs is based on 8.50%. The Contractor shall consider the Option CLINs Estimated Costs/Fixed Fees to be Not-To-Exceed (NTE) ceilings that can be changed only through a contract modification.

**Base Period:**

CLIN	Description	Qty	Unit	Total Estimated Cost	Fixed Fee	Total CPFF
0001	PTIEDD – Phase I: BomDetec Project Including Data Deliverables	1	Lot			

**Option 1: Phase II**

CLIN	Description	Qty	Unit	Total Estimated Cost	Fixed Fee (estimated)	Total Estimated CPFF
0002	PTIEDD – Phase II: BomDetec Project Including Data Deliverables	1	Lot			

**Option 2: Phase III**

CLIN	Description	Qty	Unit	Total Estimated Cost	Fixed Fee (estimated)	Total Estimated CPFF
0003	PTIEDD Phase III: BomDetec Project Including Data Deliverables	1	Lot			

2. The intent of the Government is that this contract be considered a “completion” cost effort. That is, the contractor is obliged to perform through to phase completion. Minor increases in costs will most likely be covered. Significant changes due to the Contractor’s underestimating the level of effort or any changes to the Contractor’s technical approach will require Government evaluation of the Contractor’s progress. The Contracting Officer may

request a revised proposal at any time should the situation warrant. The Contractor is obligated to notify the Contracting Officer upon exhaustion of 75% of funding. All decisions regarding additional funding will be subject to the availability of funds.

### **B-3: OPTIONS**

1. This PTIEDD project is being conducted in three phases: Phase I (CLIN 0001), develops the idea sufficient to conduct a Preliminary Design Review; Phase II (CLIN 0002, Option 1) develops the idea further and completes a Breadboard design; Phase III (CLIN 0003, Option 2) is the final development and completion of the Preproduction design.

## **SECTION C - DESCRIPTION/SPECIFICATIONS**

### **C-1: STATEMENT OF WORK**

The BomDetec -- Wide Area Surveillance and Suicide Bomber Detection at >10M project is comprised of three (3) phases. At this time, only Phase I is funded and authorized to proceed. The work described below shall be accomplished in Phase I. As the Option Phases II and III are authorized and funded, additional work statements will be incorporated into this contract by modification.

### **PHASE I**

**Scope:** In Phase I, four existing sensors will be tested or assessed and evaluated independently to determine the most effective combination of sensors. The sensors include (1) intelligent video, (2) Millimeter Wave Radar (MMW Radar), (3) X-Ray, and (4) Terahertz Wave (THz). Each sensor will be evaluated against a set of simulated suicide bomber dummies in laboratory and field conditions. If a sensor makes a substantive contribution, it will be included in the design for the Phase II breadboard.

#### **Tasks:**

#### **1.0 Intelligent Video:**

The intelligent video portion of this effort will use multiple static cameras at different corners of a Z Backscatter Van (ZBV) in the final product and also potentially on utility poles and or buildings. The capability to detect and track humans using one camera has already been demonstrated. Enhancements will be made to detect and track one or more persons and objects using multiple cameras. Appearance models will also be developed to improve tracking performance after temporary occlusion. In addition to developing the Intelligent Video Sensor, Siemens will obtain the data needed to control and gather data from the other sensors (Radar, X-ray backscatter). They will also consider the Graphical User Interface (GUI) and concepts of operation (CONOPS) during Phase I. Under this task, the contractor shall:

- 1.1 Evaluate sensor data
  - 1.1.1 Radar data analysis
  - 1.1.2 Backscatter X-ray preprocess/enhance--based on physical model
  - 1.1.3 Backscatter X-ray data analysis

- 1.2 Design and integrate threat measure
- 1.3 Design user interface scheme
- 1.4 Define data communication protocol
- 1.5 Define Integration and testing protocol
- 1.6 Define software architecture and data structures
- 1.7 Define requirements specification
- 1.8 Select Intelligent Video subsystems
- 1.9 Develop Persistent tracking
- 1.10 Develop Feature based target classification
- 1.11 Develop Multi-sensor calibration
- 1.12 Develop Intelligent Video test plan
- 1.13 Test and analyze the performance of Intelligent Video
- 1.14 Test the software System architecture, and integration
- 1.15 Test and evaluate visualization front end, policy engine
- 1.16 Develop System Configuration Concept (w team)
- 1.17 Write Preliminary Design Review (Intelligent Video, software integration) (PDR)
- 1.18 Write Phase I Final Report (Intelligent Video, and software integration)

## 2.0 Radar

The radar portion of this effort will use W-band millimeter wave radar to obtain dual polarization data for long range threat detection. The result of prior work establishes a preliminary assessment of the capability of polarimetric millimeter wave radar to detect the threats. This provides the basis for following this approach as opposed to considering alternatives. Measurements will be made using single polarization radar in such a way as to obtain data for two orthogonal polarizations for subsequent analysis. The data will show the threat detection capability of dual polarization millimeter wave radar as a part of a sensor suite for Phase II. Modifications to the radar to support a polarimetric mode operationally will be designed in Phase I and implemented in Phase II. Under this task the contractor shall:

- 2.1 Identify radars to be used/studied on the program
- 2.2 Obtain transmission license approvals
- 2.3 Provide radar specifications including: data output, data rates
- 2.4 Define required data output and format
- 2.5 Determine if available data is sufficient for gross conclusions that validate existing data
- 2.6 Determine if available data is sufficient for algorithm input
- 2.7 Determine basic modifications to radars (if needed) to provide required data output
- 2.8 Determine if modifications to radar can be accomplished in Phase I
- 2.9 Identify outdoor test range
- 2.10 Run initial, simple experiments to baseline radar performance with and without target simulants at an outdoor test range
- 2.11 Evaluate the results (phenomenological interpretation)
- 2.12 Develop detailed experimental testing protocol for indoor/outdoor environments
- 2.13 Identify subjects, clothing, targets, innocent objects
- 2.14 Identify environmental clutter to be used
- 2.15 Define the system requirements, software/data requirement specifications for Operating Envelope including antenna coverage/size

- 2.16 Design antenna required for Phase II, design wider aperture/tighter beam, polarization.
- 2.17 Determine advantages/modification for other polarizations
- 2.18 Define implementation to obtaining pulse to pulse VV, HH, and VH and other polarization data – radar modification
- 2.19 Develop multi-polarization algorithms based on theoretical backscatter predictions
- 2.20 Design experiments to validate the algorithms
- 2.21 Investigate clutter reduction approaches
- 2.22 Develop System Configuration Concept (w team)
- 2.23 Write Preliminary Design Review (radar sensor) (PDR)
- 2.24 Write Phase I Final Report (radar sensor)

### 3.0 X-Ray (Phase I)

In the X-ray Backscatter portion of this effort, the contractor will assess the ability of a Long Distance Viewing X-ray system to determine its ability to differentiate between people with metal and people without metal (and people with and without appropriate density plastic) at distances up to 10 meters. The X-ray sensor's ability to image metal conformation at approximately 10 meters will be investigated. This assessment will be accomplished using existing data previously collected using a Long Distance Viewing (LDV)-configured Z Backscatter Van (ZBV). Differences between a standard ZBV and the LDV will be analyzed for applicability to suicide bomber detection. Under this task the contractor shall:

- 3.1 Develop system hardware design
  - 3.1.1 Mechanical Design
  - 3.1.2 Electrical Design
    - 3.1.2.1 Power
    - 3.1.2.2 Control
    - 3.1.2.3 Signal
  - 3.1.3 Thermal Design
  - 3.1.4 Software Design
    - 3.1.4.1 Control Software Integration
    - 3.1.4.2 Data Acquisition
    - 3.1.4.3 Data Analysis and Fusion
- 3.2 Develop X-ray sensor evaluation criteria
- 3.3 Evaluate X-ray sensor data (using data on hand)
- 3.4 Develop System Configuration Concept (w team)
- 3.5 Write Preliminary Design Review (X-ray sensor, hardware integration) (PDR)
- 3.6 Write Phase I Final Report (X-ray sensor, hardware integration)

### 4.0 Terahertz (THz)

THz radiation will be used for spectroscopic confirmation of a threat. In this portion of the effort, THz technology will be evaluated to determine the appropriate configuration to use with the system. Frequency resonances (signatures) of selected explosives and their related compounds will be tested with distance (up to 10 meters) and weather condition variables. The standoff detection distance will be optimized in Phase I. Under this task the contractor shall:

- 4.1 Select appropriate THz technology
- 4.2 THz sensor test bed system
  - 4.2.1 Refine the library of THz-TDS signatures of explosives
- 4.3 Develop fast acquisition system – Optical delay line
- 4.4 Develop THz beam focusing subsystem
- 4.5 Improve the sensitivity-THz emitter and detector technology
- 4.6 Design Stand-off detection optics system
- 4.7 Design probe pulse circulator
- 4.8 Assemble THz laboratory system
  - 4.8.1 Hardware
  - 4.8.2 Electronics
  - 4.8.3 Software
- 4.9 Develop laboratory test
- 4.10 Test and evaluate performance
- 4.11 Develop System Configuration Concept
- 4.12 Write Preliminary Design review (THz sensor)(PDR)
- 4.13 Write Phase I Final Report (THz sensor)

#### **5.0 Suicide Bomber Test Subject**

The contractor has an X-ray mannequin that can be used as a subject and an amateur suicide bomber vest that can be used. The Government will provide information to assist the contractor design simulated suicide bomber test objects.

- 5.1 Procure or investigate bomber test subject
- 5.2 Design bomber test subject
- 5.3 Fabricate typical suicide bomber test objects

#### **6.0 Hardware and Software Integration (Phase I)**

As described in section 3.0 X-ray, the hardware integrator will gather general information about each of the sensors and will perform an initial assessment of the mechanical, electrical, thermal, and optical integration issues of the sensors into their ZBV. A preliminary integration design will be presented at the PDR. As described in section 1.0 Intelligent Video, the software integrator will gather general software information about each sensor and will obtain information about the sensors data for signal and control. The contractor will design a preliminary sensor fusion and command and control system, which will be presented at the PDR.

#### **7.0 Program Management**

To manage the BomDetec Project Phase I effort, the contractor shall appoint a Program/Project Manager and implement processes to monitor the following areas:

- 7.1 Technical (planning, tracking, managing)
- 7.2 Financial (planning, tracking, managing)
- 7.3 Schedule (Gantt, deliverables, milestones)
- 7.4 Communication (weekly meeting, monthly technical / cost progress reports, reviews, final report)
- 7.5 Program Support (travel, meetings, contract)
- 7.6 System Configuration Concept
- 7.7 Preliminary Design Review (PDR)
- 7.8 Phase I Final Report



**8.0 Deliverables**

Item	Time After Award
1. Monthly Technical Progress and Cost Reports	Monthly
2. Report on Laboratory and Field Evaluation Criteria	Thirty (30) Weeks
3. Report on Laboratory and Field Evaluation Results for each sensor	Thirty-four (34) weeks
4. Independent Review Board Report on the use of Human Test Subjects	Thirty (30) days prior to testing
5. System Configuration Concept	Thirty-six (36) weeks
6. Preliminary Design Review (PDR)	Thirty-six (36) weeks
7. Final Report Phase I	Nine (9) months

**SECTION D - PACKAGING AND MARKING**

**D-1: PACKAGING AND MARKING**

(a) Data contained in the List of Deliverables delivered under this contract shall be electronically submitted to [REDACTED]. If delivery is submitted by mail, the contractor shall preserve, pack and package in such a way to ensure complete delivery at destination without damage or deterioration of the supplies due to the hazards of shipping, handling or storage. Standard commercial preservation, packaging and packing shall be employed to meet the packaging requirements of the carrier and to insure delivery, to the addressee at destination. See G-2 for specific delivery address.

