

AWARD/CONTRACT		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)		RATING		PAGE OF PAGES 1 22	
2. CONTRACT (Proc. Inst. Ident.) NO HSRQDC-06-C 00028				3. EFFECTIVE DATE See Block 20C		4. REQUISITION/PURCHASE REQUEST/PROJECT NO RSAR-05-00342	
5. ISSUED BY Department of Homeland Security Office of Procurement Ops (HSARPA) 245 Murray Lane Building 410 Washington DC 20528		CODE DHS/OPO/HSARPA		6. ADMINISTERED BY (If other than Item 5) Department of Homeland Security Office of Procurement Operations/ Homeland Security Advanced Research Projects Agency Washington DC 20528		CODE DHS	
7. NAME AND ADDRESS OF CONTRACTOR (No. Street, City, Country, State and ZIP Code) NORTHROP GRUMMAN SECURITY SYSTEMS LLC 1580 E WEST NURSERY RD LINTHICUM HEIGHTS MD 210900000				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 G. 7	
CODE 1046382050000		FACILITY CODE					
11. SHIP TO/MARK FOR DHS S&T 245 Murray Lane Building 410 Washington DC 20528		CODE S&T MURRAY LANE		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 DHS S&T	
13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 USC 2304 (a) <input type="checkbox"/> 41 USC 253 (e)				14. ACCOUNTING AND APPROPRIATION DATA See Schedule			
15A. ITEM		15B. SUPPLIES/SERVICES		15C. QTY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
Continued							
19G. TOTAL AMOUNT OF CONTRACT						\$1,310,267.00	
16. TABLE OF CONTENTS							
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CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17. **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 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. **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.

19A. NAME AND TITLE OF SIGNER (Type or print)
Janice L. Pesyna, Sr. Contracts Rep

20A. NAME OF CONTRACTING OFFICER
Linda Mulligan

19B. NAME OF CONTRACTOR
BY _____
(Signature of person authorized to sign)

19C. DATE SIGNED
10 March 06

20B. UNITED STATES OF AMERICA
Linda Mulligan
(Signature of the Contracting Officer)

20C. DATE SIGNED
20 March 2006

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

The purpose of this cost-type contract is the development of cost optimized biological aerosol sensory stem for the Department of Homeland Security for the Low Cost Bio-Aerosol Detector System (LBADS) program which seeks to provide a series of systematic engineering reviews; a final report; the design, fabrication, and testing of a breadboard/brassboard; and test plans.

B.2 CONTRACT LINE ITEMS

1. The Contractor shall provide said Research & Development Contract Line Items (CLINs) identified below on a Cost Plus Fixed Fee (CPFF) basis. 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>Total Cost</i>
0001	LBADS Phase I	1	Lot	\$1,310,267	\$1,310,267
0002	Deliverables	1	Lot	NSP	NSP
0003	LBADS Phase II (Option 1) ^{-rom}	1	Lot	\$1,700,000	\$1,700,000
0004	Deliverables	1	Lot	NSP	NSP
	<i>Total CPFF</i>				\$3,010,267

NSP - Not Separately Priced

2. It is the intent of the Government that this contract be considered a "completion" cost effort. That is, the contractor will be obliged to perform through to phase completion to the extent that funds are available under the contract to cover the costs incurred. In no event shall this provision be construed to modify FAR 52.232-20, "Limitation of Cost". 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.

3. By signing this document, the Contractor is required to perform the work outlined in the Statement of Work attached in Section J. Optional Phase II will be re-proposed and re-evaluated at the conclusion of the preceding Phase, and incorporated should any Option be exercised.

B.3 OPTIONS

The LBADS project is being conducted in two phases: Phase I (CLINS 0001 and 0002), is to provide a series of systematic engineering reviews; a final report; the

design, fabrication, and testing of a breadboard/brassboard; and test plans; and Phase II (CLINS 0003 and 0004, Option 1) continues the design convergence through continued engineering reviews, designs and evaluations culminating in prototype development, fabrication and testing. 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 STATEMENT OF WORK

The statement of work is provided in Section J, Attachment 1.

