

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID#	PAGE OF PAGES 1 8	
2. AMENDMENT/MODIFICATION NO. P00002	3. EFFECTIVE DATE 07/02/2008	4. REQUISITION/PURCHASE REQ. 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 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 (incl. street, county, State and ZIP Code) NORTHEASTERN UNIVERSITY 360 HUNTINGTON AVENUE 251 RI BOSTON MA 021155000		(X) 9A. AMENDMENT OF SOLICITATION NO.		
		9B. DATED (SEE ITEM 11)		
		X 10A. MODIFICATION OF CONTRACT/ORDER NO. RSEBQDC-07-C-00016		
		10B. DATED (SEE ITEM 11) 12/06/2006		
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. 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 each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

Is extended.  Is not extended.

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.

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 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 6A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Aaron H. Ford		15B. LIMITING STATES OF AMERICA (b) (6)		15C. DATE SIGNED 8/5/08	
15D. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Maureen A. Joyce Director, Div. of Sponsored		15E. DATE SIGNED 7/24/08		15F. SIGNATURE OF CONTRACTING OFFICER	

<b>CONTINUATION SHEET</b>	REFERENCE OF DOCUMENT BEING CONTINUED HSRQDC-07-C-00016/P00002	PAGE 2	OF 8
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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)
	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 \$420K.

- 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 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 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 \$420,000.

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: (b) (6)

(b) (6)

**Financial POC(s):**

Paul Powell  
Northeastern University  
360 Huntington Avenue  
251 RI  
Boston, MA 02115-5000  
Tel: (b) (6)  
(b) (6)

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: (b) (6)  
(b) (6)

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

Wallicia Tapscott  
Explosives Division  
Science and Technology Directorate  
Department of Homeland Security  
Washington, DC 20582  
Tel: (b) (6)  
Fax: 202-254-5393  
(b) (6)

**DHS Financial Analysis:**

Shaun MacKeever  
Contractor in support of the  
Department of Homeland Security  
Science and Technology Directorate  
Explosives Division  
Washington, DC 20528  
Tel: (b) (6)  
(b) (6)

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