(b) The Contractor shall mark all shipments under this contract with the contract number and recipients' name. This same data shall also be included on the following: shipping documentation, date submitted, invoices and correspondence pertaining to a particular delivery. NOTE: Failure to mark all packages, boxes, etc., as indicated above, may result in return of the shipment at the contractor's expense.

**SECTION E - INSPECTION AND ACCEPTANCE**

**E-1: CLAUSES INCORPORATED BY REFERENCE**

The following FAR clauses are available in full text at <http://farsite.hill.af.mil> and incorporated by reference into this contract:

52.246-8 Inspection of Research and Development – Cost Reimbursement	May 2001
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**E-2: INSPECTION AND ACCEPTANCE BY THE GOVERNMENT**

The Contracting Officer's Technical Representative (COTR) identified in Section G of this Contract is responsible for inspection and acceptance of all services, incoming shipments, documents, and services performed specifically for the Contract.

**E-3: ACCEPTANCE CRITERIA**

Certification by the Government of satisfactory services provided is contingent upon the Contractor performing in accordance with the terms and conditions of the contract and all modifications.

**SECTION F - DELIVERIES OR PERFORMANCE**

**F-1: CLAUSES INCORPORATED BY REFERENCE**

The following FAR clauses are available in full text at <http://farsite.hill.af.mil> and incorporated by reference into this contract:

52.242-15	Stop-Work Order	Aug 1989
Alt I	(Alternate I)	Apr 1984 (Alt I)
52.247-34	F.O.B. Destination	Nov 1991

**F-2: PERIOD OF PERFORMANCE**

The period of performance of Phase I of this Contract is from date of authorization to proceed through nine (9) months. Authorization to proceed was granted by the Contracting Officer on 10 Jul 2006. Therefore the Phase I period of performance shall conclude on 9 April 2007. The period of performance for all optional phases, if exercised, is as follows:

- Option 1: CLIN 0002 (Phase II) – From date of option exercise through twelve (12) months
- Option 2: CLIN 0003 (Phase III) – From date of option exercise through six (6) months

The total period of performance for this contract, if all options are exercised, shall not exceed twenty-seven (27) months from date of authorization to proceed.

**F-3: PLACE OF PERFORMANCE**

The research and development efforts shall be performed at the contractor, or designated subcontractor, facility.

**F-4: DELIVERY ADDRESS**

All deliverables shall be submitted electronically to the Government Program Manager identified in Section G of this Contract.

**F-5: METHOD OF DELIVERY**

Electronic copies shall be delivered in Microsoft Office formatted files, unless otherwise specified by the COTR. Electronic submission shall be made via e-mail, unless otherwise directed by the COTR.

**F-6: DELIVERABLE /DELIVERY SCHEDULE**

All deliverable schedules are contained in Section C, Statement of Work.

**SECTION G - CONTRACT ADMINISTRATION DATA****G-1: CONTRACTING OFFICER (CO)**

The Contracting Officer for this Contract is identified below:

Name:	Wanda J. Armwood
Title:	Contracting Officer
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency / Office of Procurement Operations
Address:	Washington, DC 20598
Voice:	[REDACTED]
Fax:	(202) 254-6167
Email:	[REDACTED]

**G-2: CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)**

The COTR for this Contract is identified below:

Name:	Trent DePersia
Title:	Program Manager
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency
Address:	Washington, DC 20598
Voice:	[REDACTED]
Fax:	(202) 254-6170
Email:	[REDACTED]

**G-3: CONTRACTING OFFICER'S AUTHORITY**

The Contracting Officer (CO) assigned to this contract has responsibility for ensuring the performance of all necessary actions for effective contracting; ensuring compliance with the terms of the contract and safeguarding the interests of the United States in its contractual relationships. The CO is the only individual who has the authority to enter into, administer, or terminate this contract and is the only person authorized to approve changes to any of the

requirements under this contract, and notwithstanding any provision contained elsewhere in this contract, this authority remains solely with the CO.

It is the Contractor's responsibility to contact the CO immediately if there is even the appearance of any technical direction that is or may be outside the scope of the contract. The Government will not reimburse the Contractor for any work not authorized by the CO, including work outside the scope of the contract.

**G-4: CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (HSAR 3052.242-72) (DEC 2003)**

- (a) The Contracting Officer may designate Government personnel to act as the Contracting Officer's Technical Representative (COTR) to perform functions under the contract such as review or inspection and acceptance of supplies, services, including construction, and other functions of a technical nature. The Contracting Officer will provide a written notice of such designation to the Contractor within five working days after contract award or for construction, not less than five working days prior to giving the contractor the notice to proceed. The designation letter will set forth the authorities and limitations of the COTR under the contract.
- (b) The Contracting Officer cannot authorize the COTR or any other representative to sign documents, such as contracts, contract modifications, etc., that require the signature of the Contracting Officer.

**G-5: INTERPRETATION OR MODIFICATION**

No oral statement by any person, and no written statement by anyone other than the Contracting Officer (CO), or his/her authorized representative acting within the scope of his/her authority, shall be interpreted as modifying or otherwise affecting the terms of this contract. All requests for interpretation or modification shall be made in writing to the CO.

**G-6: ACCOUNTING AND APPROPRIATION DATA**

The accounting and appropriation data corresponding to this contract is found in Block 14 on the award cover page (SF-26).

CLIN 0001 of this contract is incrementally funded. The sum of [REDACTED] is obligated under this action and allotted to CLIN 0001. As such, the Limitation of Funds clause (FAR 52.232-22) applies to this contract. If and when funding becomes available, the Government will unilaterally modify this contract to provide additional funds.

**G-7: INVOICING INSTRUCTIONS**

In order to initiate payment, the Contractor shall submit proper invoices for payment in the manner and format described herein:

The Contractor shall submit an original invoice or send via facsimile or email to the following address:

Department of Homeland Security  
Science & Technology Directorate  
Attn: PPB / Deborah DeVault  
Washington, DC 20528  
Email address: [REDACTED]

Each invoice shall include the following:

- 1) Contract Number
- 2) Contractor Name
- 3) Date of Invoice
- 4) Invoice/voucher Number
- 5) Material
- 6) Labor
- 7) Benefits
- 8) Overhead
- 9) Other Direct Cost (ODCs)
- 10) Travel
- 11) Total Costs

**G-8: TRAVEL**

- (a) Approval of Foreign Travel: The cost of foreign travel is allowable only when the specific written approval of the Contracting Officer or Contract Specialist responsible for administration of the contract is obtained prior to commencing the trip. Approval must be requested at least 30 days before the scheduled departure date in order that all necessary clearances may be processed. Each individual trip must be approved separately even though it may have been include in a previously approved budget Foreign travel is defined as any travel outside of Canada and the United States and its territories and possessions.
- (b) Domestic/local travel shall take place in accordance with the applicable Cost Principles for Universities (FAR 31.3) and the Federal Travel Regulations for Industrial Subcontractors.

**G-9: GOVERNMENT FURNISHED EQUIPMENT/INFORMATION/MATERIALS**

For performance of the Phase I effort, the Program Manager will provide information regarding the characteristics of a simulated suicide bomber vest and/or other suicide bomber objects. This Government Furnished Information will be provided to assist the contractor prior to the sensor evaluation testing/suicide bomber simulation. Should GFE/GFI/GFM be required in Phases II and/or III, the Government and Contractor will follow the necessary steps to provide such property.

**SECTION H - SPECIAL CONTRACT REQUIREMENTS****H-1: CONFIDENTIALITY OF INFORMATION**

- (a) To the extent that the work under this contract requires that the Contractor be given access to or be furnished with confidential or proprietary business, technical, or financial information or data belonging to other entities which is clearly marked as confidential or proprietary, the Contractor shall, after receipt thereof, treat such information in confidence and agrees not to appropriate such information to its own use or to disclose such information to third parties unless specifically authorized in writing by the Contracting Officer. The foregoing obligations, however, shall not apply to:
- (1) Information or data which is in the public domain at the time of receipt by the Contractor;
  - (2) Information or data which is published or otherwise subsequently becomes part of the public domain through no fault of the Contractor;
  - (3) Information or data which the Contractor can demonstrate was already in its possession at the time of receipt thereof; or
  - (4) Information or data which the Contractor can demonstrate was received by it from a third party who did not require the Contractor to treat it in confidence.
- (b) The Contractor agrees (1) to enter into an agreement, identical in all material respects to the requirements of paragraph (a) above, with each entity requesting such agreement and that is supplying such confidential or proprietary information or data to the Contractor under this contract and (2) to supply a copy of such agreement to the Contracting Officer, upon written request.
- (c) This clause shall be included in any subcontract under which there is a requirement or there becomes a requirement that the subcontractor be given access to or be furnished with confidential or proprietary business, technical, or financial information or data.

**H-2: RELEASE OF INFORMATION**

The Contractor shall closely coordinate with the COTR regarding any proposed scientific, technical, or professional publication of the results of the work performed or any data developed under this contract. The Contractor shall provide the COTR an opportunity to review any proposed manuscripts describing, in whole or in part, the results of the work performed or any data developed under this contract at least forty-five (45) days prior to publication. The COTR will review the proposed publication and provide comments. A response shall be provided to the Contractor within forty-five (45) days; otherwise, the Contractor may assume that the COTR has no comments. The Contractor agrees to address any concerns or issues identified by the COTR prior to publication.

**H-3: OPTION TO EXTEND THE TERM OF THE CONTRACT (MAR 2000) FAR 52.217-9**

- (a) The Government may extend the term of this contract by written notice to the Contractor within 30 days of contract expiration; provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least thirty (30) days before the contract expires. The preliminary notice does not commit the Government to an extension.
- (b) If the Government exercises this option, the extended contract shall be considered to include this option clause.
- (c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed twenty-seven (27) months.

**H-4: PROTECTION OF HUMAN SUBJECTS**

- (a) The Contractor agrees that the rights and welfare of human subjects involved in research under this contract shall be protected in accordance with 45 CFR Part 46, as implemented by Department of Homeland Security Management Directive 10300, *PROTECTION OF HUMAN SUBJECTS*, and with the Contractor's current Assurance of Compliance on file with the Department of Health and Human Services. The Contractor further agrees to provide certification to the Contracting Officer at least annually that the Institutional Review Board has reviewed and approved the procedures, which involve human subjects in accordance with 45 CFR Part 46 and the Assurance of Compliance.
- (b) The Contractor shall bear full responsibility for the performance of all work and services involving the use of human subjects under this contract in a proper manner and as safely as is feasible. The parties hereto agree that the Contractor retains the right to control and direct the performance of all work under this contract. Nothing in this contract shall be deemed to constitute the Contractor or a subcontractor, agent or employee of the Contractor, or any other person, organization, institution, or group of any kind whatsoever, as the agent or employee of the Government. The Contractor agrees that it has entered into this contract and will discharge its obligations, duties, and undertakings and the work pursuant thereto, whether requiring professional judgment or otherwise, as an independent contractor without imputing liability on the part of the Government for the acts of the Contractor or its employees.
- (c) If at any time during the performance of this contract, the Contracting Officer determines, in consultation with the Regulatory Compliance Office (RCO) of the Directorate of Science and Technology for the Department of Homeland Security, that the Contractor is not in compliance with any of the requirements and/or standards stated in paragraphs (a) and (b) above, the Contracting Officer may immediately suspend, in whole or in part, work and further payments under this contract until the Contractor corrects the noncompliance. Notice of the suspension may be communicated by telephone and confirmed in writing. If the Contractor fails to complete corrective action within the period of time designated in the Contracting Officer's written notice of suspension, the Contracting Officer may, in

consultation with RCO, terminate this contract in whole or in part, and the Contractor's name may be removed from the list of those contractors with approved Health and Human Services Human Subject Assurances.