C.1 SECURITY REQUIREMENT

- (a) The highest level of security required under this contract is Secret as designated on the DD Form 254, Section J, Attachment 3 to this contract. The Contractor is responsible for maintaining security clearances at the level(s) required under this contract. The Defense Security Service, Industrial Security Clearance Office, Administrative Security Division (DD 254, Block 6C) is the point-of-contact regarding security matters.
- (b) In addition to the requirements of the Clause FAR 52.204-2, "Security Requirements", the Contractor shall appoint a security officer, who shall (1) be responsible for all security aspects of the work performed under this contract, (2) assure compliance with the National Industrial Security Program Operating Manual (NISPOM) (DOD 5220.22-M), and (3) assure compliance with any written instructions from the DHS Security Officer.

D.0 PACKAGING AND MARKING

D.1 PACKAGING AND MARKING

Phase I deliverables required by the Contract Data Requirements List (CDRL) shall be electronically submitted to michael.mcloughlin@dhs.gov. Packaging and Marking instructions for Phases II deliverables will be addressed at the time of option exercise.

E.0 INSPECTION AND ACCEPTANCE**E.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>

FEDERAL ACQUISITION REGULATION CLAUSE:

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. Satisfactory completion of such services shall be documented by submission of a signed Certificate of Completion upon submittal of the Final Report, to be countersigned by the COTR.

F.0 DELIVERIES OR PERFORMANCE**F.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>

FEDERAL ACQUISITION REGULATION CLAUSE:

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 12 months ARO. The period of performance for all optional phases, if exercised, is 12 months ARO from Ph I.

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

All deliverable/delivery schedules under this contract are outlined in the statement of work.

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

The Contracting Officer for this Contract is identified below:

Name:	Linda Mulligan
Title:	Contracting Officer
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency / Office of Procurement Operations
Address:	Washington, DC 20598
Voice:	(202) 254-6677
Fax:	(202) 254-6167
Email:	linda.mulligan@dhs.gov

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

The COTR for this Contract is identified below:

Name:	Michael McLoughlin
Title:	Program Manager
Agency:	Department of Homeland Security Homeland Security Advanced Research Projects Agency
Address:	Washington, DC 20598
Voice:	(202) 254-6134

Fax:	(202) 254-6170
Email:	michael.mcloughlin@dhs.gov

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).

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: deborah.devault@dhs.gov

- (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) Overhead
- (8) Other Direct Cost (ODCs)
- (9) Travel
- (10) Total Costs

Northrop Grumman procedures are approved by DCAA; backup documents shall be available for audit/review to DCAA, upon request

G.8 TECHNICAL DIRECTION

- (a) Technical Directions is defined to include:

- (1) Written directions to the Contractor which fill in details, suggest possible lines of inquiry, or otherwise facilitate completion of work within the existing scope of work as defined in the Statement of Work;
- (2) Provision of written information to the Contractor which assists in the interpretation of drawings, specifications, or technical portions of the work statement;

- (3) Review and, where required, provide written approval of technical reports, drawings, specifications, or technical information to be delivered. Technical directions must be in writing, and must be within the scope of the work as detailed in Section C.
- (b) The COTR is authorized by designation to take any or all action with respect to the following which could lawfully be taken by the Contracting Officer, except any action specifically prohibited by the terms of this Contract:
- (1) Assure that the Contractor performs the technical requirements of the contract in accordance with the contract terms, conditions, and specifications.
 - (2) Perform or cause to be performed, inspections necessary in connection with (1) above and require the Contractor to correct all deficiencies; perform acceptance for the Government.
 - (3) Maintain all liaison and direct communications with the Contractor. Written communications with the Contractor and documents shall be signed as "Contracting Officer's Technical Representative" with a copy furnished to the Contracting Officer.
 - (4) Issue written interpretations of technical requirements of Government drawings, designs, and specifications.
 - (5) Monitor the Contractor's production or performance progress and notify the Contractor in writing of deficiencies observed during surveillance, and direct appropriate action to effect correction. Record and report to the Contracting Officer incidents of faulty or nonconforming work, delays or problems.
 - (6) Obtain necessary security clearance and appropriate identification if access to Government facilities is required. If to be provided, ensure that Government furnished property is available when required.

LIMITATIONS: The COTR is not empowered to award, agree to, or sign any contract (including delivery or purchase orders) or modifications thereto, or in any way to obligate the payment of money by the Government. The COTR may not take any action which may impact on the contract schedule, funds, scope or rate of utilization of LOE. All contractual agreements, commitments, or modifications which involve prices, quantities, quality, schedules shall be made only by the Contracting Officer.

- (c) The COTR is required to meet annually with the Contractor and the Contracting Officer concerning performance of items delivered under this contract and any other administration or technical issues. Telephonic reports may be made if no

problems are being experienced. Problem areas should be brought to the immediate attention of the Contracting Officer.

- (d) In the absence of the designated COTR, the COTR may designate someone to serve as COTR in their place. However, such action to direct an individual to act in the COTR's stead shall immediately be communicated to the Contractor and the Contracting Officer.
- (e) Contractual Problems - Contractual problems, of any nature, that may arise during the life of the contract must be handled in conformance with specific public laws and regulations (i.e. Federal Acquisition Regulation). The Contractor and the COTR shall bring all contracting problems to the immediate attention of the Contracting Officer. Only the Contracting Officer is authorized to formally resolve such problems. The Contracting Officer will be responsible for resolving legal issues, determining contract scope and interpreting contract terms and conditions. The Contracting Officer is the sole authority authorized to approve changes in any of the requirements under this contract. Notwithstanding any clause contained elsewhere in this contract, the said authority remains solely with the Contracting Officer. These changes include, but will not be limited to the following areas: scope of work, price, quantity, technical specifications, delivery schedules, and contract terms and conditions. In the event the Contractor effects any changes at the direction of any other person other than the Contracting Officer, the change will be considered to have been made without authority.
- (f) Failure by the Contractor to report to the Contracting Officer conduct that the Contractor considers to constitute a change to this contract, as provided by FAR 52.243-7 (Notification of Changes), waives the Contractor's right to any claims for equitable adjustments.

G.9 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.10 GOVERNMENT FURNISHED EQUIPMENT (GFE)/INFORMATION (GFI)/MATERIALS (GFM)

GFE/GFI/GFM is provided in the statement of work and is governed by FAR Clause 52.245-5.

H.0 SPECIAL CONTRACT REQUIREMENTS

H.1 SECURITY REQUIREMENT

(a) This clause applies to the extent that this contract involves access to information classified "Secret," information/materials.

(b) The Contractor shall comply with—

(1) The Security Agreement (DD Form 441), including the *National Industrial Security Program Operating Manual* (DoD 5220.22-M); and

(2) Any revisions to that manual, notice of which has been furnished to the Contractor.

(c) If, subsequent to the date of this contract, the security classification or security requirements under this contract are changed by the Government and if the changes cause an increase or decrease in security costs or otherwise affect any other term or condition of this contract, the contract shall be subject to an equitable adjustment as if the changes were directed under the Changes clause of this contract.

(d) The Contractor agrees to insert terms that conform substantially to the language of this clause, including this paragraph (d) but excluding any reference to the Changes clause of this contract, in all subcontracts under this contract that involve access to classified information.

H.2 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 and the Contractor shall have no obligation under this Agreement to hold information in confidence which, although identified and disclosed as stated herein, has been or is developed by the Contractor independently and without benefit of information disclosed hereunder; and:

(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.3 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 (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	Sep 2005
52.204-2	Security Requirements	Aug 1996
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	Pension Adjustments and Asset Reversions	Oct 2004
52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits (PRB) Other Than Pensions	Jul 2005
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
52.216-8	Fixed Fee	Mar 1997
52.219-8	Utilization of Small Business Concerns	May 2004
52.219-9	Small Business Subcontracting Plan	Jul 2005
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	Jul 1990
52.222-3	Convict Labor	Jun 2003
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/ Alts. I-IV	Rights in Data – General (Alternates I - 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	Apr 2005
52.232-9	Limitation on Withholding of Payments	Apr 1984
52.232-17	Interest	Jun 1996
52.232-20	Limitation of Cost	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 -Alternate I	Jul 2002, Dec 1991 (Alt I)
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 I	Aug 1998, Aug 1998 (Alt I)
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
52.246-25	Limitation of Liability – Services	Feb 1997
52.247-1	Commercial Bill of Lading Notations	Apr 1984
52.247-63	Preference for U.S. Flag Air Carriers	Jun 2003
52.249-6	Termination (Cost Reimbursement)	May 2004
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).

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.

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

Except for data contained on pages i, ii (original transmittal letter with original price), 3 through 20, 25 of Volume I technical proposal, and on pages 3 through 6, 15, 20, 28, 36 through 40, and 45 of Volume II management proposal, 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 RPI V2021B dated 9 September 2005, upon which this contract is based.

I.6 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 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.
- (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 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.

(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.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.

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).