**SECTION I - CONTRACT CLAUSES**

**I-1: CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)**

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these URLs:

<http://arsite.hill.af.mil> (FAR Clauses 52.###)

[http://www.dhs.gov/dhspublic/interweb/assetlibrary/DHS\\_HSAR\\_With\\_Notice\\_04-01.pdf](http://www.dhs.gov/dhspublic/interweb/assetlibrary/DHS_HSAR_With_Notice_04-01.pdf) (HSAR Clauses 30##.###)

**I-2: CLAUSES INCORPORATED BY REFERENCE**

The following FAR and HSAR clauses are incorporated by reference into this contract:

52.202-1	Definitions	Jul 2004
52.203-3	Gratuities	Apr 1984
52.203-5	Covenant Against Contingent Fees	Apr 1984
52.203-7	Anti-Kickback Procedures	Jul 1995
52.203-8	Cancellation, Recession and Recovery of Funds for Illegal or Improper Activity	Jan 1997
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity	Jan 1997
52.203-12	Limitation on Payments to Influence Certain Federal Transactions	Jun 2003
52.204-4	Printed or Copied Double Sided on Recycled Paper	Aug 2000
52.204-7	Central Contractor Registration	Oct 2003
52.209-6	Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment	Jan 2005
52.215-2 Alt II	Audit and Records - Negotiation - Alternate II	Jun 1999
52.215-8	Order of Precedence - Uniform Contract Format	Oct 1997
52.215-10	Price Reduction for Defective Cost or Pricing Data	Oct 1997
52.215-12	Subcontractor Cost or Pricing Data	Oct 1997
52.215-14	Integrity of Unit Prices	Oct 1997
52.215-15	Pension Adjustments and Asset Reversions	Oct 2004



52.215-17	Waiver of Facilities Capital Cost of Money	Oct 1997
52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions	Oct 1997
52.215-21	Requirements for Cost or Pricing Data or Information Other Than Cost or Pricing Data – Modifications	Oct 1997
52.216-7	Allowable Cost and Payment (Delete “31.2” and replace with “31.3”)	Dec 2002
52.216-8	Fixed Fee	Mar 1997
52.219-8	Utilization of Small Business Concerns	May 2004
52.219-9	Small Business Subcontracting Plan	Sept 2006
52.219-16	Liquidated Damages – Subcontracting Plan	Jan 1999
52.222-1	Notice to the Government of Labor Disputes	Feb 1997
52.222-2	Payment for Overtime Premiums (a) fill-in: <u>zero (0)</u>	Jul 1990
52.222-3	Convict Labor	Jun 2003
52.222-21	Prohibition of Segregated Facilities	Feb 1999
52.222-26	Equal Opportunity	Apr 2002
52.222-35	Equal Opportunity for Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	Dec 2001
52.222-36	Affirmative Action for Workers with Disabilities	Jun 1998
52.222-37	Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era and Other Eligible Veterans	Dec 2001
52.223-3 Alt I	Hazardous Material Identification and Material Safety Data – Alternate I ( <i>Jul 1995</i> )	Jan 1997,
52.223-6	Drug Free Workplace	May 2001
52.223-7	Notice of Radioactive Materials	Jan 1997
52.223-14	Toxic Chemical Release Reporting	Aug 2003
52.225-13	Restrictions on Certain Foreign Purchases	Mar 2005
52.226-1	Utilization of Indian Organizations and Indian-Owned Economic Enterprises	Jun 2000
52.227-1 Alt I	Authorization and Consent - Alternate I ( <i>Apr 1984</i> )	Jul 1995
52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement	Aug 1996
52.227-11	Patent Rights - Retention by Contractor (Short Form)	Jun 1997
52.227-14/ Alt. IV	Rights in Data – General - Alternate IV	Jun 1987
52.227-16	Additional Data Rights	Jun 1987
52.228-7	Insurance – Liability to Third Persons	Mar 1996
52.230-5	Cost Accounting Standards – Educational Institution	Apr 1998
52.230-6	Administration of Cost Accounting Standards	Nov 1999
52.232-9	Limitation on Withholding of Payments	Apr 1984
52.232-17	Interest	Jun 1996

52.232-22	Limitation of Funds	Apr 1984
52.232-23	Assignment of Claims	Jan 1986
52.232-25	Prompt Payment	Oct 2003
52.232-33	Payment by Electronic Funds Transfer – Central Contractor Registration	Oct 2003
52.233-1	Disputes	Jul 2002
52.233-3 Alt I	Protest After Award – Alternate I ( <i>Jun 1985</i> )	Aug 1996
52.233-4	Applicable Law for Breach of Contract Claim	Oct 2004
52.242-1	Notice of Intent to Disallow Costs	Apr 1984
52.242-3	Penalties for Unallowable Costs	May 2001
52.242-4	Certification of Final Indirect Costs.	Jan 1997
52.242-13	Bankruptcy	Jul 1995
52.243-2 Alt V	Changes – Cost Reimbursement – Alternate V ( <i>Apr 1984</i> )	Aug 1987
52.244-2 Alt II	Subcontracts – Alternate II ( <i>Aug 1998</i> )	Aug 1998
52.244-5	Competition in Subcontracting	Dec 1996
52.244-6	Subcontracts for Commercial Items	Dec 2004
52.245-5 Alt I	Government Property (Cost-Reimbursement, Time-and-Materials, or Labor Hour Contracts) – Alternate I ( <i>Jun 2003</i> )	May 2004
52.246-23	Limitation of Liability	Feb 1997
52.247-1	Commercial Bill of Lading Notations	Apr 1984
52.247-63	Preference for U.S. Flag Air Carriers	Jun 2003
52.249-5	Termination (Cost Reimbursement)	Sep 1996
52.249-14	Excusable Delays	Apr 1984
52.251-1	Government Supply Sources	Apr 1984
52.253-1	Computer Generated Forms	Jan 1991
3052.219-70	Small Business Subcontracting Program Reporting	Jun 2006
3052.245-70	Government Property Records	Jun 2006

**I-3: NOTIFICATION OF OWNERSHIP CHANGES (FAR 52.215-19) (OCT 1997)**

(a) The Contractor shall make the following notifications in writing:

- (1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.
- (2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall:

- (1) Maintain current, accurate, and complete inventory records of assets and their costs;
- (2) Provide the ACO or designated representative ready access to the records upon request;
- (3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and
- (4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

(c) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

**I-4: NOTIFICATION OF EMPLOYEES RIGHTS CONCERNING PAYMENT OF UNION DUES AND FEES (FAR 52.222-39) (DEC 2004)**

(a) *Definition.* As used in this clause—

"United States" means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.

(b) *Except* as provided in paragraph (e) of this clause, during the term of this contract, the Contractor shall post a notice, in the form of a poster, informing employees of their rights concerning union membership and payment of union dues and fees, in conspicuous places in and about all its plants and offices, including all places where notices to employees are customarily posted. The notice shall include the following information (except that the information pertaining to National Labor Relations Board shall not be included in notices posted in the plants or offices of carriers subject to the Railway Labor Act, as amended (45 U.S.C. 151-188)).

**Notice to Employees**

Under Federal law, employees cannot be required to join a union or maintain membership in a union in order to retain their jobs. Under certain conditions, the law permits a union and an employer to enter into a union-security agreement requiring employees to pay uniform periodic dues and initiation fees. However, employees who are not union members can object to the use of their payments for certain purposes and can only be required to pay their share of union costs relating to collective bargaining, contract administration, and grievance adjustment.

If you do not want to pay that portion of dues or fees used to support activities not related to collective bargaining, contract administration, or grievance adjustment, you are entitled to an appropriate reduction in your payment. If you believe that you have been required to pay dues or fees used in part to support activities not related to collective bargaining, contract administration, or grievance adjustment, you may be entitled to a refund and to an appropriate reduction in future payments.

For further information concerning your rights, you may wish to contact the National Labor Relations Board (NLRB) either at one of its Regional offices or at the following address or toll free number:

National Labor Relations Board  
Division of Information  
1099 14th Street, N.W.  
Washington, DC 20570  
1-866-667-6572  
1-866-316-6572 (TTY)

To locate the nearest NLRB office, see NLRB's website at <http://www.nlrb.gov>.

(c) The Contractor shall comply with all provisions of Executive Order 13201 of February 17, 2001, and related implementing regulations at 29 CFR Part 470, and orders of the Secretary of Labor.

(d) In the event that the Contractor does not comply with any of the requirements set forth in paragraphs (b), (c), or (g), the Secretary may direct that this contract be cancelled, terminated, or suspended in whole or in part, and declare the Contractor ineligible for further Government contracts in accordance with procedures at 29 CFR Part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures. Such other sanctions or remedies may be imposed as are provided by 29 CFR Part 470, which implements Executive Order 13201, or as are otherwise provided by law.

(e) The requirement to post the employee notice in paragraph (b) does not apply to—

(1) Contractors and subcontractors that employ fewer than 15 persons;

(2) Contractor establishments or construction work sites where no union has been formally recognized by the Contractor or certified as the exclusive bargaining representative of the Contractor's employees;

(3) Contractor establishments or construction work sites located in a jurisdiction named in the definition of the United States in which the law of that jurisdiction forbids enforcement of union-security agreements;

(4) Contractor facilities where upon the written request of the Contractor, the Department of Labor Deputy Assistant Secretary for Labor-Management Programs has waived the posting requirements with respect to any of the Contractor's facilities if the Deputy Assistant Secretary finds that the Contractor has demonstrated that—

(i) The facility is in all respects separate and distinct from activities of the Contractor related to the performance of a contract; and

(ii) Such a waiver will not interfere with or impede the effectuation of the Executive order; or

(5) Work outside the United States that does not involve the recruitment or employment of workers within the United States.

(f) The Department of Labor publishes the official employee notice in two variations; one for contractors covered by the Railway Labor Act and a second for all other contractors. The Contractor shall—

(1) Obtain the required employee notice poster from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW, Room N-5605, Washington, DC 20210, or from any field office of the Department's Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;

(2) Download a copy of the poster from the Office of Labor-Management Standards website at <http://www.olms.dol.gov>; or

(3) Reproduce and use exact duplicate copies of the Department of Labor's official poster.

(g) The Contractor shall include the substance of this clause in every subcontract or purchase order that exceeds the simplified acquisition threshold, entered into in connection with this contract, unless exempted by the Department of Labor Deputy Assistant Secretary for Labor-Management Programs on account of special circumstances in the national interest under authority of 29 CFR 470.3(c). For indefinite quantity subcontracts, the Contractor shall include the substance of this clause if the value of orders in any calendar year of the subcontract is expected to exceed the simplified acquisition threshold. Pursuant to 29 CFR Part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures, the Secretary of Labor may direct the Contractor to take such action in the enforcement of these regulations, including the imposition of sanctions for noncompliance with respect to any such subcontract or purchase order. If the Contractor becomes involved in litigation with a subcontractor or vendor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

**I-5: NOTIFICATION OF CHANGES (FAR 52.243-7) (APR 1984)**

(a) *Definitions.* "Contracting Officer," as used in this clause, does not include any representative of the Contracting Officer.

"Specifically Authorized Representative (SAR)," as used in this clause, means any person the Contracting Officer has so designated by written notice (a copy of which shall be provided to the Contractor) which shall refer to this paragraph and shall be issued to the designated representative before the SAR exercises such authority.