J.0 ATTACHMENTS

- (1) Statement of Work dated March 10, 2006
- (2) Contract Data Requirements List dated February 8, 2006
- (3) Contract Security Classification Specification, DD Form 254 dated February 27, 2006
- (4) Data Right Assertions

COST-OPTIMIZED BIOLOGICAL AGENT SENSOR SYSTEM (CO-BASS)

PHASE I STATEMENT OF WORK

The purpose of this statement of work is to describe the contractor activities required to assess the design convergences to the LBADS overall goals and objectives. The convergence to the LBADS shall be achieved in several phases. This Statement of Work describes the activities for Phase I which include:

- A series of systematic engineering reviews;
- A Final Report;
- The design, fabrication, and testing of a breadboard/brassboard;
- and test plans.

Future phases continue the design convergence through continued engineering reviews, designs and evaluations culminating in prototype development, fabrication and testing.

SOW 1. Monthly Reports

A brief (not more than one page) narrative reports shall be electronically submitted to the HSARPA Program Manager within one week after the last day of each month. These reports shall describe the previous 30 calendar days' activity, technical progress achieved against project goals, difficulties encountered, recovery plans (if needed), and explicit technical plans for the next 30 day period.

Deliverable: CDRL Data Item Deliverable (DID) 1 – Monthly Report

SOW 2. Quarterly Reviews

Quarterly reports (not to exceed 5 pages) shall be electronically submitted to the HSARPA Program Manager and are due one week prior to the time of the quarterly reviews, with the first Quarterly Review occurring not more than 90 days after contract signing. The Quarterly reports shall describe the previous 90 calendar days' activity, technical 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 90 day period, recovery plans (if needed), and explicit plans for the next 90 day period. Quarterly reviews shall be provided in person to the HSARPA Program Manager with a venue, duration, and format determined in consultation with the HSARPA Program Manager.

The First Quarterly Review will be used to obtain consensus between the customer and supplier for program requirements, methodology, and verification criteria. This will

provide the baseline for subsequent Program Design Review (PDR), Critical Design Review (CDR), and Final Test Report compliance.

Deliverable: CDRL DID 2 – Quarterly Report/Review

SOW 3. PDR

The contractor shall conduct a PDR 6 months after contract award. The objectives of the PDR shall include: reviewing progress prior to proceeding to detailed prototype design; quantifying system metrics and specifications, and analyzing and quantifying performance/cost trades.

The components of the PDR shall include the following:

- A. System Overview
- B. Concept of Operation
- C. Preliminary System Model
 - i. End to End Model of the Baseline Design
 - ii. Lifecycle Cost Model
- D. Test Analysis/Results
 - i. Breadboard test results
 - ii. Preliminary ROC curves
 - iii. Baseline Performance Metrics
 - iv. Alternative System Designs and Operation Concepts
- E. Design Approach
 - i. Hardware, Software
 - ii. Interfaces
 - iii. Algorithms/Signature Approach and Settings
- F. CDR Approach
 - i. Prototype Design Approach
 - ii. Risk Mitigation
 - iii. Brassboard Test Plans

Deliverable: CDRL DID 3 PDR

SOW 4. CDR

The contractor shall conduct a CDR no later than 12 months after contract award. The objectives of the CDR include: providing a detailed review of the proposed prototype design, ensuring that all performance/ cost metrics have been assessed, and reviewing plans for extensive prototype testing in Phase II and assess the suitability of the prototype design for field testing in Phase II.

The components of the CDR shall include the following:

- A. System Overview

- B. Concept of Operations
- C. Detailed Prototype Design
- D. Algorithm, Signatures and Libraries
- E. System Models
 - i. Performance
 - ii. Lifecycle Cost Model
- F. Test/Analysis
 - iii. Brassboard test results
 - iv. ROC Analysis
 - v. Performance Metrics
- G. Proposed Plans for Prototype Testing
 - vi. Prototype Fabrication
 - vii. Live Agent Challenges
 - viii. Extended False Alarm Evaluation
 - ix. Test Plans

Deliverable: CDRL DID 4 CDR

SOW 5. Final Report

The contractor shall provide a Final Report (FR) of the work performed during Phase I. The FR shall include, where appropriate, system performance predictions, estimates of cost of ownership, a description of the design trades that resulted in the selected design, and an enumeration of remaining unknowns and uncertainties. The FR shall be a cumulative, stand-alone document that describes the work of the entire Phase. It shall detail how the design concept was refined and why the refinement was undertaken. The FR shall include any technical data gathered, such as measurements taken, models developed, simulation results, and formulations developed. The FR shall also include “lessons learned” from the effort, recommendations for future research in this area, and a comprehensive and detailed account of all funds expended. The contractor shall also include in the FR a plan for executing Phase II, including: an experimental plan for developing and testing the proposed prototype system, an activity schedule, a budget that includes a detailed cost breakdown. The FR shall submit a detailed work plan that includes a Statement of Work, for conducting Phase II activities.

Deliverable: CDRL DID 5 – Final Report

SOW 6. Optics Design

The contractor shall conduct optical modeling including stray light modeling, filter selection, and system optical efficiency. The contractor shall provide an optical design for the proposed prototype system. The contractor shall design fabricate and test a breadboard/brassboard to characterize the performance of the proposed optical design in a lab environment.

SOW 7. Algorithm Development

The contractor shall perform mathematical analysis and develop calculations with the objective being to distinguish threats from clutter and or background. In the breadboard, these algorithms may be run in non real time and may not necessarily be embedded into a processor.

SOW 8. Electrical Design

The contractor shall provide the electrical design for the proposed prototype system consisting of the power system design, the signal processing, electro magnetic interference, and the housekeeping electronics. The electrical design shall have provisions external communications.

SOW 9. Mechanical Design

The contractor shall provide the mechanical design for the proposed prototype system consisting of an optical housing, flow system design, PMT mounting, LED mounting, IR mounting, thermal management, and system packaging.

SOW 10. Software Development

The contractor shall develop the algorithm, system initiation, system operation, system status, and system parameter configuration in a high level programming language for the breadboard. The software shall be developed to allow off line data analysis of the fabricated breadboard in Phase I. The software need not be implemented on an embedded processor for the proposed prototype system.

SOW 11. Test Plan

The contractor shall develop an overall test plan to demonstrate an incremental approach to validating the breadboard/brassboard design. A preliminary test plan shall be presented at the PDR with a final test plan presented at the CDR. The preliminary test plan shall provide the details of the tests to be conducted in Phase I. As a minimum, the test plan shall describe the test protocol and the level of detection (LOD) (100, 1,000 or 10,000 CFU(PFU)/L) for the spore, vegetative cell, and viral test challenges, and 0.05, 0.5 or 5 ng/L for toxin challenges. Data to support ROC curves shall be produced by reprocessing the test data at a range of software alarm thresholds settings. This will provide P(d) and LOD data. The Contractor shall develop ROC curves for the conditions below:

- For a slowly changing natural background, the probability of detection of a simulant event versus the false positive rate (FPR).
- For clutter bursts, the probability of detection (P_d) versus the probability of false positive (P_{fp}) based on equal-sized simulant and clutter bursts. The FPR and probability of false positives are related by the response time, T , with $FPR = (P_{fp})/T$.

Slowly changing natural background shall be accomplished by measuring ambient particles in at the contractors facilities. Clutter bursts shall be simulated by dispersing the clutter interferents designated by HSARPA, including mold spores, diesel soot, office dust, and standard backgrounds at various concentrations. Some preliminary stimulant measurements will be made in the contractor's wind tunnel, and the GFT facility will be used to measured the complete list of LBADS test simulants, including: *Bacillus subtilis* var. *globigii* (BG) and *Bacillus thuringiensis* (BT) for spores, a gram negative rod bacteria, MS2 for viruses, and ovalbumin for toxins. Threat concentrations will be measured using colony or plaque counts on the appropriate growth media.

The preliminary test plan shall identify the specific test facilities where each test will be conducted. The Final test plan shall be updated to include test-plan activities for Phase II and Post Phase II evaluation of prototypes. The test plan shall clearly identify roles and responsibilities between the government and contractor organization and shall identify the government test resources required. The test plan will be delivered to HSARPA as part of the first Quarterly Review.

SOW 12. Breadboard Material

The contractor shall be responsible for purchasing all required materials, with the exception of GFE specifically identified in the contract, to fabricate a breadboard for performance characterization testing.

Government Furnished Material

The following Government materials and information are necessary for our program:

- Access to government bio-aerosol test facilities,
- samples of test simulants and interferents particles for in-house tests,
- use of an Ink Jet Aerosol Generator,
- consultations with BAST developers, and
- access to government sponsored development of low cost plastic UV lenses.