(b) *Notice.* The primary purpose of this clause is to obtain prompt reporting of Government conduct that the Contractor considers to constitute a change to this contract. Except for changes identified as such in writing and signed by the Contracting Officer, the Contractor shall notify the Administrative Contracting Officer in writing promptly, within fifteen (15) calendar days from the date that the Contractor identifies any Government conduct (including actions, inactions, and written or oral communications) that the Contractor regards as a change to the contract terms and conditions. On the basis of the most accurate information available to the Contractor, the notice shall state—

- (1) The date, nature, and circumstances of the conduct regarded as a change;
- (2) The name, function, and activity of each Government individual and Contractor official or employee involved in or knowledgeable about such conduct;
- (3) The identification of any documents and the substance of any oral communication involved in such conduct;
- (4) In the instance of alleged acceleration of scheduled performance or delivery, the basis upon which it arose;
- (5) The particular elements of contract performance for which the Contractor may seek an equitable adjustment under this clause, including—
  - (i) What contract line items have been or may be affected by the alleged change;
  - (ii) What labor or materials or both have been or may be added, deleted, or wasted by the alleged change;
  - (iii) To the extent practicable, what delay and disruption in the manner and sequence of performance and effect on continued performance have been or may be caused by the alleged change;
  - (iv) What adjustments to contract price, delivery schedule, and other provisions affected by the alleged change are estimated; and
- (6) The Contractor's estimate of the time by which the Government must respond to the Contractor's notice to minimize cost, delay or disruption of performance.

(c) *Continued performance.* Following submission of the notice required by paragraph (b) of this clause, the Contractor shall diligently continue performance of this contract to the maximum extent possible in accordance with its terms and conditions as construed by the Contractor, unless the notice reports a direction of the Contracting Officer or a communication from a SAR of the Contracting Officer, in either of which events the Contractor shall continue performance; provided, however, that if the Contractor regards the direction or communication as a change as described in paragraph (b) of this clause, notice shall be given in the manner provided. All directions, communications, interpretations, orders and similar actions of the SAR shall be reduced to writing promptly and copies furnished to

the Contractor and to the Contracting Officer. The Contracting Officer shall promptly countermand any action which exceeds the authority of the SAR.

(d) *Government response.* The Contracting Officer shall promptly, within thirty (30) calendar days after receipt of notice, respond to the notice in writing. In responding, the Contracting Officer shall either—

- (1) Confirm that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance;
- (2) Countermand any communication regarded as a change;
- (3) Deny that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance; or
- (4) In the event the Contractor's notice information is inadequate to make a decision under paragraphs (d) (1), (2), or (3) of this clause, advise the Contractor what additional information is required, and establish the date by which it should be furnished and the date thereafter by which the Government will respond.

(e) *Equitable adjustments.*

(1) If the Contracting Officer confirms that Government conduct effected a change as alleged by the Contractor, and the conduct causes an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether changed or not changed by such conduct, an equitable adjustment shall be made—

- (i) In the contract price or delivery schedule or both; and
- (ii) In such other provisions of the contract as may be affected.

(2) The contract shall be modified in writing accordingly. In the case of drawings, designs or specifications which are defective and for which the Government is responsible, the equitable adjustment shall include the cost and time extension for delay reasonably incurred by the Contractor in attempting to comply with the defective drawings, designs or specifications before the Contractor identified, or reasonably should have identified, such defect. When the cost of property made obsolete or excess as a result of a change confirmed by the Contracting Officer under this clause is included in the equitable adjustment, the Contracting Officer shall have the right to prescribe the manner of disposition of the property. The equitable adjustment shall not include increased costs or time extensions for delay resulting from the Contractor's failure to provide notice or to continue performance as provided, respectively, in paragraphs (b) and (c) of this clause.

**I-6: PROHIBITION ON CONTRACTS WITH CORPORATE EXPATRIATES (HSAR 3052.209-70)  
(DEC 2003)**

(a) *Prohibitions.*

Section 835 of Public Law 107-296, prohibits the Department of Homeland Security from entering into any contract with a foreign incorporated entity after November 25, 2002, which is treated as an inverted domestic corporation as defined in this clause. The Secretary shall waive the prohibition with respect to any specific contract if the Secretary determines that the waiver is required in the interest of homeland security, or to prevent the loss of any jobs in

the United States or prevent the Government from incurring any additional costs that otherwise would not occur.

(b) Definitions. As used in this clause:

“Expanded Affiliated Group” means an affiliated group as defined in section 1504(a) of the Internal Revenue Code of 1986 (without regard to section 1504(b) of such Code), except that section 1504 of such Code shall be applied by substituting ‘more than 50 percent’ for ‘at least 80 percent’ each place it appears. “Foreign Incorporated Entity” means any entity which is, or but for subsection (b) of Section 835 of the Homeland Security Act, Public Law 107-296, would be, treated as a foreign corporation for purposes of the Internal Revenue Code of 1986.

“Inverted Domestic Corporation.” A foreign incorporated entity shall be treated as an inverted domestic corporation if, pursuant to a plan (or a series of related transactions)—

- (1) The entity completes after November 25, 2002, the direct or indirect acquisition of substantially all of the properties held directly or indirectly by a domestic corporation or substantially all of the properties constituting a trade or business of a domestic partnership;
  - (2) After the acquisition at least 80 percent of the stock (by vote or value) of the entity is held—
    - (i) In the case of an acquisition with respect to a domestic corporation, by former shareholders of the domestic corporation by reason of holding stock in the domestic corporation; or
    - (ii) In the case of an acquisition with respect to a domestic partnership, by former partners of the domestic partnership by reason of holding a capital or profits interest in the domestic partnership; and
  - (3) The expanded affiliated group which after the acquisition includes the entity does not have substantial business activities in the foreign country in which or under the law of which the entity is created or organized when compared to the total business activities of such expanded affiliated group. “Person”, “domestic”, and “foreign” have the meanings given such terms by paragraphs (1), (4), and (5) of section 7701(a) of the Internal Revenue Code of 1986, respectively.
- (c) Special rules. The following definitions and special rules shall apply when determining whether a foreign incorporated entity should be treated as an inverted domestic corporation.
- (1) Certain Stock Disregarded. For the purpose of treating a foreign incorporated entity as an inverted domestic corporation these shall not be taken into account in determining ownership:
    - (i) stock held by members of the expanded affiliated group which includes the foreign incorporated entity; or
    - (ii) stock of such entity which is sold in a public offering related to the acquisition described in subsection (b)(1) of Section 835 of the Homeland Security Act, Public Law 107-296.
  - (2) Plan Deemed In Certain Cases. If a foreign incorporated entity acquires directly or indirectly substantially all of the properties of a domestic corporation or partnership during the 4-year period beginning on the date which is after the date of enactment of this Act and which is 2 years before the ownership requirements of subsection (b)(2) are met, such actions shall be treated as pursuant to a plan.



- (3) **Certain Transfers Disregarded.** The transfer of properties or liabilities (including by contribution or distribution) shall be disregarded if such transfers are part of a plan a principal purpose of which is to avoid the purposes of this section.
- (d) **Special Rule for Related Partnerships.**  
For purposes of applying Section 835(b) of Public Law 107-296 to the acquisition of a domestic partnership, except as provided in regulations, all domestic partnerships which are under common control (within the meaning of section 482 of the Internal Revenue Code of 1986) shall be treated as a partnership.
- (e) **Treatment of Certain Rights.**
  - (1) Certain rights shall be treated as stocks to the extent necessary to reflect the present value of all equitable interests incident to the transaction, as follows:
    - (i) warrants;
    - (ii) options;
    - (iii) contracts to acquire stock;
    - (iv) convertible debt instruments; and
    - (v) others similar interests.
  - (2) Rights labeled as stocks shall not be treated as stocks whenever it is deemed appropriate to do so to reflect the present value of the transaction or to disregard transactions whose recognition would defeat the purpose of Section 835.
- (f) **Disclosure.**  
By signing and submitting its offer, an Offeror under this solicitation represents that it not a foreign incorporated entity that should be treated as an inverted domestic corporation pursuant to the criteria of Section 835 of the Homeland Security Act, Public Law 107-296 of November 25, 2002.
- (g) If a waiver has been granted, a copy of the approved waiver shall be attached to the bid or proposal.

**I-7: INSURANCE (HSAR 3052.228-70) (DEC 2003)**

In accordance with the clause entitled "Insurance - Work on a Government Installation" [or Insurance - Liability to Third Persons] in Section I, insurance of the following kinds and minimum amounts shall be provided and maintained during the period of performance of this contract:

- (a) **Worker's compensation and employer's liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(a).
- (b) **General liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(b).
- (c) **Automobile liability.** The contractor shall, as a minimum, meet the requirements specified at (FAR) 48 CFR 28.307-2(c).

**I-8: PRECONTRACT COSTS (HSAR 3052.231-70) (DEC 2003)**

The Contractor shall be entitled to reimbursement for pre-contract costs incurred on or after 10 July 2006 in an amount not to exceed \$500,000 that, if incurred after this contract had been entered into, would have been reimbursable under this contract.

**SECTION J - ATTACHMENTS**

RESERVED

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**SECTION K - REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF BIDDERS**

**K-1: Annual Representations and Certifications. (JAN 2006) 52.204-8**

(a)(1) The North American Industry Classification System (NAICS) code for this acquisition is: 611310.

(2) The small business size standard is \$6.5M.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b)(1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (c) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (c) of this provision instead of completing the corresponding individual representations and certifications in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

(i) Paragraph (c) applies.

(ii) Paragraph (c) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at <http://orca.bpn.gov>. After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR 4.1201); except for the changes identified below [*offeror to insert changes, identifying change by clause number, title, date*]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause	Title	Date	Change
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Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.

(End of Provision)

**K-2: Place of Performance. (OCT 1997) 52.215-6**

(a) The offeror or respondent, in the performance of any contract resulting from this solicitation, intends,  does not intend [*check applicable block*] to use one or more plants or facilities located at a different address from the address of the offeror or respondent as indicated in this proposal or response to request for information.

(b) If the offeror or respondent checks "intends" in paragraph (a) of this provision, it shall insert in the following spaces the required information:

Place of Performance (Street Address, City, State, County, ZIP Code)      Name and Address of Owner and Operator of the Plant or Facility if Other than Offeror or Respondent

\_\_\_\_\_

(End of provision)

**K-3: Certification of Toxic Chemical Release Reporting. (AUG 2003) 52.223-13**

(a) Executive Order 13148, of April 21, 2000, Greening the Government through Leadership in Environmental Management, requires submission of this certification as a prerequisite for contract award.

(b) By signing this offer, the offeror certifies that -

(1) As the owner or operator of facilities that will be used in the performance of this contract that are subject to the filing and reporting requirements described in section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) (42 U.S.C. 11023) and section 6607 of the Pollution Prevention Act of 1990 (PPA) (42 U.S.C. 13106), the offeror will file and continue to file for such facilities for the life of the contract the Toxic Chemical Release Inventory Form (Form R) as described in sections 313(a) and (g) of EPCRA and section 6607 of PPA; or

(2) None of its owned or operated facilities to be used in the performance of this contract is subject to the Form R filing and reporting requirements because each such facility is exempt for at least one of the following reasons: [*Check each block that is applicable.*]

(i) The facility does not manufacture, process, or otherwise use any toxic chemicals listed in 40 CFR 372.65;

(ii) The facility does not have 10 or more full-time employees as specified in section 313(b)(1)(A) of EPCRA, 42 U.S.C. 11023(b)(1)(A);

(iii) The facility does not meet the reporting thresholds of toxic chemicals established under section 313(f) of EPCRA, 42 U.S.C. 11023(f) (including the alternate thresholds at 40 CFR 372.27, provided an appropriate certification form has been filed with EPA);

(iv) The facility does not fall within the following Standard Industrial Classification (SIC) codes or their corresponding North American Industry Classification System sectors:

(A) Major group code 10 (except 1011, 1081, and 1094.

(B) Major group code 12 (except 1241).

(C) Major group codes 20 through 39.

(D) Industry code 4911, 4931, or 4939 (limited to facilities that combust coal and/or oil for the purpose of generating power for distribution in commerce).

(E) Industry code 4953 (limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C (42 U.S.C. 6921, et seq.), 5169, 5171, or 7389 (limited to facilities primarily engaged in solvent recovery services on a contract or fee basis); or

[ ] (v) The facility is not located in the United States or its outlying areas.

(End of provision)

**K-4: Cost Accounting Standards Notices and Certification. (JUN 2000) 52.230-1**

Note: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III.

Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

**I. Disclosure Statement - Cost Accounting Practices and Certification**

(a) Any contract in excess of \$500,000 resulting from this solicitation will be subject to the requirements of the Cost Accounting Standards Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

Caution: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

(1) *Certificate of Concurrent Submission of Disclosure Statement.* The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows:

(i) Original and one copy to the cognizant Administrative Contracting Officer (ACO) or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable; and

(ii) One copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

Date of Disclosure Statement: *[Name and Address of Cognizant ACO or Federal Official Where Filed:]*

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

(2) *Certificate of Previously Submitted Disclosure Statement.* The offeror hereby certifies that the required Disclosure Statement was filed as follows:

Date of Disclosure Statement:

Name and Address of Cognizant ACO or Federal Official Where Filed:

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

(3) *Certificate of Monetary Exemption.* The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling \$50 million or more in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

(4) *Certificate of Interim Exemption.* The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

Caution: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$50 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before

expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II. Cost Accounting Standards - Eligibility for Modified Contract Coverage

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$50 million in awards of CAS-covered prime contracts and subcontracts. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

Caution: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$50 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$50 million or more.

III. Additional Cost Accounting Standards Applicable to Existing Contracts

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

yes  no

(End of provision)

**K-5: Proposal Disclosure – Cost Accounting Practice Changes. (APR 2005) 52.230-7**

The offeror shall check "yes" below if the contract award will result in a required or unilateral change in cost accounting practice, including unilateral changes requested to be desirable changes.

Yes  
 No

If the offeror checked "Yes" above, the offeror shall—

- (1) Prepare the price proposal in response to the solicitation using the changed practice for the period of performance for which the practice will be used; and
- (2) Submit a description of the changed cost accounting practice to the Contracting Officer and the Cognizant Federal Agency Official as pricing support for the proposal.

(End of provision)

BRONDA BRADY

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGES 1 9
2. AMENDMENT/MODIFICATION NO. P00001	3. EFFECTIVE DATE 07/10/2006	4. REQUISITION/PURCHASE REQ. NO. RSEN-07-00073	5. PROJECT NO. (if applicable)
6. ISSUED BY U.S. Dept. of Homeland Security Office of Procurement Operations S&T Acquisition Branch 245 Murray Lane, SW Building 410 Washington DC 20528	CODE DHS/OPO/S&T/S&T	7. ADMINISTERED BY (if other than item 6) OPO S&T Acquisition Branch	CODE DHS/OPO/S&T/S&T
8. NAME AND ADDRESS OF CONTRACTOR (Firm, street, county, State and ZIP Code) NORTHEASTERN UNIVERSITY 360 HUNTINGTON AVENUE 251 RI BOSTON MA 021155000		9A. AMENDMENT OF SOLICITATION NO.	9B. DATED (SEE ITEM 11)
CODE 0014236310000 FACILITY CODE		X 10A. MODIFICATION OF CONTRACT/ORDER NO. HSKQDC-07-C-00016	10B. DATED (SEE ITEM 11) 12/06/2006

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers  is extended  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) by e-mailing items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) by acknowledging receipt of this amendment on each copy of the offer submitted; or (c) by separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or MMW, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)  
See Schedule Net Increase: [REDACTED]

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACT/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: 43.103(a) (3)
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not  is required to sign this agreement and return \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including optional contract subject matter where feasible)

Tax ID Number: 04-1679980  
DUNS Number: 001423631+0000  
Division: Explosives  
PPA: Explosives  
Thrust Area: Explosives Detection  
Program: Checkpoint Program  
Project: Next Generation Passenger Checkpoint Project  
Performer: Northeast University

Description: The purpose of this effort is to exercise the second increment of Phase I of the Northeastern Award under BAA05-03 Prototypes and Technologies for Improvised Explosive Continued ...

Except as provided herein, all terms and conditions of the agreement referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) [REDACTED]		15B. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Douglas S. Roark	
15C. CONTRACT OFFICER'S [REDACTED]	15D. DATE SIGNED 5-17-07	15E. UNITED STATES OF AMERICA [REDACTED]	15F. DATE SIGNED 5-17-07



CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
HSHQDC-07-C-00016/P00001

PAGE OF  
2 9

NAME OF OFFEROR OR CONTRACTOR  
NORTHEASTERN UNIVERSITY

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Device Detection. Discount Terms:     Net 30 FOB: Destination Period of Performance: 07/10/2006 to 04/07/2008</p> <p>Change Item 0001 to read as follows (amount shown is the obligated amount):</p>				
0001	<p>PTIEDD - Phase I: BomDetec Project Including Data Deliverables Fully Funded Obligation Amount [REDACTED] Product/Service Code: R425 Product/Service Description: ENGINEERING &amp; TECHNICAL SERVICES</p> <p>Delivery: 04/09/2007 Delivery Location Code: DHS Department of Homeland Security 245 Murray Lane Bldg. 410 Washington DC 20528</p> <p>Accounting Info: NONE000-000-RX-06-10-DC-005-06-01-0000-00-00-00-00 -GE-DL-25-50-00000 Funded: \$0.00</p> <p>Accounting Info: NONE000-000-5X-06-10-DC-005-06-01-0000-00-00-00-00 -GE-DL-25-50-00000 Funded: \$0.00</p> <p>Accounting Info: NONE000-000-5X-06-20-DC-005-06-01-0000-00-00-00-00 -GE-DL-25-50-00000 Funded: \$0.00</p> <p>CLIN 0001 Total Estimated Cost: [REDACTED] CLIN 0001 Total Fixed Fee: [REDACTED] CLIN 0001 Total CPFF: [REDACTED]</p> <p>CLIN 0001 is incrementally funded in the amount of \$1,305,181. This amount appears in Block 15G of the SF26 as the amount obligated with this action.</p> <p>Change Item 0002 to read as follows (amount shown is the obligated amount):</p>	1	LO	[REDACTED]	0.00
0002	<p>OPTION 1: PTIEDD - Phase II: BomDetec Project Continued ...</p>	1	LO	[REDACTED]	0.00

NAME OF OFFEROR OR CONTRACTOR  
**NORTHEASTERN UNIVERSITY**

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Including Data Deliverables  Amount: \$1,697,743.00 (Option Line Item)  04/09/2007  Product/Service Code: R425  Product/Service Description: ENGINEERING &amp; TECHNICAL SERVICES</p> <p>Delivery: 365 Days After Award  Delivery Location Code: DHS  Department of Homeland Security  245 Murray Lane  Bldg. 410  Washington DC 20528  Accounting Info:  Funded: \$0.00</p> <p>CLIN 0002 Total Estimated Cost: \$1,564,740  CLIN 0002 Total Fixed Fee: \$133,003  CLIN 0002 Total CPFF: \$1,697,743</p> <p>Change Item 0003 to read as follows (amount shown is the obligated amount):</p>				
0003	<p>OPTION 2: PTIEDD - Phase III: BomDetec Project  Including Data Deliverables  Amount: ██████████ (Option Line Item)  04/06/2008  Product/Service Code: R425  Product/Service Description: ENGINEERING &amp; TECHNICAL SERVICES</p> <p>Delivery: 180 Days After Award  Delivery Location Code: DHS  Department of Homeland Security  245 Murray Lane  Bldg. 410  Washington DC 20528  Accounting Info:  Funded: \$0.00</p> <p>CLIN 0003 Total Estimated Cost: ██████████  CLIN 0003 Total Fixed Fee: ██████████  CLIN 0003 Total CPFF: ██████████</p> <p>If and to the extent that all options are exercised:</p> <p>Add Item 0004 as follows:</p> <p>Continued ...</p>	1	LO	██████████	0.00

NAME OF OFFEROR OR CONTRACTOR  
NORTHEASTERN UNIVERSITY

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0004	<p>Funding for the second increment for Phase I</p> <p>Obligated Amount: ██████████</p> <p>Product/Service Code: R425</p> <p>Product/Service Description: ENGINEERING &amp; TECHNICAL SERVICES</p> <p>Delivery: 04/09/2008</p> <p>Delivery Location Code: S&amp;T MURRAY LANE</p> <p>DHS S&amp;T</p> <p>245 Murray Lane</p> <p>Building 410</p> <p>Washington DC 20528</p> <p>Amount: ██████████</p> <p>Accounting Info:</p> <p>NONE000-000-7X-33-02-03-0001-01-00-0000-00-00-00-0</p> <p>0-GE-AP-25-50-000000</p> <p>Funded: ██████████</p>				██████████

# Statement of Work for Northeastern University

## U.S. Department of Homeland Security Science and Technology Directorate Explosives Division

RSEN-07-00073

### I. Background

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge technologies and scientific talent in its quest to make America safer. The DHS Directorate of Science and Technology (S&T) is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and leveraging these existing resources into technological tools to help protect the homeland. The Suicide Borne IED program supports this effort by focusing on protecting the homeland from the threat of explosives through detection. Solutions targeted are either near-term or more in-depth for suicide bomb and/or leave-behind bomb detection.

### II. Scope of Work

The purpose of this SOW is to exercise the second increment for Phase I of the Northeastern Award under BAA05-03 Prototypes and Technologies for Improvised Explosives Device Detection. The remaining [REDACTED] will be funded in FY07. The core deliverable for the remainder of this Phase will be a summary report to include potential technological issues related to the integration of multiple technologies.

	Item	Time After Award
1.	Monthly Technical Progress and Cost Reports	Monthly
2.	Report on Laboratory and Field Evaluation Criteria	Thirty (30) Weeks
3.	Report on Laboratory and Field Evaluation Results for each sensor	Thirty-four (34) Weeks
4.	Independent Review Board Report on the use of Human Test Subjects	Thirty (30) days prior to testing
5.	System Configuration concept	Thirty-six (36) Weeks
6.	Preliminary Design Review (PDR) with Detailed Summary Report	Thirty-six (36) Weeks
7.	Final Report Phase I	Nine (9) Months

Northeastern University has completed items 2.1, 2.2, 4.1 and 4.3 as numbered in the Contract Section C1: Statement of work and will perform the remaining tasks described below with the additional [REDACTED].

- 1) Intelligent Video:
  - a. Test and analyze the performance of the Intelligent Video
  - b. Test the software System architecture, and integration
  - c. Test and evaluate visualization front end, policy engine
  - d. Develop system configuration Concept (w/team)
  - e. Write Preliminary Design Review (Intelligent Video, software integration) (PDT)
  - f. Write Phase I Final Report (Intelligent Video, and software integration)
  
- 2) Radar:
  - a. Design experiments to validate the algorithms
  - b. Investigate clutter reduction approaches
  - c. Develop system configuration Concept (w/team)
  - d. Write Preliminary Design Review (radar sensor) (PDR)
  - e. Write Phase I Final Report (radar sensor)
  
- 3) X-Ray:
  - a. Develop System Configuration Concept (w/team)
  - b. Write Preliminary Design Review (X-ray sensor, hardware integration) (PDR)
  - c. Write Phase I Final Report (X-ray sensor, hardware integration)
  
- 4) Terahertz:
  - a. Develop system Configuration Concept
  - b. Write Preliminary Design review (THz sensor) (PDR)
  - c. Write Phase I Final Report (THz sensor)
  
- 5) Suicide bomber Test subject:
  
- 6) Hardware and software Integration:
  
- 7) Program Management:
  - a. System Configuration Concept
  - b. Preliminary Design Review (PDR)
  - c. Phase I Final Report

### III. Other Contract Details

1. **Period of Performance.** The period of performance for this SOW will continue from the contract award date to 9 April 2007. DHS may give subsequent extension notices to Northeastern University in writing for further performance in accordance with the terms of this SOW.

**Travel.** The DHS Explosives Division Director and the DHS S&T Special Assistant for International Policy must approve all foreign travel in advance.

**2. DHS-Furnished Information.**

- a. DHS will provide certain DHS information, materials, and forms unique to DHS to Northeastern University to support certain tasks under this SOW.
- b. The DHS S&T Technical Representative identified in this SOW will be the point of contact (POC) for identification of any required information to be supplied by DHS.
- c. Northeastern University will prepare any documentation according to the guidelines provided by DHS.

**3. DHS-Furnished Facilities, Supplies, and Services.** If work at DHS-provided facilities is necessary for the services being performed under this SOW, such facilities will be provided at S&T's office in Washington, D.C. Parking facilities are not provided, however several commercial parking facilities are located near S&T's office. Basic facilities such as work space and associated operating requirements (e.g., phones, desks, utilities, desktop computers, and consumable and general purpose office supplies) will be provided to Northeastern University personnel working in S&T's office.

**4. Place of Performance.** Northeastern University will perform the work under this SOW at Northeastern University or the facility of one of the subcontractors.

**5. DHS-Furnished Property.** DHS property will not be provided to Northeastern University unless otherwise agreed in a task order issued under this SOW. In such instances, DHS will maintain property records.

Before purchasing any individual item equal to or exceeding \$50,000 that is required to support technical tasks performed pursuant to this SOW, Northeastern University shall obtain the DHS S&T Technical Representative's prior written consent. The DHS S&T Technical Representative may lower or raise the aforementioned \$50,000 threshold at his/her discretion and on written notice to Northeastern University. If the DHS S&T Technical Representative consents to such purchase, such item shall become the property of DHS. Northeastern University will maintain any such items according to currently existing property accountability procedures. The DHS S&T Technical Representative will determine the final disposition of any such items.

**6. Deliverables.** Northeastern University will provide all deliverables identified in this SOW directly to the DHS S&T Technical Representative with a copy of the transmittal letter to the Contracting Officer.

**7. Program Status Report.** Northeastern University will deliver a monthly program status report to the DHS S&T Technical Representative and DHS S&T Resource Manager containing metrics pertaining to financial, schedule, and scope information, risk information, and performance assessment information of all work performed hereunder.

8. **Cost Summary.** DHS will provide funding to Northeastern University in accordance with DHS's appropriations and available funds pursuant to the allocation outlined below:

<b>Budget Summary*</b>						
<b>Task</b>	<b>Labor</b>	<b>Materials and Supplies</b>	<b>Capital Equipment</b>	<b>Travel</b>	<b>Other Direct Costs</b>	<b>Total</b>
<b>Complete Phase I</b>						
<b>Totals</b>						

*\*Figures extracted from NRL's Phase II Proposal Cost Summary*

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 Northeastern University as to which work will be conducted in a classified manner and at which classification level. If such DHS-guidance conflicts with applicable DOE guidelines, Northeastern University will adhere to the applicable DOE guidelines. Northeastern University will also adhere to other applicable Government orders, guides, and directives pertaining to classified or confidential work. This SOW may require access to information at the FOUO level.
- c. The Contractor shall closely coordinate with the COTR regarding any proposed scientific, technical or professional publication of the results of the work performed or any data developed under this contract. The Contractor shall provide the COTR an opportunity to review any proposed manuscripts describing, in whole or in part, the results of the work performed or any data developed under this contract at least 45 days prior to publication. The COTR will review the proposed publication and provide comments. A response shall be provided to the Contractor within 45 days; otherwise, the Contractor may assume that the COTR has no comments. The Contractor agrees to address any concerns or issues identified by the COTR prior to publication.

.....

#### **IV. Points of Contact**

Northeastern University Points of Contact (POCs) are as follows:

- **Technical POC(s) – John Beatty**  
Northeastern University  
360 Huntington Avenue  
251 RI  
Boston, MA 02115-5000  
[REDACTED]

- **Financial POC(s) – Paul Powell**  
Northeastern University  
360 Huntington Avenue  
251 RI  
Boston, MA 02115-5000  
[REDACTED]

The DHS POCs are as follows:

- **DHS S&T Technical Representative – Mike Shepard**  
Department of Homeland Security  
Science and Technology  
Directorate/Explosives Division, Mike Shepard  
Washington, DC 20528  
[REDACTED]

- **Resource Manager – Shaun MacKeever**  
Contractor in support of the  
Department of Homeland Security  
Science and Technology Directorate/Explosives Division,  
Washington, DC 20528  
[REDACTED]



AMENDMENT OF SOLICITATION/ MODIFICATION OF CONTRACT		1. CONTRACT ID#	PAGE OF PAGES
2. AMENDMENT/MODIFICATION NO. P00062	3. EFFECTIVE DATE 07/02/2008	4. REQUISITION/PURCHASE REG. NO. RSEN-08-00093	5. PROJECT NO. (if applicable)
6. ISSUED BY U.S. Dept. of Homeland Security Office of Procurement Operations S&T Acquisition Branch 245 Murray Lane, SW Building 410 Washington DC 20528	CODE DRS/OPO/S&T/S&T	7. ADMINISTERED BY (if other than item 6) OPO S&T Acquisition Branch	CODE DRS/OPO/S&T/S&T
8. NAME AND ADDRESS OF CONTRACTOR (inc. street, county, State and ZIP Code) NORTHEASTERN UNIVERSITY 360 HUNTINGTON AVENUE 251 RI BOSTON MA 021155000		(b) 9A. AMENDMENT OF SOLICITATION NO.	9B. DATED (SEE ITEM 11)
CODE 0014236310000 FACILITY CODE		X 10A. MODIFICATION OF CONTRACT/ORDER NO. HSHQDC-07-C-00016	10B. DATED (SEE ITEM 11) 12/06/2006

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of offers  is extended,  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 9 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of the amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)  
See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation code, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: 43.103 (a) (3)
	D. OTHER (Specify type of modification and authority)

8. IMPORTANT: Contractor  If not,  is required to sign this document and return 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  
DUNS Number: 001423631+0000  
Division: Explosives  
PPA: Explosives  
Thrust Area: Explosives Detection  
Program: Checkpoint Program  
Project: Next Generation Passenger Checkpoint Project  
Performer: Northeastern University

The purpose of this modification is to extend the Period of Performance through 10/31/2008 at no cost to the Government and include revised Statement of Work with updated delivery date for Final Report Phase I. All other terms and conditions remain Continued ...

Except as provided herein, all terms and conditions of the document referenced in item 5A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Contractor) Maureen A. Joyce Director, Div. of Sponsored	15B. DATE SIGNED 7/24/08	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Aaron H. Ford	16B. DATE SIGNED 8/5/08
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<b>CONTINUATION SHEET</b>	REFERENCE	OF DOCUMENT BEING CONTINUED	PAGE	OF
	HSHQDC-07-C-00016/P00002		2	8

NAME OF OFFEROR OR CONTRACTOR  
NORTHEASTERN UNIVERSITY

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	unchanged and in full force and effect. Period of Performance: 07/10/2006 to 10/31/2008				

# Statement of Work for Northeastern University

## U.S. Department of Homeland Security Science and Technology Directorate Explosives Division

PR# RSEN-08-00093

### I. Background

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge technologies and scientific talent in its quest to make America safer. The DHS Directorate of Science and Technology (S&T) is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and leveraging these existing resources into technological tools to help protect the homeland. The Suicide Borne IED program supports this effort by focusing on protecting the homeland from the threat of explosives through detection. Solutions targeted are either near-term or more in-depth for suicide bomb and/or leave-behind bomb detection.

### II. Scope of Work

The purpose of this SOW is to extend the period of performance, at no cost to the government, to allow time to complete originally contracted efforts. The core deliverable for this modification will be -the Phase I final report, including a discussion of potential technological issues related to the integration of multiple technologies. Recent results from this program are significantly more complex than originally thought. Further development of the wide aperture antenna array concept, developed earlier in this phase, is needed to clarify the performance of radar in this multi-sensor system. Supporting tasks are highlighted below under "2. Radar". These tasks fall within the scope of the original contract.

	<b>Item</b>	<b>Time After Award</b>
1.	Monthly Technical Progress and Cost Reports	Monthly
2.	Report on Laboratory and Field Evaluation Criteria	Thirty (30) Weeks
3.	Report on Laboratory and Field Evaluation Results for each sensor	Thirty-four (34) Weeks
4.	Independent Review Board Report on the use of Human Test Subjects	Thirty (30) days prior to testing
5.	System Configuration concept	Thirty-six (36) Weeks
6.	Preliminary Design Review (PDR) with Detailed Summary Report	Thirty-six (36) Weeks
7.	Final Report Phase I	October 31, 2008

Northeastern University has completed items 2.1, 2.2, 4.1 and 4.3 as numbered in the Contract Section C1: Statement of work and will perform the remaining tasks described below with the additional [REDACTED]

- 1) Intelligent Video:
  - a. Test and analyze the performance of the Intelligent Video
  - b. Test the software System architecture, and integration
  - c. Test and evaluate visualization front end, policy engine
  - d. Develop system configuration Concept (w/team)
  - e. Write Preliminary Design Review (Intelligent Video, software integration) (PDT)
  - f. Write Phase I Final Report (Intelligent Video, and software integration)
  
- 2) Radar:
  - a. Design experiments to validate the algorithms
  - b. Investigate clutter reduction approaches
  - c. Develop system configuration Concept (w/team)
  - d. Write Preliminary Design Review (radar sensor) (PDR)
  - e. Based on the existing wide aperture antenna array, establish specifications and design a single multi-monostatic mm-wave element of the full array.
  - f. Design and fabricate or purchase a standard gain feed and a reflector antenna for radar.
  - g. Build the radar element by combining source, antennas, and drive electronics.
  - h. Fabricate an adjustable support structure for mounting and repositioning the single element to simulate a full array of stationary elements.
  - i. Test the array antenna mm-wave radar element indoors in a large W-band rated anechoic chamber. Compare with modeled results.
  - j. Write Phase I Final Report (radar sensor)
  
- 3) X-Ray:
  - a. Develop System Configuration Concept (w/team)
  - b. Write Preliminary Design Review (X-ray sensor, hardware integration) (PDR)
  - c. Write Phase I Pinal Report (X-ray sensor, hardware integration)
  
- 4) Terahertz:
  - a. Develop system Configuration Concept
  - b. Write Preliminary Design review (THz sensor) (PDR)
  - c. Write Phase I Final Report (THz sensor)
  
- 5) Suicide bomber Test subject:
  
- 6) Hardware and software Integration:
  
- 7) Program Management:
  - a. System Configuration Concept
  - b. Preliminary Design Review (PDR)
  - c. Phase I Final Report

### **III. Other Contract Details**

1. **Period of Performance.** The period of performance for this SOW will continue from the contract award date to 9 April 2008 to October 31, 2008. DHS may give subsequent extension notices to Northeastern University in writing for further performance in accordance with the terms of this SOW.
2. **Travel.** Travel may be required in the performance of the tasks described herein. S&T anticipates that travel will be limited to the continental United States. The DHS S&T Technical Representative and the DHS S&T Special Assistant for International Policy must approve all foreign travel in advance. Travel Costs incurred in association with the execution of the tasks described in this SOW will be reimbursed in accordance with the travel reimbursement policy set forth in the prime contract between DHS and Northeastern University for research, testing, evaluation, and/or development activities.

3. **DHS-Furnished Information.**

DHS will provide certain DHS information, materials, and forms unique to DHS to Northeastern University to support certain tasks under this SOW.

The DHS S&T Technical Representative identified in this SOW will be the point of contact (POC) for identification of any required information to be supplied by DHS.

Northeastern University will prepare any documentation according to the guidelines provided by DHS.

4. **DHS-Furnished Facilities, Supplies, and Services.** If work at DHS-provided facilities is necessary for the services being performed under this SOW, such facilities will be provided at S&T's office in Washington, D.C. Parking facilities are not provided, however several commercial parking facilities are located near S&T's office. Basic facilities such as work space and associated operating requirements (e.g., phones, desks, utilities, desktop computers, and consumable and general purpose office supplies) will be provided to Northeastern University personnel working in S&T's office.
5. **Place of Performance.** Northeastern University will perform the work under this SOW at Northeastern University or the facility of one of the subcontractors.
6. **DHS-Furnished Property.** DHS property will not be provided to Northeastern University unless otherwise agreed in a task order issued under this SOW. In such instances, DHS will maintain property records.

Before purchasing any individual item equal to or exceeding \$50,000 that is required to support technical tasks performed pursuant to this SOW, Northeastern University shall obtain the DHS S&T Technical Representative's prior written consent. The DHS S&T Technical Representative may lower or raise the aforementioned \$50,000 threshold at his/her discretion and on written notice to Northeastern University. If the DHS S&T Technical Representative consents to such purchase, such item shall become the property of DHS. Northeastern University will maintain any such items according to currently existing property accountability procedures. The DHS S&T Technical Representative will determine the final disposition of any such items.

7. **Deliverables.** Northeastern University will provide all deliverables identified in this SOW directly to the DHS S&T Technical Representative with a copy of the transmittal letter to the Contracting Officer.

**Acceptance Criteria.** Deliverables shall be subject to testing, review, and acceptance by DHS to verify that each deliverable satisfies DHS's applicable acceptance criteria. "Acceptance Criteria" mean the criteria developed by DHS to determine whether a deliverable is ready for acceptance by DHS and may include, without limitation, requirements that the applicable deliverable: (i) has been completed and delivered/achieved according to this SOW; (ii) meets or exceeds the identified requirements in this SOW, including but not limited to technical specifications and performance standards; and (iii) complies with such other criteria as may be developed and agreed on by DHS and Northeastern University. Deliverables for which DHS wishes to develop Acceptance Criteria will be identified by DHS, in writing, prior to initiation of any work on such deliverables. DHS and Northeastern University will agree in writing on the Acceptance Criteria associated with such deliverables.

**Correction of Nonconformities.** If a deliverable fails to meet the relevant Acceptance Criteria (each such failure or deficiency is referred to as a "Nonconformity"), DHS will provide written notification to Northeastern University of such failure. Upon receiving such notice, Northeastern University will inform DHS in writing of the costs associated with correction and proposed actions to correct. Corrective actions will not be undertaken until additional funding has been received as well as clear written guidance as to what actions are authorized. The corrected Nonconformity will be redelivered to DHS, which will then confirm in writing whether the redelivered deliverable conforms to and satisfies the applicable Acceptance Criteria. The process described in this Section may be repeated as necessary until all Nonconformities are corrected and the deliverable conforms to and satisfies its Acceptance Criteria or until either party reasonably determines that continued efforts would be unsuccessful. DHS will cover all expenses associated with these corrective activities.

8. **Program Status Report.** Northeastern University will deliver a monthly program status report to the DHS S&T Technical Representative, DHS S&T Business Operations Manager, and DHS S&T Resource Manager containing metrics pertaining to financial,

schedule, and scope information, risk information, and performance assessment information of all work performed hereunder.

9. **Cost Summary.** DHS will provide funding to Northeastern University in accordance with DHS's appropriations and available funds. Requested funding amount is [REDACTED]

10. **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 Northeastern University as to which work will be conducted in a classified manner and at which classification level. If such DHS-guidance conflicts with applicable DOE guidelines, Northeastern University will adhere to the applicable DOE guidelines. Northeastern University will also adhere to other applicable Government orders, guides, and directives pertaining to classified or confidential work. This SOW may require access to information at the FOUO level.
- c. The Contractor shall closely coordinate with the COTR regarding any proposed scientific, technical or professional publication of the results of the work performed or any data developed under this contract. The Contractor shall provide the COTR an opportunity to review any proposed manuscripts describing, in whole or in part, the results of the work performed or any data developed under this contract at least 45 days prior to publication. The COTR will review the proposed publication and provide comments. A response shall be provided to the Contractor within 45 days; otherwise, the Contractor may assume that the COTR has no comments. The Contractor agrees to address any concerns or issues identified by the COTR prior to publication.

**IV. Points of Contact**

Northeastern University Points of Contact (POCs) are as follows:

**Technical POC(s):**

John Beatty  
Northeastern University  
360 Huntington Avenue  
251 RI  
Boston, MA 02115-5000  
Tel: [REDACTED]  
[REDACTED]

**Financial POC(s):**

Paul Powell  
Northeastern University  
360 Huntington Avenue  
251 RI  
Boston, MA 02115-5000  
Tel: [REDACTED]

Northeastern University may change the individual designated as a POC upon notice to DHS S&T of such change.

The DHS POCs are as follows:

**DHS S&T Technical Representative:**

Mike Shepard  
Department of Homeland Security  
Science and Technology  
Directorate/Explosives Division/ATTN: Mike Shepard  
Washington, DC 20528  
Tel: [REDACTED]

**DHS S&T Business Operations Manager:**

Wallicia Tapscott  
Explosives Division  
Science and Technology Directorate  
Department of Homeland Security  
Washington, DC 20582  
Tel: [REDACTED]  
Fax: 202-254-5393  
[REDACTED]

**DHS Financial Analysis:**

Shaun MacKeever  
Contractor in support of the  
Department of Homeland Security  
Science and Technology Directorate  
Explosives Division  
Washington, DC 20528  
Tel: [REDACTED]

DHS S&T may change the individual designated as a POC upon notice to Northeastern University of such change.



AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | CONTRACT ID CODE | PAGE OF PAGES  
 1 | | 1 | 6

2. AMENDMENT/MODIFICATION NO. | 3. EFFECTIVE DATE | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO. (If applicable)  
 P00003 | 09/10/2008 | RSTR-08-00071 |

6. ISSUED BY | CODE | 7. ADMINISTERED BY (If other than Item 6) | CODE  
 U.S. Dept. of Homeland Security | DHS/OPO/S&T/S&T | OPO S&T Acquisition Branch | DHS/OPO/S&T/S&T  
 Office of Procurement Operations  
 S&T Acquisition Branch  
 245 Murray Lane, SW  
 Building 410  
 Washington DC 20528

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) | 9A. AMENDMENT OF SOLICITATION NO. | 9B. DATED (SEE ITEM 11) | 10A. MODIFICATION OF CONTRACT/ORDER NO. | 10B. DATED (SEE ITEM 11)  
 NORTHEASTERN UNIVERSITY | (X) | | HSHQDC-07-C-00016 | 12/06/2006  
 360 HUNTINGTON AVENUE  
 251 RI  
 BOSTON MA 021155000

CODE 0014236310000 | FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers  is extended.  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required) | Net Increase: |  
 NONE000-000-8X-39-02-01-001-01-00-0000-00-00-00-00-GE-OE-25-50-000000

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO. (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  
 B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103b).  
 X | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF 43.103(a)(3)  
 D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not.  is required to sign this document and return \_\_\_\_\_ 1 \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  
 DUNS Number: 001423631+0000  
 Delivery: 365 Days After Award  
 Discount Terms:  
 Net 30  
 Delivery Location Code: S&T MURRAY LANE  
 DHS S&T  
 245 Murray Lane  
 Building 410  
 Washington DC 20528

FOB: Destination  
 Continued ...  
 Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  
 Maureen A. Joyce | Albert Dainton  
 Director, Div. of Sponsored Project Admin.  
 15B. CONTRACTOR/REFEROR | 15C. DATE SIGNED | 15D. UNITED STATES OF AMERICA | 16C. DATE SIGNED  
 [Signature] | 9-11-08 | [Signature] | 9/24/08

NAME OF OFFEROR OR CONTRACTOR  
NORTHEASTERN UNIVERSITY

ITEM NO (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0005	Period of Performance: 07/10/2006 to 10/31/2008  Add Item 0005 as follows:  The purpose of this modification is to incorporate an additional tasking into the contract's Statement of Work (see Attachment 1.) Obligated Amount: ██████████				██████████

**Statement of Work for Northeastern University  
Contract HSHQDC-07-C-00016**

**Support for NATO SET Panel 124**

**Directorate of Science and Technology  
U.S. Department of Homeland Security  
International Programs Division**

**I. Background**

The U.S. Department of Homeland Security (DHS) is committed to using cutting-edge technologies and scientific talent in its quest to make America safer. The DHS Directorate of Science and Technology (S&T) is tasked with researching and organizing the scientific, engineering, and technological resources of the United States and the international community and leveraging these existing resources into technological tools to help protect the homeland. The International Programs Division (IND) at DHS S&T was established in accordance with the Implementing Recommendations of the 9/11 Commission Act of 2007 (codified as amended at 6 U.S.C. 317), indicating DHS priority. The responsibilities of IND is to facilitate the matching of US entities engaged in homeland security research with foreign counterparts so that they may partner in cooperative research activities.

IND, in conjunction with DHS S&T's Counter-IED Detection Program, seeks to continue efforts to develop Terahertz wave based sensing technologies for standoff explosives detection. These efforts have been initiated by Northeastern University and its performer, Rensselaer Polytechnic University (Contract HSHQDC-07-C-00016). This task will provide the Government with the capacity to further develop THz technology and to support NATO field tests of such technology. The output— a report of these efforts and a report on the NATO meeting—will build capacity for international operational cooperation in the area counter-IED detection.

**II. Scope of Work**

Northeastern University and its performer will continue the development of Terahertz wave based sensing technologies for standoff explosives detection. In addition to the tasks already prescribed in the aforementioned contract, the performer will also help organize and then participate in the 4<sup>th</sup> NATO SET Panel 124 business meeting to be held at The Hague, Netherlands in late October 2008. The performer will present their result in the meeting (pre-approval might be required by DHS).

Upon completion of this international meeting, the performer shall deliver a report documenting the results of the NATO meeting. A final report shall be submitted to DHS S&T documenting

the efforts to develop THz technology, field tests of such technology and technical recommendations on the state-of-the-art in Terahertz based explosives detection.

### III. Other Contract Details

1. **Period of Performance.** The period of performance for this SOW is for a period of twelve months from the date of award. DHS may give subsequent extension notices to Northeastern University in writing for further performance in accordance with the terms of this SOW.
2. **Travel.** Travel to a NATO meeting in Europe is anticipated.
3. **DHS-Furnished Information.**
  - a. DHS will provide certain DHS information, materials, and forms unique to DHS to Northeastern University to support certain tasks under this SOW.
  - b. The DHS S&T Technical Representative identified in this SOW will be the point of contact (POC) for identification of any required information to be supplied by DHS.
4. **Place of Performance.** Northeastern University will perform the work under this SOW at their location in Boston, Massachusetts and at Rensselaer Polytechnic University in Troy, NY.
5. **Deliverables.** Northeastern University will provide all deliverables identified in this SOW to the DHS S&T Technical Representative with a copy of the transmittal letter to the Contracting Officer.
6. **Program Status Report.** Northeastern University will deliver a final Program Status Report in accordance with the Parties mutually agreed format and content requirements to the DHS Technical Representative and DHS Resource Manager. Among other things, the report shall include financial, schedule, and scope information, and an assessment of performance for all work performed under this SOW.

**Funding Requirements.** DHS will provide funding to Northeastern University in accordance with DHS's appropriations and available funds pursuant to the allocation as outlined below:

██████████ Support for NATO SET Panel 124

7. **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 Northeastern University as to which work will be conducted in a classified manner and at

which classification level. Northeastern University will also adhere to other applicable Government orders, guides, and directives pertaining to classified or confidential work. This SOW may require access to information at the Secret level and with the Restricted Data category.

#### **IV. Points of Contact**

Northeastern University Points of Contact (POCs) are as follows:

##### **Technical Representative**

Prof. X.-C. Zhang  
Center for Terahertz Science and Technology  
Rensselaer Polytechnic Institute  
Phone: [REDACTED], email: [REDACTED]

##### **Financial Representative**

John Beaty  
Northeastern University  
320 Huntington Avenue  
Stearns Center, Suite 302  
Boston, Massachusetts 02115  
Cell: [REDACTED], Phone: [REDACTED]  
Fax: (617) 373-8627, [REDACTED]

Northeastern University may change the individual designated as a POC upon notice to DHS S&T of such change.

The DHS S&T POCs are as follows:

##### **Technical Representative**

Penny Satches-Brohs  
Deputy Director  
International Programs Division  
Science and Technology Directorate  
U.S Department of Homeland Security  
[REDACTED]  
Washington, DC 20005  
Phone: [REDACTED]  
E-Mail: [REDACTED]

##### **Financial Representative**

Ms. Stephanie Howlett  
International Programs Division  
Science and Technology Directorate

U.S Department of Homeland Security

[REDACTED]  
Washington, DC 20005

Phone: [REDACTED]

E-Mail: [REDACTED]

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>		1. CONTRACT ID CODE		PAGE OF PAGES	
2. AMENDMENT/MODIFICATION NO. P00004		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ NO. RSEN-09-00040	
5. PROJECT NO. (if applicable)		6. ISSUED BY DHS/OPO/S&T/EXBOR		7. ADMINISTERED BY (if other than item 6) DHS/OPO/S&T/EXBOR	
8. NAME AND ADDRESS OF CONTRACTOR (no., street, county, state and ZIP Code) NORTHEASTERN UNIVERSITY 360 HUNTINGTON AVENUE 251 R1 BOSTON MA 021155000		9A. AMENDMENT OF SOLICITATION NO.		9B. DATED (SEE ITEM 11)	
CODE 0014236310000		FACILITY CODE		10A. MODIFICATION OF CONTRACT ORDER NO. HSBQDC-07-C-00016	
				10B. DATED (SEE ITEM 13) 12/06/2006	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of offers  is extended  is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 9 and 10, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided such telegram or letter makes reference to the solicitation and the amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

See Schedule Net Increase: \$549,918.00

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF FAR 52.243-2 Alt V Changes - Cost Reimbursement - Alternate V
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)  
DUNS Number: 0014236310000

The purpose of this modification to contract HSBQDC-07-C-00016 is to increase the ceiling for CLIN 0001 by \$143,716.00 for a new total of \$1,855,099, add additional funding of \$549,918.00 to CLIN 0001 to continue Phase I of the original contract in accordance with the attached Statement of Work (SOW), extend the period of performance of the contract through 30 September 2010, and update the invoicing instructions as follows:

Invoicing instructions previously provided in clause G-7, Invoicing Instructions, are revised as follows: Invoices may be e-mailed to SAT.Invoice.Consolidation@dhs.gov, or mailed to:  
DHS ICE  
Continued ...

Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) Lawrence W. Barnett, Acting Director Div. of Sponsored Project Admin.	15B. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Joseph F. Wolfinger
15C. DATE SIGNED 4/29/09	15D. UNITED STATES OF AMERICA [Signature]
15E. DATE SIGNED 5-4-2009	

NAME OF OFFEROR OR CONTRACTOR  
NORTHEASTERN UNIVERSITY

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	Burlington Finance Center P.O. Box 1000 Attn: S&T Explosives Division Williston, VT 05495-1000 Delivery: 09/30/2010 Discount Terms: Net 30 Delivery Location Code: DHS Department of Homeland Security 245 Murray Lane Bldg. 410 Washington DC 20528  FOB: Destination Period of Performance: 07/10/2006 to 09/30/2010  Change Item 0001 to read as follows (amount shown is the obligated amount):				
0001	PTIEDD - Phase I: BomDetec Project Including Data Deliverables Fully Funded Obligation Amount [REDACTED] Product/Service Code: R425 Product/Service Description: ENGINEERING & TECHNICAL SERVICES  Accounting Info: NONE000-000-RX-06-10-DC-005-06-01-0000-00-00-00 -GE-DL-25-50-00000 Funded: \$0.00 Accounting Info: NONE000-000-SX-06-10-DC-005-06-01-0000-00-00-00 -GE-DL-25-50-00000 Funded: \$0.00 Accounting Info: NONE000-000-SX-06-20-DC-005-06-01-0000-00-00-00 -GE-DL-25-50-00000 Funded: \$0.00 Accounting Info: NONE000-000-9X-33-06-03-006-01-00-0000-00-00-00 -GE-OR-25-50-000000 Funded: [REDACTED]  CLIN 0001 is now fully funded in the amount of [REDACTED]	1	EO	[REDACTED]	[REDACTED]



**AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**

1. CONTRACT ID CODE  
PAGE OF PAGES  
1 2

2. AMENDMENT/MODIFICATION NO. 3. EFFECTIVE DATE 4. REQUISITION/PURCHASE REQ. NO. 5. PROJECT NO. (If applicable)  
P00005 See Block 16C RSEN-10-00009

6. ISSUED BY CODE DHS/OPO/S&T/EXBOR 7. ADMINISTERED BY (If other than Item 6) CODE DHS/OPO/S&T/EXBOR

U.S. Dept. of Homeland Security  
Office of Procurement Operations  
S&T Acquisition Division  
245 Murray Lane, SW  
Building 410  
Washington DC 20528

U.S. Dept. of Homeland Security  
Office of Procurement Operations  
S&T Acquisition Division  
245 Murray Lane, SW  
Building 410  
Washington DC 20528

8. NAME AND ADDRESS OF CONTRACTOR (No. street, county, State and ZIP Code)  
  
NORTHEASTERN UNIVERSITY  
360 HUNTINGTON AVENUE  
251 R1  
BOSTON MA 02115000  
  
CODE 0014236310000 FACILITY CODE

9A. AMENDMENT OF SOLICITATION NO. (x)  
9B. DATED (SEE ITEM 11)  
10A. MODIFICATION OF CONTRACT/ORDER NO. x HSHQDC-07-C-00016  
10B. DATED (SEE ITEM 13) 12/06/2006

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended.  is not extended.  
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)  
See Schedule

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE  
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.  
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).  
X C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-2 Alt V, Changes - Cost Reimbursement (Aug 1987) - Alternate V (Apr 1984)  
D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

**14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)**

DUNS Number: 001423631+0000  
Division: Explosives  
PPA: Counter IED  
Thrust: Detect  
Program: PBIED- Transition Projects  
Project: Intelligent Pedestrian Surveillance Platform  
Performer: Northeastern University  
Appropriation Year: FY09 (9X Funds)  
Budget Authority: No-Year R&D Funds  
Project Manager: Tom Coly  
Lead Support Staff: N/A  
Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 8A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)  
Duane Schatz  
15B. CONTRACTOR/OFFEROR 15C. DATE SIGNED 16B. UNITED STATES OF AMERICA 16C. DATE SIGNED  
(Signature of person authorized to sign) (Signature of Contracting Officer) 11/30/2009

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 HSHQDC-07-C-00016/P00005

PAGE 2 OF 2

NAME OF OFFEROR OR CONTRACTOR  
 NORTHEASTERN UNIVERSITY

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>AIC: 70-08-1513                      APPS: 70X0800</p> <p>The purpose of this modification to contract HSHQDC-07-C-00016 is to change the current Contracting Officer's Technical Representative (COTR) from Mike Shepard to Tom Coty. Contract clause G2: CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR) is deleted in its entirety and replaced with the following:</p> <p>Thomas P. Coty                      Department of Homeland Security                      ATTN: Science and Technology Directorate                      Explosives Division                      245 Murray Lane                      Washington, DC 20528                      Tel: [REDACTED]                      Fax: 202-254-5398                      [REDACTED]</p> <p>The above contact information also replaces Mike Shepard's contact information in Section IV, Points of Contact, in the Statement of Work (SOW).</p> <p>All other terms and conditions of the contract remain unchanged.                      Period of Performance: 07/10/2006 to 09/30/2010</p>				

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGES 1 3
2. AMENDMENT/MODIFICATION NO. P00006	3. EFFECTIVE DATE See Block 16C	4. REQUISITION/PURCHASE REG. NO. RSTR-10-00066	5. PROJECT NO. (if applicable)
6. ISSUED BY U.S. Dept. of Homeland Security Office of Procurement Operations S&T Acquisition Division 245 Murray Lane, SW Building 410 Washington DC 20528	CODE DHS/OPO/S&T/RSRCH	7. ADMINISTERED BY (if other than Item 6)	CODE DHS/OPO/S&T/RSRCH
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)  NORTHEASTERN UNIVERSITY 360 HUNTINGTON AVENUE 251 RI BOSTON MA 021155000		9A. AMENDMENT OF SOLICITATION NO.  9B. DATED (SEE ITEM 11)	
CODE 0014236310000		10A. MODIFICATION OF CONTRACT/ORDER NO. HSHQDC-07-C-00016	
FACILITY CODE		10B. DATED (SEE ITEM 13) 12/06/2006	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 9 and 15, and returning \_\_\_\_\_ copies of the amendment, (b) By acknowledging receipt of this amendment on each copy of the offer submitted, or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

NONE000-000-8X-39-02-01-001-01-00-0000-00-00-00-00-GE-0E-25-50-000000 Net Decrease: -\$12,000.00

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 48.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 43.103 Mutual Agreements of Both Parties
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not,  is required to sign this document and return \_\_\_\_\_ 1 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

DONS Number: 001423631+0000  
 ALC: 70-08-1513  
 APPS: 70X0800

Division: Explosives  
 PPA: Counter IED  
 Thrust: Detect  
 Program: PBIED- Transition Projects  
 Project: Intelligent Pedestrian Surveillance Platform  
 Performer: Northeastern University

Continued ...  
 Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and is full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)	15A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
[Redacted]	Kevin Dillon
15B. CONTRACTOR/OFFEROR	15B. UNITED STATES OF AMERICA
15C. DATE SIGNED 10-19-10	15C. DATE SIGNED 10/19/10
(Signature of person authorized to sign)	(Signature of Contracting Officer)

**CONTINUATION SHEET**

REFERENCE NO. OF DOCUMENT BEING CONTINUED  
 HSHQDC-07-C-00016/P00006

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 2 3

NAME OF OFFEROR OR CONTRACTOR  
 NORTHEASTERN UNIVERSITY

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>Project Manager: Tom Coty</p> <p>The purpose of this modification is to de-obligate funds from subject Inter-Agency Agreement (IAA).</p> <p>The modification hereby de-obligates funds in the amount of -\$12,000.00 from subject Inter-Agency Agreement (IAA).</p> <p>The funding amount hereby decreases -\$12,000.00 from [REDACTED]</p> <p>The Invoice Address for the subject contract is hereby replaced with the following address:</p> <p>DHS ICE                      Burlington Finance Center                      P.O. Box 1000                      ATTN: S&amp;T Division                      Williston, VT 05495-1000</p> <p>Invoices may be sent by mail to the above-specified address or they may be submitted by e-mail to: SAT.Invoice.Consolidation@dhs.gov</p> <p>Point of Contact for Return of Executed Document:</p> <p>The Point of Contact for the return of the executed agreement is: Renee J. Bayton, Contract Specialist, E-mail: [REDACTED]</p> <p>DO/DPAS Rating: NONE                      Delivery: 365 Days After Award                      Discount Terms:                          Net 30                      Delivery Location Code: S&amp;T MURRAY LANE                      DHS S&amp;T                      245 Murray Lane                      Building 410                      Washington DC 20528</p> <p>FOB: Destination                      Period of Performance: 07/10/2006 to 09/30/2010</p> <p>Continued ...</p>				

NAME OF OFFEROR OR CONTRACTOR  
NORTHEASTERN UNIVERSITY

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
0005	Change Item 0005 to read as follows (amount shown is the obligated amount):  De-obligation of the remaining balance Obligated Amount: <span style="background-color: black; color: black;">██████████</span>				<span style="background-color: black; color: black;">██████████</span>