Security Requirements

The efforts described in this SOW will be unclassified, but will contain work categorized as For Official Use Only (FOUO) or SECRET, in accordance with the Department of Homeland Security *Chemical and Biological Defense Security Classification Guide*. As part of the LBADS Program, Northrup Grumman personnel will be required to both access and generate SECRET information. This information will include specific details about classified pathogenic targets of interest to the Biological Countermeasures Portfolio, which are essential to the accurate design of aerosol detectors for surveillance against these targets. In addition, Northrup Grumman personnel will be expected to be able to attend meetings at the SECRET level. Therefore, a minimum of SECRET clearance is required for appropriate personnel with a need-to-know and certain facilities used in support of this project.

**COST-OPTIMIZED BIOLOGICAL
AGENT SENSOR SYSTEM (CO-BASS)**

PHASE I Contract Data Requirement List

Data Item Deliverables

1. Monthly Reports.

Monthly after contract signing

A brief (not more than one page) narrative report shall be electronically submitted to the HSARPA Program Manager within one week after the last day of each month. These reports shall describe the previous 30 calendar days' activity, technical progress achieved against project goals, difficulties encountered, recovery plans (if needed), and explicit technical plans for the next 30 day period.

2. Quarterly Reviews and Reports.

Every 3 months after contract signing

The Quarterly reports shall describe the previous 90 calendar days' activity, technical 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 90 day period, recovery plans (if needed), and explicit plans for the next 90 day period.

3. Preliminary Design Review.

6 months after contract signing

The objectives of the PDR shall include: reviewing progress prior to proceeding to detailed prototype design; quantifying system metrics and specifications, and analyzing and quantifying performance/cost trades.

The components of the PDR shall include the following:

- A. System Overview
- B. Concept of Operation
- C. Preliminary System Model
 - i. End to End Model of the Baseline Design
 - ii. Lifecycle Cost Model
- D. Test Analysis/Results
 - i. Breadboard test results
 - ii. Preliminary ROC curves
 - iii. Baseline Performance Metrics
 - iv. Alternative System Designs and Operation Concepts
- E. Design Approach

- i. Hardware, Software
 - ii. Interfaces
 - iii. Algorithms/Signature Approach and Settings
- F. CDR Approach
 - i. Prototype Design Approach
 - ii. Risk Mitigation
 - iii. Brassboard Test Plans

4. Critical Design Review.
12 months after contract signing

The objectives of the CDR include: providing a detailed review of the proposed prototype design, ensuring that all performance/ cost metrics have been assessed, and reviewing plans for extensive prototype testing in Phase II and assess the suitability of the prototype design for field testing in Phase II.

The components of the CDR shall include the following:

- A. System Overview
- B. Concept of Operations
- C. Detailed Prototype Design
- D. Algorithm, Signatures and Libraries
- E. System Models
 - i. Performance
 - ii. Lifecycle Cost Model
- F. Test/Analysis
 - iii. Brassboard test results
 - iv. ROC Analysis
 - v. Performance Metrics
- G. Proposed Plans for Prototype Testing
 - vi. Prototype Fabrication
 - vii. Live Agent Challenges
 - viii. Extended False Alarm Evaluation
 - ix. Test Plans

5. Final Report.
12 months after contract signing

The Final Report (FR) shall include, where appropriate, system performance predictions, estimates of cost of ownership, a description of the design trades that resulted in the selected design, and an enumeration of remaining unknowns and uncertainties. The FR shall be a cumulative, stand-alone document that describes the work of the entire Phase. It shall detail how the design concept was refined and why the refinement was undertaken.

The FR shall include any technical data gathered, such as measurements taken, models developed, simulation results, and formulations developed. The FR shall also include “lessons learned” from the effort, recommendations for future research in this area, and a comprehensive and detailed account of all funds expended. The contractor shall also include in the FR a plan for executing Phase II, including: an experimental plan for developing and testing the proposed prototype system, an activity schedule, a budget that includes a detailed cost breakdown. The FR shall submit a detailed work plan that includes a Statement of Work, for conducting Phase II activities.

DEPARTMENT OF DEFENSE CONTRACT SECURITY CLASSIFICATION SPECIFICATION				1. CLEARANCE AND SAFEGUARDING				
<i>(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)</i>				a. FACILITY CLEARANCE REQUIRED				
				SECRET				
				b. LEVEL OF SAFEGUARDING REQUIRED				
				SECRET				
2. THIS SPECIFICATION IS FOR: <i>(X and complete as applicable)</i>			3. THIS SPECIFICATION IS: <i>(X and complete as applicable)</i>					
X	a. PRIME CONTRACT NUMBER HSHQDC-06-C-00028		X	a. ORIGINAL <i>(Complete date in all cases)</i>		Date (YYYYMMDD) 20060227		
	b. SUBCONTRACT NUMBER NA			b. REVISED <i>(Supersedes all previous specs)</i>	Revision No.	Date (YYYYMMDD)		
	c. SOLICITATION OR OTHER NUMBER			Due Date (YYYYMMDD)		c. FINAL <i>(Complete Item 5 in all cases)</i>	Date (YYYYMMDD)	
4. IS THIS A FOLLOW-ON CONTRACT?			YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	NO. If Yes, complete the following: Classified material received or generated under _____ <i>(Preceding Contract Number)</i> is transferred to this follow-on contract.			
5. IS THIS A FINAL DD FORM 254?			YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	NO. If Yes, complete the following: In Response to the contractor's request dated _____, retention of the identified classified material is authorized for the period of _____			
6. CONTRACTOR <i>(Include Commercial and Government Entity (CAGE) Code)</i>								
a. NAME, ADDRESS, AND ZIP CODE Northrop Grumman Security Systems, LLC 1580 West Nursery Road Linthicum, Heights, MD 21090			B. CAGE CODE 1XSU7	C. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i> Defense Security Services (S11BA) 938 Elkridge Landing Rd Linthicum, MD 21090				
7. SUBCONTRACTOR								
a. NAME, ADDRESS, AND ZIP CODE NA			B. CAGE CODE	C. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i> NA				
8. ACTUAL PERFORMANCE								
a. NAME, ADDRESS, AND ZIP CODE Northrop Grumman Security Systems, LLC 1580 West Nursery Road Linthicum, Heights, MD 21090			B. CAGE CODE 1XSU7	C. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i> Defense Security Services (S11BA) 938 Elkridge Landing Rd Linthicum, MD 21090				
9. GENERAL IDENTIFICATION OF THE PROCUREMENT (U) ASSESS THE DESIGN CONVERGENCES TO THE LBADS OVERALL GOALS AND OBJECTIVES FOR SCIENCE & TECHNOLOGY (S&T) DIRECTORATE.								
10. THIS CONTRACT WILL REQUIRE ACCESS TO:			YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:			
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION				<input checked="" type="checkbox"/>	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		YES	NO
b. RESTRICTED DATA				<input checked="" type="checkbox"/>	b. RECEIVE CLASSIFIED DOCUMENTS ONLY			<input checked="" type="checkbox"/>
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION				<input checked="" type="checkbox"/>	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL		<input checked="" type="checkbox"/>	
d. FORMERLY RESTRICTED DATA				<input checked="" type="checkbox"/>	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE			<input checked="" type="checkbox"/>
e. INTELLIGENCE INFORMATION:				<input checked="" type="checkbox"/>	e. PERFORM SERVICES ONLY			<input checked="" type="checkbox"/>
(1) Sensitive Compartmented Information (SCI)				<input checked="" type="checkbox"/>	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES			<input checked="" type="checkbox"/>
(2) Non-SCI				<input checked="" type="checkbox"/>	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER			<input checked="" type="checkbox"/>
f. SPECIAL ACCESS INFORMATION				<input checked="" type="checkbox"/>	h. REQUIRE A COMSEC ACCOUNT			<input checked="" type="checkbox"/>
g. NATO INFORMATION				<input checked="" type="checkbox"/>	i. HAVE TEMPEST REQUIREMENTS			<input checked="" type="checkbox"/>
h. FOREIGN GOVERNMENT INFORMATION				<input checked="" type="checkbox"/>	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS			<input checked="" type="checkbox"/>
i. LIMITED DISSEMINATION INFORMATION				<input checked="" type="checkbox"/>	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE			<input checked="" type="checkbox"/>
j. FOR OFFICIAL USE ONLY INFORMATION			<input checked="" type="checkbox"/>		l. OTHER <i>(Specify)</i>			<input checked="" type="checkbox"/>
k. OTHER				<input checked="" type="checkbox"/>				

12. PUBLIC RELEASE. Any information (classified or unclassified) pertaining to this contract shall not be released for public dissemination except as provided by the Industrial Security Manual or unless it has been approved for public release by appropriate U.S. Government authority. Proposed public releases shall be submitted for approval prior to release.

Direct Through (Specify)

To the Directorate for Freedom of Information and Security Review, Office of the Assistant Secretary of Defense (Public Affairs)* for review. *In the case of non-DoD User agencies, requests for disclosure shall be submitted to that agency.

13. SECURITY GUIDANCE. The security classification guidance needed for this classified effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes: to challenge the guidance or the classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. (Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any documents/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.)

Ref. Item 8a. Actual Performance Location – 7055 Troy Hill Drive, Elkridge, MD Cleared Off –Site

Ref. Item 10j. FOUO: The contractor is responsible for handling and marking FOUO information in accordance with DHS Directive (MD 11042.1) "Safeguarding Sensitive but Unclassified (For Official Use Only) Information." dated January 6, 2005. Furthermore, DHS contractors must sign a special Non-Disclosure Agreement before receiving access to unclassified FOUO information. Contractors with questions on handling DHS FOUO shall contact DHS OS ASD at (202) 772-5012.

Ref Item 11c. The contractor shall use Department of Homeland Security Chemical and Biological Defense Security classification Guide for classification of information associated with this effort. All classified information shall be marked in accordance with the NISPOM. The ISOO Pamphlet on "Marking Classified National Security Information" dated March 25, 2003, may be used as a guide on the proper marking of classified information. Questions relating to Marking Classified National Security Information can be addressed to DHS Office of Security Administrative Security Division, at telephone (202) 358-1438.

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to ISM requirements, are established for this contract. (If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.)

Yes No

15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. (If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.)

Yes No

16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL

JOSE J. SALAZAR

b. TITLE

Program Manager Industrial Security

c. TELEPHONE (Include Area Code)

(202) 772-5073

d. ADDRESS (Include Zip Code)

DEPARTMENT OF HOMELAND SECURITY
Office of Security, 7th & D Street S. W.
Washington, DC 20538

17. REQUIRED DISTRIBUTION

a. CONTRACTOR
 c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
 d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
 e. ADMINISTRATIVE CONTRACTING OFFICER
 f. OTHERS AS NECESSARY

e. SIGNATURE

Jose Salazar

The Contractor asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data or computer software should be restricted:

Technical Data or Computer Software to be Furnished With Restrictions*		Basis for Assertion**	Asserted Rights Category***	Name of Person Asserting Restriction****
Architecture for detector multiplexing to obtain multiple fluorescence wavebands with a single detector.		Developed exclusively at private expense.	Limited Rights	Northrop Grumman Systems Corporation, Electronic Systems

* If the assertion is applicable to items, components, or processes developed at private expense, identify both the data and each such item, component, or process.

** Generally, the development of an item, component, or process at private expense, either exclusively or partially, is the only basis for asserting restrictions on the Government's rights to use, release, or disclose technical data pertaining to such items, components, or processes. Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the Government's rights should be restricted.

*** Enter asserted rights category, rights in SBIR data generated under another contract, limited or under this or a prior contract, or specifically negotiated licenses).

**** Corporation, individual, or other person, as appropriate.

DATE:

02 March 2006

PRINTED NAME AND TITLE:

Janice L. Pesyna, Senior Contracts Representative

SIGNATURE:



The Contractor asserts for itself, or the persons identified below, that the Government's rights to use, release, or disclose the following technical data or computer software should be restricted:

Technical Data or Computer Software to be Furnished With Restrictions*	Basis for Assertion**	Asserted Rights Category***	Name of Person Asserting Restriction****
BioQuick Software including ROT/DOT algorithms	Developed exclusively at private expense.	Limited Rights	Hach Homeland Securities Technology
Air Stream/Nozzle and Flow Designs	Developed exclusively at private expense.	Limited Rights	Hach Homeland Securities Technology
Scalper/Concentrators designs	Developed exclusively at private expense.	Limited Rights	Hach Homeland Securities Technology
DOT algorithms	Developed partially at private expense.	Government Purpose Rights	Hach Homeland Securities Technology

* If the assertion is applicable to items, components, or processes developed at private expense, identify both the data and each such item, component, or process.

** Generally, the development of an item, component, or process at private expense, either exclusively or partially, is the only basis for asserting restrictions on the Government's rights to use, release, or disclose technical data pertaining to such items, components, or processes. Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the Government's rights should be restricted.

*** Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited or government purpose rights under this or a prior contract, or specifically negotiated licenses).

**** Corporation, individual, or other person, as appropriate.

DATE: 29 August 2005

PRINTED NAME AND TITLE: Mike Carrabba, Director - Air Systems
Hach Homeland Security Technologies

SIGNATURE:

