

SOLICITATION, OFFER AND AWARD		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)		RATING DO-C9	PAGE OF PAGES 1 24
2. CONTRACT NUMBER	3. SOLICITATION NUMBER N00173-07-R-CR03	4. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	5. DATE ISSUED 03/08/07	6. REQUISITION/PURCHASE NUMBER	
7. ISSUED BY Contracting Officer Naval Research Laboratory ATTN: Code 3220.CR Washington, DC 20375		CODE N00173	8. ADDRESS OFFER TO (If other than Item 7)		

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 3 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in Building 222, Room 115 until 4:00 pm local time 04/10/07
(Hour) (Date)

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME Alan W Crupi	B. TELEPHONE (NO COLLECT CALLS)		C. E-MAIL ADDRESS Wayne.crupi@nrl.navy.mil
		AREA CODE 202	NUMBER 767-3595	

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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52.232-8)	10 CALENDAR DAYS (%)	20 CALENDAR DAYS (%)	30 CALENDAR DAYS (%)	CALENDAR DAYS (%)
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14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR	CODE	FACILITY	16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)
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15B. TELEPHONE NUMBER	15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE. <input type="checkbox"/>	17. SIGNATURE	18. OFFER DATE
AREA CODE NUMBER EXT.			

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION	
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c)) <input type="checkbox"/> 41 U.S.C. 253(c) ()		23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	
24. ADMINISTERED BY (If other than Item 7) CODE		25. PAYMENT WILL BE MADE BY CODE	
26. NAME OF CONTRACTING OFFICER (Type or print)		27. UNITED STATES OF AMERICA (Signature of Contracting Officer)	
		28. AWARD DATE	

**PART I - THE SCHEDULE
SECTION B
SUPPLIES OR SERVICES AND PRICES/COSTS**

B-1 SUPPLIES/SERVICES AND COSTS

ITEM NUMBER	SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	ESTIMATED COST PLUS FIXED FEE
0001	The Contractor shall provide the research and development in accordance with Section C-1.	\$	\$	\$
0002	Data in accordance with Exhibit A (DD 1423).	NSP *	NSP	NSP
TOTAL ESTIMATED COST PLUS FIXED FEE		\$	\$	\$

* Not Separately Priced

NOTICE TO OFFERORS: In addition to inserting the estimated cost and fixed fee for the base year above, the estimated cost and fixed fee for each optional extension of the term of the contract are to be inserted in Section H.

**SECTION C
DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK**

C-1 STATEMENT OF WORK

The work and services to be performed hereunder shall be subject to the requirements and standards contained in Attachment (1), Statement of Work, with Exhibit A, Contract Data Requirements List, and all other Attachments cited in Section J, which are incorporated by reference into Section C.

C-2 REQUIREMENTS FOR ON-SITE CONTRACTORS

For those portions of the work under this contract performed at any NRL site, the contractor shall comply with the Requirements for On-Site Contractors dated 13 April 2006 which are hereby incorporated by reference. The full text is available at <http://heron.nrl.navy.mil/contracts/11onsite.htm>

**SECTION D
PACKAGING AND MARKING**

D-1 PACKAGING AND MARKING

Preservation, packaging, packing and marking of all deliverable contract line items must conform to normal commercial packing standards to assure safe delivery at destination.

**SECTION E
INSPECTION AND ACCEPTANCE**

E-1 INSPECTION AND ACCEPTANCE CLAUSES INCORPORATED BY REFERENCE

FAR CLAUSE TITLE

52.246-9 - Inspection Of Research And Development (Short Form) (APR 1984)

DFARS CLAUSE TITLE

252.246-7000 - Material Inspection And Receiving Report (MAR 2003)

E-2 INSPECTION AND ACCEPTANCE

Inspection and acceptance of the final delivery will be accomplished by the Technical Manager (TM) or Contracting Officer Representative (COR) designated in Section G of this contract. Inspection and acceptance will be performed at the Naval Research Laboratory, Washington DC 20375-5320.

**SECTION F
DELIVERIES OR PERFORMANCE**

F-1 DELIVERIES OR PERFORMANCE CLAUSES INCORPORATED BY REFERENCE:

FAR CLAUSE TITLE

52.242-15 - Stop-Work Order (AUG 1989) - Alternate I (APR 1984)

52.247-34 - F.O.B. Destination (NOV 1991)

F-2 PERIOD AND PLACE OF PERFORMANCE

(a) The term of this contract is from date of contract award through 12 months with four (4) options that will extend the period of performance for an additional 12 months each, if exercised.

(b) The principal place of performance of this contract shall be Naval Research Laboratory, Washington, D.C. 20375.

SECTION G
CONTRACT ADMINISTRATION DATA

G-1 PROCURING OFFICE REPRESENTATIVE

In order to expedite administration of the contract, the Administrative Contracting Officer (ACO) will direct inquiries to the appropriate office listed below. Please do not direct routine inquiries to the person listed in Item 20A on Standard Form 26.

Security Matters- Contracting Officer for Security, Code 1221, (202) 767-2240, DSN 297-2240, email security-group@nrl.navy.mil

Safety Matters- Head Safety Branch, Code 3540, (202) 767-2232, DSN 297-2232, email safety@nrl.navy.mil

Patent Matters-Associate Counsel (Intellectual Property), Code 1008.2, (202) 404-1552, DSN 297-1552, email patents@nrl.navy.mil

Release of Data-Public Affairs Officer, Code 1030 (202) 767-2541, DSN 297-2541, email publicaffairs@nrl.navy.mil

G-2 CONTRACTING OFFICER'S REPRESENTATIVE (COR) - FUNCTIONS AND LIMITATIONS

* is hereby designated the cognizant COR who will represent the Contracting Officer in the technical monitoring and administration of this contract. In accordance with Section E, the COR will accomplish inspection and acceptance of deliverables under this contract. The COR is not otherwise authorized to make any representations or commitments of any kind on behalf of the Contracting Officer or the Government. The COR does not have the authority to alter the Contractor's obligations or change the specifications in the contract. If, as a result of technical discussions, it is desirable to alter contract obligations or the statement of work, a modification must be issued in writing and signed by the Contracting Officer. Unless terminated sooner, this appointment is effective for the period of performance of this contract including any options, if exercised. COR authority may not be redelegated. No change in COR assignment shall be made without written notice by the Contracting Officer, who will modify the contract to reflect the change of COR assignment.

*(* To be completed at time of award)*

G-3 TECHNICAL DIRECTION MEMORANDUM (TDM)

- (a) For the purposes of this clause, technical direction includes the following:
- (1) Direction to the Contractor which shifts work emphasis between work areas or tasks, requires pursuit of certain lines of inquiry, fills in details or otherwise describes work which will accomplish the objectives described in the statement of work;
 - (2) Guidelines to the Contractor, which assist in interpretation of drawings, specifications or technical portions of, work description.
- (b) Technical instructions must be within the scope of work stated in the contract. Technical instructions may not be used to:

- (1) Assign additional work under the contract;
 - (2) Direct a change as defined in the contract clause entitled "Changes";
 - (3) Increase or decrease the estimated contract cost, the fixed fee, or the time required for contract performance; or
 - (4) Change any of the terms, conditions or specifications of the contract
- (c) The TDM shall be written by the Contracting Officer's Representative (COR), with the original given to the Contractor and a copy retained in the CORs file. Technical direction may be issued orally only in emergency situations. If technical direction is issued orally, a TDM must follow within two (2) working days from the date of the oral direction. Amendments, corrections, or changes to TDMs shall also be in written format and shall include all the information set forth in paragraph (e) below.
- (d) A TDM shall be considered issued when the Government deposits it in the mail, or if transmitted by other means, when it is physically delivered to the contractor.
- (e) TDMs shall include, but not be limited to, the following information:
- (1) Date of TDM,
 - (2) Contract Number,
 - (3) Reference to the relevant portion or item in the Statement of Work,
 - (4) The specific technical direction or clarification, and
 - (5) The signature of the COR.
- (f) CORs shall retain all files containing TDMs for a period of two (2) years after the final contract completion date.
- (g) The only individual authorized in any way to amend or modify any of the terms of this contract shall be the Contracting Officer. When, in the opinion of the Contractor, any technical direction calls for effort outside the scope of the contract or inconsistent with this special provision, the Contractor shall notify the Contracting Officer in writing within ten (10) working days after its receipt.

G-4 SUBCONTRACTORS/CONSULTANTS

- (a) Advance notification or requests for consent pursuant to the contract clause entitled "Subcontracts" (FAR 52.244-2) shall be directed to the cognizant administrative contracting officer (ACO).
- (b) The following subcontractors/consultants have been identified in the Contractor's proposal as necessary for performance of this contract:

Subcontractor/Consultant Name	Estimated Cost
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(Paragraph (b) will be included and filled in at time of award if subcontractor/consultants are proposed by the successful offeror)

G-5 INCREMENTAL FUNDING

Pursuant to the Limitation of Funds clause (FAR 52.232-22), the total amount allotted to this contract is \$ * and it is estimated that this amount is sufficient for contract performance through * .

*(*this provision will be included and completed at time of award, if applicable)*

G-6 INFORMATIONAL SUBLINE ITEMS

It is anticipated that the research and development services performed under this contract will be paid for from multiple sources of funds. Informational subline items will be established as necessary to identify each accounting citation classification.

G-7 PAYMENT INSTRUCTIONS FOR MULTIPLE ACCOUNTING CLASSIFICATION CITATIONS (COST-REIMBURSEMENT)

If there is more than one ACRN within a contract line item, the payment office will make payment using the ACRN(s) cited on the contractor's invoice.

G-8 PAYMENT AND VOUCHER INSTRUCTIONS

In accordance with the contract clause, *Electronic Submission of Payment Requests* (DFARS 252.232-7003), the contractor must submit requests for payment electronically in the Wide Area Workflow (WAWF). It may be accessed at its homepage <https://wawf.eb.mil/>. If the contractor has not registered with WAWF, instructions for doing so may be accessed at: <https://wawf.eb.mil/vreg.htm>. The designated Electronic Business (EB) point of contact in the Central Contractor Registration (CCR) is the person responsible for activating the company's CAGE code in WAWF by calling 1-866-618-5988.

The following information is applicable to vouchers submitted under this contract using WAWF:

Under "Create New Document" select "Cost Voucher". When you enter the contract number, some of the other fields in the document may fill out automatically.

Use the appropriate Item Number stated in Section B of the contract (e.g., 0001, 0002 or 0001AA, 0001AB, etc).

If the contract contains multiple accounting classification reference numbers (ACRNs), the ACRN(s) from which payment is to be made must be cited on the voucher. If more than one ACRN is cited, the voucher must indicate the amounts to be paid from each. Information may be obtained from the COR to assist the contractor in determining the appropriate ACRNs from which payment is to be made.

ROUTING TABLE DATA REQUIRED FOR SUBMISSION OF INVOICE TO WAWF	
Document Type	Cost Voucher
Contract Number	N00173-07-
Issued By DoDAAC	N00173
Admin By DoDAAC	
Pay DoDAAC	
LPO	N00173
Ship To DoDAAC	N00173 Extension
Service Acceptor	N00173 Extension
DCAA Auditor DoDAAC	
CAGE Code	

IMPORTANT: When submitting vouchers using WAWF, utilize the “**Send More Email Notifications**” function in WAWF. This additional notification is important to ensure the Government Acceptor is aware that the invoice documents have been submitted into the WAWF system.

Send More Email Notifications	
Acceptor email	@nrl.navy.mil

Pursuant to DFARS 242.803(b)(i)(c), if the cognizant Government auditor has notified the contractor of its authorization to do so, the contractor may submit vouchers under this contract direct to the payment office. Such authorization does not extend to the first and final vouchers.

For assistance with the WAWF system, you may contact the Navy WAWF Assistance Line :
1-800-559-WAWF(9293).

SECTION H SPECIAL CONTRACT REQUIREMENTS

H-1 TYPE OF CONTRACT

This is a * .

*(*To be completed at time of award)*

H-2 ONR 5252.237-9705 - KEY PERSONNEL (DEC 88)

(a) The Contractor agrees to assign to the contract tasks those persons whose resumes were submitted with its proposal and who are necessary to fulfill the requirements of the contract as "key personnel". No substitutions may be made except in accordance with this clause.

(b) The Contractor understands that during the first ninety (90) days of the contract performance period, no personnel substitutions will be permitted unless these substitutions are unavoidable because of the incumbent's sudden illness, death or termination of employment. In any of these events, the Contractor shall promptly notify the Contracting Officer and provide the information described in paragraph (c) below. After the initial ninety (90) day period the Contractor must submit to the Contracting Officer all proposed substitutions, in writing, at least thirty (30) days in advance (sixty (60) days if security clearance must be obtained) of any proposed substitution and provide the information required by paragraph (c) below.

(c) Any request for substitution must include a detailed explanation of the circumstances necessitating the proposed substitution, a resume for the proposed substitute, and any other information requested by the Contracting Officer. Any proposed substitute must have qualifications equal to or superior to the qualifications of the incumbent. The Contracting Officer or his/her authorized representative will evaluate such requests and promptly notify the Contractor of his/her approval or disapproval thereof.

(d) In the event that any of the identified key personnel cease to perform under the contract and the substitute is disapproved, the contract may be immediately terminated in accordance with the Termination clause of the contract.

The following are identified as key personnel: *

(*To be completed at time of award)

Labor Category	First/M/Last Name
Program Manager	*
Sr. Scientist/Engineer (Task 1)	*
Sr. Scientist/Engineer (Task 2)	*
Sr. Scientist/Engineer (Task 3)	*
Sr. Scientist/Engineer (Task 4)	*

H-3 ONR 5252.216-9706 - LEVEL OF EFFORT (DEC 88)

- (a) The Contractor agrees to provide the total level of effort specified in the next sentence in performance of the work described in this contract. The total level of effort for performance of this contract shall be 60,000 hours for the base year and 60,000 for each option, if exercised, of direct labor, including subcontractor direct labor for those subcontractors specifically identified in the Contractor's proposal as having hours included in the proposed level of effort. A breakdown of labor categories and hours is set forth in paragraph (k) below.
- (b) The level of effort for this contract shall be expended at an average rate of 5000 hours per month. It is understood and agreed that the rate of hours per month may fluctuate in pursuit of the technical objective, provided such fluctuation does not result in the use of the total hours of effort prior to the expiration of the term of the contract.
- (c) The Contractor is required to notify the Contracting Officer when any of the following situations occur, or are anticipated to occur: If during any three consecutive months the monthly average is exceeded by 25% or, if at any time it is forecast that during the last three months of the contract less than 50% of the monthly average will be used during any given month; or, when 85% of the total level of effort has been expended.
- (d) If, during the term of the contract, the Contractor finds it necessary to accelerate the expenditure of direct labor to such an extent that the total hours of effort specified would be used prior to the expiration of the term, the Contractor shall notify the Contracting Officer in writing, setting forth the acceleration required, the probable benefits which would result, and an offer to undertake the acceleration at no increase in the estimated cost or fixed fee together with an offer setting forth a proposed level of effort, cost breakdown, and proposed fixed fee for continuation of the work until expiration of the term hereof. The offer shall provide that the work proposed will be subject to the terms and conditions of this contract and any additions or changes required by then current law, regulations, or directives, and that the offer, with a written notice of acceptance by the Contracting Officer, shall constitute a binding contract. The Contractor shall not accelerate any effort until receipt

of such written approval by the Contracting Officer. Any agreement to accelerate will be formalized

TASK 3– R&D Support of Surface, Materials and Nano Science and Engineering Studies

LABOR CATEGORY	BASE	OPTION I	OPTION II	OPTION III	OPTION IV	TOTAL HOURS
Program Manager	250	250	250	250	250	1250
Sr. Scientist/Engineer	13000	13000	13000	13000	13000	65000
Technician	790	790	790	790	790	3950
Total Hours	14040	14040	14040	14040	14040	70200

TASK 4 – Development of Physical, Chemical and Biological Detection Systems for DoD and Dual-Use Applications

LABOR CATEGORY	BASE	OPTION I	OPTION II	OPTION III	OPTION IV	TOTAL HOURS
Program Manager	500	500	500	500	500	2500
Sr. Scientist/Engineer	8420	8420	8420	8420	8420	42100
Scientist/Engineer	20900	20900	20900	20900	20900	104500
Technician	5680	5680	5680	5680	5680	28400
Total Hours	35500	35500	35500	35500	35500	177500

Estimated Total Hours of Effort	BASE	OPTION I	OPTION II	OPTION III	OPTION IV	
	60000	60000	60000	60000	60000	300000

H-4 ONR 5252.235-9714 - REPORT PREPARATION (JUL 2005)

Scientific or technical reports prepared by the Contractor and deliverable under the terms of this contract will be prepared in accordance with format requirements contained in ANSI/NISO Z39.18-2005, Scientific and Technical Reports: Elements, Organization, and Design.

[NOTE: All NISO American National Standards are available as free, downloadable pdf(s) at <http://www.niso.org/standards/index.html>. NISO standards can also be purchased in hardcopy form from NISO Press Fulfillment, P. O. Box 451, Annapolis Junction, MD 20701-0451 USA. Telephone U.S. and Canada: (877) 736-6476; Outside the U.S. and Canada: 301-362-6904 fax: 301-206-9789.]

H-5 ELECTRONIC AND INFORMATION TECHNOLOGY (EIT)

In accordance with Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d), all EIT supplies and services provided under this contract must comply with the applicable accessibility standards issued by the Architectural and Transportation Barriers Compliance Board at 36 CFR part 1194 (see FAR Subpart 39.2). Electronic and information technology (EIT) is defined at FAR 2.101.

H-6 OPTION TO EXTEND THE TERM OF THE CONTRACT

This contract shall be renewable at the unilateral option of the Government by the Contracting Officer giving written notice of renewal to the Contractor within the existing term of the contract. The Government may exercise its option to renew the contract a total of four (4) times and each such renewal shall extend the term of the contract by twelve (12) months. The Contractor agrees that performance under each such renewal shall be accomplished in accordance with all of the terms and conditions of this contract and at the estimated cost and fixed fee set forth below:

First Option (If exercised)

Estimated Cost	\$
Fixed Fee	\$
Estimated Cost Plus Fixed Fee	\$

Second Option (If exercised)

Estimated Cost	\$
Fixed Fee	\$
Estimated Cost Plus Fixed Fee	\$

Third Option (If exercised)

Estimated Cost	\$
Fixed Fee	\$
Estimated Cost Plus Fixed Fee	\$

Fourth Option (If exercised)

Estimated Cost	\$
Fixed Fee	\$
Estimated Cost Plus Fixed Fee	\$

H-7 ON-SITE USE OF GOVERNMENT PROPERTY

It is anticipated that Government property will be used by the contractor's personnel in the performance of that portion of the contract performed on-site at the U.S. Naval Research Laboratory (NRL) including any of its field sites. Such use will be on a rent free basis and all such property shall be considered to remain in the possession and control of the NRL for property responsibility and accountability purposes.

H-8 PROTECTION OF HUMAN SUBJECTS

It is understood and agreed that in the performance of this contract the Contractor shall comply with the provisions of the following directives/regulations:

- (a) 32, Code of Federal Regulations (CFR) Part 219, *Protection of Human Subjects*;
- (b) DoD Directive 3216.2, *Protection of Human Subjects and Adherence to Ethical Standards in DoD Supported Research*, as amended;
- (c) 45 Code of Federal Regulations (CFR) Part 46, *Protection of Human Subjects*, Department of Health and Human Services; and
- (d) SECNAV INST 3900.39 (series), *Human Research Protection Program*

H-9 REPRESENTATIONS AND CERTIFICATIONS

The Contractor's ORCA Representations and Certifications valid from * to * are incorporated herein by reference. The DFARS and Contract Specific Representations and Certifications dated * are hereby incorporated by reference.

(* To be completed at time of award)

PART II - CONTRACT CLAUSES
SECTION I
CONTRACT CLAUSES

I-1 FAR 52.252-2 - CLAUSES INCORPORATED BY REFERENCE (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://www.acqnet.gov/far>
<http://heron.nrl.navy.mil/contracts/home.htm>

a. FEDERAL ACQUISITION REGULATION CLAUSES

FAR CLAUSE TITLE

- 52.202-1 - Definitions (JUL 2004)
- 52.203-3 - Gratuities (APR 1984)
- 52.203-5 - Covenant Against Contingent Fees (APR 1984)
- 52.203-6 - Restrictions On Subcontractor Sales To The Government (SEP 2006)
- 52.203-7 - Anti-Kickback Procedures (JUL 1995)
- 52-203-8 - Cancellation, Rescission, 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 (JUL 2006)
- 52.204-9 - Personal Identity Verification Of Contractor Personnel (NOV 2006)
- 52.209-6 - Protecting The Government's Interest When Subcontracting With Contractors Debarred, Suspended, Or Proposed For Debarment (SEP 2006)
- 52.211-15 - Defense Priority And Allocation Requirements (SEP 1990)
- 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)
- 52.215-11 - Price Reduction For Defective Cost Or Pricing Data - Modifications (OCT 1997)
- 52.215-12 - Subcontractor Cost Or Pricing Data (OCT 1997)
- 52.215-13 - Subcontractor Cost Or Pricing Data Modifications (OCT 1997)
- 52.215-14 - Integrity Of Unit Prices (OCT 1997)
- 52.215-15 - Pension Adjustments And Asset Reversions (OCT 2004)
- 52.215-17 - Waiver Of Facilities Capital Cost Of Money (OCT 1997)
(will be included if the successful offeror does not propose facilities capital cost of money)
- 52.215-18 - Reversion Or Adjustment Of Plans For Post-Retirement Benefits (PRB) Other Than Pensions (JUL 2005)
- 52.215-19 - Notification Of Ownership Changes (OCT 1997)
- 52.215-21 - Requirements For Cost Or Pricing Data Or Information Other Than Cost or Pricing Data -Modifications (OCT 1997)
- 52.216-7 - Allowable Cost And Payment (DEC 2002) (fill in 30th)

- 52.216-8 - Fixed-Fee (MAR 1997)
- 52.219-4 - Notice Of Price Evaluation Preference For HUBZone Small Business Concerns (JUL 2005) Offeror elects to waive the evaluation preference.
- 52.219-6 - Notice Of Total Small-Business Set-Aside (JUN 2003)
- 52.219-8 - Utilization Of Small Business Concerns (MAY 2004)
- 52.219-14 - Limitations On Subcontracting (DEC 1996)
- 52.222-2 - Payment For Overtime Premiums (JUL 1990) -The Use Of Overtime Is Authorized Under This Contract If The Overtime Premium Does Not Exceed "0"
- 52.222-21 - Prohibition Of Segregated Facilities (FEB 1999)
- 52.222-26 - Equal Opportunity (APR 2002)
- 52.222-35 - Equal Opportunity For Special Disabled Veterans, Veterans Of The Vietnam Era, And Other Eligible Veterans (SEP 2006)
- 52.222-36 - Affirmative Action For Workers With Disabilities (JUN 1998)
- 52.222-37 - Employment Reports On Special Disabled Veterans, Veterans Of The Vietnam Era, And Other Eligible Veterans (SEP 2006)
- 52.222-39 - Notification Of Employee Rights Concerning Payment Of Union Dues Or Fees (DEC 2004)
- 52.223-3 - Hazardous Material Identification And Material Safety Data (JAN 1997)
- 52.223-5 - Pollution Prevention And Right-To-Know Information (AUG 2003)
- 52.223-6 - Drug-Free Workplace (MAY 2001)
- 52.223-10 - Waste Reduction Program (AUG 2000)
- 52.223-14 - Toxic Chemical Release Reporting (AUG 2003)
- 52.225-13 - Restrictions On Certain Foreign Purchases (FEB 2006)
- 52.227-1 - Authorization And Consent (JUL 1995)- Alternate I (APR 1984)
- 52.227-2 - Notice And Assistance Regarding Patent And Copyright Infringement (AUG 1996)
- 52.227-10 - Filing Of Patent Application- Classified Subject Matter (APR 1984)
- 52.227-11 - Patent Rights - Retention By The Contractor (Short Form) (JUN 1997)
(will be included if the successful offeror is a small business or a non-profit organization)
- 52.228-7 - Insurance - Liability To Third Persons (MAR 1996)
- 52.232-9 - Limitation On Withholding Of Payments (APR 1984)
- 52.232-17 - Interest (JUN 1996)
- 52.232-20 - Limitation Of Cost (APR 1984) *(Applicable when the contract or task order is fully funded)*
- 52.232-22 - Limitation Of Funds (APR 1984) *(Applicable when the contract or task order is not fully funded)*
- 52.232-23 - Assignment Of Claims (JAN 1986) Alternate I (APR 1984)
- 52.232-25 - Prompt Payment (OCT 2003)
- 52.232-25 - Prompt Payment (OCT 2003) Alternate I (FEB 2002)
- 52.232-33 - Payment By Electronic Funds Transfer-Central Contractor Registration (OCT 2003)
- 52.233-1 - Disputes (JUL 2002)
- 52.233-3 - Protest After Award (AUG 1996) - Alternate I (JUN 1985)
- 52.233-4 - Applicable Law For Breach Of Contract Claim (OCT 2004)
- 52.237-2 - Protection Of Government Buildings, Equipment And Vegetation (APR 1984)
- 52.237-3 - Continuity Of Services (JAN 1991)
- 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 - Changes - Cost-Reimbursement (AUG 1987) - Alternate V (APR 1984)
- 52.243-6 - Change Order Accounting (APR 1984)
- 52.243-7 - Notification Of Changes (APR 1984) fill in 30
- 52.244-2 - Subcontracts (AUG 1998) - Alternate I (MAR 2005)
- 52.244-5 - Competition In Subcontracting (DEC 1996)
- 52.244-6 - Subcontracts For Commercial Items (SEP 2006)
- 52.245-5 - Government Property (Cost-Reimbursement, Time-And-Material, Or Labor-Hour Contracts) (MAY 2004)
- 52.245-9 - Use And Charges (AUG 2005)
- 52.246-23 - Limitation Of Liability (FEB 1997)
- 52.246-25 - Limitation Of Liability - Services (FEB 1997)
- 52.247-1 - Commercial Bill Of Lading Notations (FEB 2006)
- 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)
- 52.252-6 - Authorized Deviations in Clauses (APR 1984)(fill in Defense Federal Acquisition Regulation Supplement (48 CFR Chapter 2))
- 52.253-1 - Computer Generated Forms (JAN 1991)

b. DEPARTMENT OF DEFENSE FEDERAL ACQUISITION REGULATION CLAUSES

DFARS CLAUSE TITLE

- 252.201-7000 - Contracting Officer's Representative (DEC 1991)
- 252.203-7001 - Prohibition On Persons Convicted Of Fraud Or Other Defense Contract Related Felonies (DEC 2004)
- 252.203-7002 - Display Of DoD Hotline Poster (DEC 1991)
- 252.204-7000 - Disclosure Of Information (DEC 1991)
- 252.204-7003 - Control Of Government Personnel Work Product (APR 1992)
- 252.204-7004 - Alternate A (NOV 2003)
- 252.204-7005 - Oral Attestation Of Security Responsibilities (NOV 2001)
- 252.205-7000 - Provision Of Information To Cooperative Agreement Holders (DEC 1991)
- 252.209-7004 - Subcontracting With Firms That Are Owned Or Controlled By The Government Of A Terrorist Country (MAR 1998)
- 252.211-7006 - Radio Frequency Identification (MAY 2006)
- 252.215-7000 - Pricing Adjustments (DEC 1991)
- 252.215-7002 - Cost Estimating System Requirements (DEC 2006)
- 252.223-7004 - Drug-Free Work Force (SEP 1988)
- 252.223-7006 - Prohibition On Storage And Disposal Of Toxic And Hazardous Materials (APR 1993)
- 252.225-7001 - Buy American Act And Balance Of Payments Program (JUN 2005)
- 252.225-7002 - Qualifying Country Sources As Subcontractors (APR 2003)
- 252.225-7012 - Preference For Certain Domestic Commodities (JUN 2004)
- 252.225-7013 - Duty Free Entry (OCT 2006)
- 252.225-7021 - Trade Agreements (NOV 2006)

- 252.225-7031 - Secondary Arab Boycott Of Israel (JUN 2005)
- 252.225-7043 - Antiterrorism/Force Protection Policy For Defense Contractors Outside The United States (MAR 2006) (fill in : Naval Criminal Investigative Service (NCIS), Code 24, telephone, DSN 228-9113 or commercial (202)433-9113)
- 252.226-7001 - Utilization of Indian Organizations, Indian-Owned Economic Enterprises, And Native Hawaiian Small Business Concerns (OCT 2003)
- 252.227-7000 - Non Estoppel (OCT 1966)
- 252.227-7001 - Release Of Past Infringement (AUG 1984)
- 252.227-7013 - Rights In Technical Data -- Noncommercial Items (NOV 1995) - Alternate I (JUN 1995)
- 252.227-7016 - Rights In Bid Or Proposal Information (JUN 1995)
- 252.227-7025 - Limitations On The Use Or Disclosure Of Government-Furnished Information Marked With Restrictive Legends (JUN 1995)
- 252.227-7026 - Deferred Delivery Of Technical Data Or Computer Software (APR 1988)
- 252.227-7027 - Deferred Ordering Of Technical Data Or Computer Software (APR 1988)
- 252.227-7030 - Technical Data--Withholding Of Payment (MAR 2000)
- 252.227-7034 - Patents--Subcontracts (APR 1984)
- 252.227-7037 - Validation Of Restrictive Markings On Technical Data (SEP 1999)
- 252.227-7039 - Patents--Reporting Of Subject Inventions (APR 1990)
- 252.232-7003 - Electronic Submission Of Payment Requests (MAY 2006)
- 252.232-7010 - Levies On Contract Payments (DEC 2006)
- 252.235-7010 - Acknowledgment Of Support And Disclaimer (MAY 1995)
- 252.235-7011 - Final Scientific Or Technical Report (NOV 2004)
- 252.243-7002 - Requests For Equitable Adjustment (MAR 1998)
- 252.244-7000 - Subcontracts For Commercial Items And Commercial Components (DOD Contracts) (NOV 2005)
- 252.245-7001 - Reports Of Government Property (MAY 1994)
- 252.247-7023 - Transportation Of Supplies By Sea (MAY 2002)
- 252.247-7024 - Notification Of Transportation Of Supplies By Sea (MAR 2000)
(will be included if the successful offeror made a negative response to the inquiry at DFARS 252.247-7022)
- 252.251-7000 - Ordering From Government Supply Sources (NOV 2004)

I-2 FAR 52.223-11 - OZONE-DEPLETING SUBSTANCES (MAY 2001)

(a) *Definitions.* "Ozone-depleting substance", as used in this clause, means any substance the Environmental Protection Agency designates in 40 CFR Part 82 as –

- (1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or
- (2) Class II, including, but not limited to, hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part 82, Subpart E, as follows:

WARNING

Contains (or manufactured with, if applicable) * _____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

*The Contractor shall insert the name of the substance(s).

PART III - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS
SECTION J
LIST OF ATTACHMENTS

- J-1** Attachment (1) - Statement Of Work – 11 Pages, With Exhibit A - DD Form 1423, Contract Data Requirements List, 4 Pages.
- J-2** Attachment (2) - DD Form 254, Contract Security Classification Specification, Ser: 003-07, Dated 2007/01/17, 2 Pages.
- J-3** Attachment (3) - Personnel Qualifications, 4 Pages.
- J-4** Attachment (4) - Accounting and Appropriation Data - 1 page. *

(To be included at time of award)*

PART IV - REPRESENTATIONS AND INSTRUCTIONS
SECTION - K
REPRESENTATIONS, CERTIFICATIONS
AND OTHER STATEMENTS OF OFFERORS OR RESPONDENTS

K-1 REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS OR RESPONDENTS

In accordance with FAR 4.1201, prospective contractors must complete electronic annual federal representations and certifications via the Online Representations and Certifications Application (ORCA) at <http://orca.bpn.gov> in conjunction with required registration in the Central Contractor Registration (CCR) <http://www.ccr.gov> database. The representations and certification must be updated as necessary, but at least annually, to ensure they are kept current, accurate and complete.

In addition, each offeror must submit completed DFARS and contract specific Representations, Certifications, and Other Statements Of Offerors or Respondents with its proposal which is available electronically in full text at <http://heron.nrl.navy.mil/contracts/rep sandcerts.htm> .

Use Contract Representations and Certifications: "A"

K-2 FILL IN FOR FAR 52.219-1 - SMALL BUSINESS PROGRAM REPRESENTATIONS (MAY 2004)

The fill in information is as follows:

- (a) (1) The NAICS code for this acquisition is 541710.
(2) The small business size standard is 500 employees.

**SECTION L
INSTRUCTIONS CONDITIONS AND NOTICES
TO OFFERORS OR RESPONDENTS**

L-1 FAR 52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (FEB 1998)

This solicitation incorporates one or more solicitation provisions 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. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this/these address(es):

<http://www.acqnet.gov/far>
<http://heron.nrl.navy.mil/contracts/home.htm>

FAR CLAUSE TITLE

52.204-6	-	Data Universal Numbering System (DUNS) Number (OCT 2003)
52.214-34	-	Submission Of Offers In The English Language (APR 1991)
52.214-35	-	Submission Of Offers In U.S. Currency (APR 1991)
52.215-1	-	Instructions To Offerors- Competitive Acquisition (JAN 2004)
52.215-16	-	Facilities Capital Cost Of Money (JUN 2003)
52.222-24	-	Preaward On-Site Equal Opportunity Compliance Evaluation (FEB 1999)
52.237-10	-	Identification Of Uncompensated Overtime (OCT 1997)

DFAR CLAUSE TITLE

252.209-7001-	Disclosure Of Ownership Or Control By The Government Of A Terrorist Country (OCT 2006)
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L-2 INSTRUCTIONS FOR SUBMISSION OF PROPOSALS/OFFERS

All proposals shall be submitted in accordance with FAR 52.215-1- *Instructions to Offerors-Competitive Acquisition*. Proposals/offers submitted in paper media through the United States Postal Service (USPS) or delivery services shall be addressed:

Contracting Officer, ATTN: Code 3220.CR

RFP No.: N00173-07-R-CR03

Closing Date: April 10, 2007

Time: 4PM Local Time

Naval Research Laboratory

4555 Overlook Avenue, S.W.

Washington, D.C. 20375

Proposals may be hand delivered to the Contracting Office, NRL, 4555 Overlook Avenue, S.W., Washington, D.C. 20375, Building 222, Room 115 between the hours of 8AM until 4PM, local time, excluding weekends and federal holidays. NRL is a controlled-access facility. Photo identification will be required. Report first to Building 72, Visitor Control for access to NRL. After receiving a Visitor Pass, proceed directly to Building 222, Room 115, Contracting Office Receptionist to deliver the proposal. All offerors shall allow sufficient time for delivery of their proposal to the Contracting Office prior to the closing date and time announced in the solicitation. Directions and additional information about NRL is available at <http://www.nrl.navy.mil/aboutdc.htm>

L-3 FAR 52.211-14 - NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (SEP 1990)

Any contract awarded as a result of this solicitation will be a DX rated order; DO rated order certified for national use under the Defense Priorities and Allocations system (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation.

L-4 FAR 52.215-20 REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA (OCT 1997) ALTERNATE IV (OCT 1997)

- (a) Submission of cost or pricing data is not required.
- (b) Provide information described in L-12 and L-13 to evaluate proposals.

L-5 FAR 52.216-1 - TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a Cost Plus Fixed Fee Term contract resulting From this solicitation.

L-6 FAR 52.233-2 - SERVICE OF PROTEST (SEP 2006)

(a) Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office(GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written

and dated acknowledgment of receipt from the Control Desk, Code 3200, Bldg. 222, Rm. 115, Naval Research Laboratory, 4555 Overlook Ave., S.W., Washington DC 20375-5326.

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

L-7 DFARS 252.227-7017 - IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS (JUN 1995)

- (a) The terms used in this provision are defined in following clause or clauses contained in this solicitation—
 - (1) If a successful offeror will be required to deliver technical data, the Rights in Technical Data--Noncommercial Items clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.
 - (2) If a successful offeror will not be required to deliver technical data, the Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation clause, or, if this solicitation contemplates a contract under the Small Business Innovative Research Program, the Rights in Noncommercial Technical Data and Computer Software--Small Business Innovative Research (SBIR) Program clause.
- (b) The identification and assertion requirements in this provision apply only to technical data, including computer software documents, or computer software to be delivered with other than unlimited rights. For contracts to be awarded under the Small Business Innovative Research Program, the notification requirements do not apply to technical data or computer software that will be generated under the resulting contract. Notification and identification is not required for restrictions based solely on copyright.
- (c) Offers submitted in response to this solicitation shall identify, to the extent known at the time an offer is submitted to the Government, the technical data or computer software that the Offeror, its subcontractors or suppliers, or potential subcontractors or suppliers, assert should be furnished to the Government with restrictions on use, release, or disclosure.
- (d) The Offeror's assertions, including the assertions of its subcontractors or suppliers or potential subcontractors or suppliers shall be submitted as an attachment to its offer in the following format, dated and signed by an official authorized to contractually obligate the Offeror:

Identification and Assertion of Restrictions on the Government's Use, Release, or Disclosure of Technical Data or Computer Software.

The Offeror 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 Restrictions****
(List)*****	(List)	(List)	(List)

- * For technical data (other than computer software documentation) pertaining to items, components, or processes developed at private expense, identify both the deliverable technical data and each such items, component, or process. For computer software or computer software documentation identify the software or documentation.
- ** Generally, development at private expense, either exclusively or partially, is the only basis for asserting restrictions. For technical data, other than computer software documentation, development refers to development of the item, component, or process to which the data pertain. The Government's rights in computer software documentation generally may not be restricted. For computer software, development refers to the software. Indicate whether development was accomplished exclusively or partially at private expense. If development was not accomplished at private expense, or for computer software documentation, enter the specific basis for asserting restrictions.
- *** Enter asserted rights category (e.g., government purpose license rights from a prior contract, rights in SBIR data generated under another contract, limited, restricted, or government purpose rights under this or a prior contract, or specially negotiated licenses).
- **** Corporation, individual, or other person, as appropriate.
- ***** Enter "none" when all data or software will be submitted without restrictions.

Date _____
Printed Name and Title _____
Signature _____

(End of identification and assertion)

- (e) An offeror's failure to submit, complete, or sign the notification and identification required by paragraph (d) of this provision with its offer may render the offer ineligible for award.
- (f) If the Offeror is awarded a contract, the assertions identified in paragraph (d) of this provision shall be listed in an attachment to that contract. Upon request by the Contracting Officer, the Offeror shall provide sufficient information to enable the Contracting Officer to evaluate any listed assertion.

L-8 DFARS 252.227-7028 - TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT (JUN 1995)

The Offeror shall attach to its offer an identification of all documents or other media incorporating technical data or computer software it intends to deliver under this contract with other than unlimited rights that are identical or substantially similar to documents or other media that the Offeror has produced for, delivered to, or is obligated to deliver to the Government under any contract or subcontract. The attachment shall identify - -

- (a) The contract number under which the data or software were produced;
- (b) The contract number under which, and the name and address of the organization to whom, the data or software were most recently delivered or will be delivered; and
- (c) Any limitations on the Government's rights to use or disclose the data or software, including, when applicable, identification of the earliest date the limitations expire.

L-9 GOVERNMENT-FURNISHED PROPERTY

No material, labor, or facilities will be furnished by the Government unless provided for in the solicitation.

L-10 INQUIRIES CONCERNING THE RFP

Any questions concerning the RFP must be submitted in writing to the Contracting Officer representative at the contact location noted in blocks 7 and 10 of the Standard Form 33, *Solicitation, Offer and Award*. Offerors are cautioned against directing any questions concerning this RFP to technical personnel at the Naval Research Laboratory.

L-11 PROPOSAL ORGANIZATION

(1) Information for the technical/management proposal shall be placed in Volume I and be completely separate from the business proposal (Volume II).

(2) Proposal Format and Length - No attempt is made to restrict the proposal format and style. However, the proposal should be written and organized so as to be compatible with the RFP, the Statement of Work, company's organization and accounting structure, and proposed cost estimate. Offerors are encouraged to use recycled paper and maximize the use of double sided copying when preparing responses to solicitations.

L-12 VOLUME I - TECHNICAL/MANAGEMENT PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 4 COPIES.

(1) The offeror must propose the labor categories in accordance with the Level Of Effort Breakdown in Section H. If the offeror uses labor category terminology other than that used in Section H, the offeror must provide a matrix clearly relating their proposed labor categories to those stated.

(2) The following information is required for evaluation of your technical/management proposal:

(a) Personnel Qualifications

Identify the proposed personnel and indicate the labor categories for which they are to be utilized. Describe the qualifications and experience of proposed personnel particularly as they relate to the Statement of Work (Attachment 1) and the Personnel Qualifications stated in Attachment (3). Resume(s) must be provided for all proposed key personnel.

(b) Technical Understanding

Provide a narrative description which demonstrates an understanding and accomplishment of the technical requirements (task areas) in the Statement of Work (SOW).

(c) Management Plan / Corporate Experience

Provide a management plan based on the extent of corporate experience in performing, accomplishing, and managing projects related specifically to the tasks in the SOW. The plan and experience must identify a soundness of the Offeror's project management approach for accomplishing the tasks in the SOW defining responsibilities and accountability.

L-13 VOLUME II - BUSINESS PROPOSAL

(1) COST PROPOSAL

The offeror shall submit a business proposal that includes a cost proposal with supporting information for each cost element consistent with offeror's cost accounting system. The supporting breakdown should include such elements as materials, direct labor, indirect cost, and other costs such as travel. The offeror shall provide exhibits as necessary to substantiate each cost element. Should rates be used in the proposal which are not DCAA approved, the offeror shall provide complete documentation and the rationale for their use at time of proposal submission. However, offerors are advised to use actual labor rates of proposed personnel as the basis for estimating labor costs when practicable.

During the term of the contract, the contractor will be reimbursed actual and verifiable material and other direct associated expenses.

L-14 MATERIAL ESTIMATE (FOR PROPOSAL PURPOSES ONLY)

Offerors shall use the following estimate (with applicable indirect costs added to the estimate) for required material costs. If subcontractors propose material costs, these must also be burdened and that burden added to the estimate. The material estimate below includes those directly associated items which are expected to be incorporated into end products or expended during performance and minor direct equipment expense.

ESTIMATED MATERIAL	BASE	OPTION I (if exercised)	OPTION I (if exercised)	OPTION I (if exercised)	OPTION I (if exercised)	Total Estimated Material
Task 1	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$625,000
Task 2	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$500,000
Task 3	\$350,000	\$350,000	\$350,000	\$350,000	\$350,000	\$1,750,000
Task 4	\$960,000	\$960,000	\$960,000	\$960,000	\$960,000	\$4,800,000
Total Estimated Material	\$1,535,000	\$1,535,000	\$1,535,000	\$1,535,000	\$1,535,000	\$7,675,000

L-15 TRAVEL ESTIMATE (FOR PROPOSAL PURPOSES ONLY)

Offerors shall use the following estimate (with applicable indirect costs added to the estimate) for required travel costs. If subcontractors propose travel costs, these must also be burdened and that burden added to the estimate. The travel estimate below includes travel and subsistence for work

at alternative sites, and allowable local travel per the federal Joint Travel Regulations.

ESTIMATED TRAVEL	BASE	OPTION I (if exercised)	OPTION I (if exercised)	OPTION I (if exercised)	OPTION I (if exercised)	Total Estimated Travel
Task 1	\$168,000	\$168,000	\$168,000	\$168,000	\$168,000	\$840,000
Task 2	\$155,000	\$155,000	\$155,000	\$155,000	\$155,000	\$775,000
Task 3	\$505,000	\$505,000	\$505,000	\$505,000	\$505,000	\$2,525,000
Task 4	\$1,298,000	\$1,298,000	\$1,298,000	\$1,298,000	\$1,298,000	6,490,000
Total Estimated Travel	\$2,126,000	\$2,126,000	\$2,126,000	\$2,126,000	\$2,126,000	\$10,630,000

L-16 MULTIPLE AWARDS

The Contracting Officer may make multiple awards resulting from this solicitation.

SECTION M EVALUATION FACTORS FOR AWARD

M-1 EVALUATION

Award will be made to that offeror whose proposal is determined to be the best value to the Government, proposed cost and other factors considered. The Government reserves the right to make award to other than the low offeror. The technical considerations are more important than the cost factor. The closer the technical scores of the various proposals are to one another, the more important the cost considerations become.

M-2 EVALUATION FACTORS FOR AWARD

Proposals will be evaluated in accordance with the following criteria. The Personnel Qualifications and Technical Understanding factors are of equal value. The Management Plan / Corporate Experience factor is less important than either factor (1) or (2). The technical factor is more important than the cost factor.

M-2-1. TECHNICAL/MANAGEMENT

(1) PERSONNEL QUALIFICATIONS

The proposed personnel will be evaluated on their experience and qualifications relevant to the proposed tasks; and the previous experience of the key personnel including the degree to which they meet the requirements set forth in the Personnel Qualifications.

(2) TECHNICAL UNDERSTANDING

The proposal will be evaluated on the Offerors demonstrated understanding and accomplishment of the technical requirements (task areas) required to support the Statement of Work (SOW).

(3) MANAGEMENT PLAN / CORPORATE EXPERIENCE

The proposal will be evaluated on: the extent of the corporate experience in performing, accomplishing, and managing projects related specifically to the tasks in the SOW; and

the soundness of the Offerors project management approach for accomplishing the tasks in the SOW and defining responsibilities and accountability.

M-2-2 COST TO THE GOVERNMENT

Proposed estimated cost to the Government. The Government may adjust the proposed cost for purposes of evaluation based upon an evaluation of cost realism. Cost Realism means that the costs in an offeror's proposal are realistic for the work to be performed; reflect a clear understanding of the requirements; and are consistent with the various elements of the offeror's technical proposal. The cost realism evaluation includes an analysis of the adequacy of the hours, labor mix, and other direct costs to perform the work as proposed in the technical proposal as well as the proposed labor and indirect rates. It also includes evaluation of the likelihood that the risks inherent in the offeror's technical approach will result in higher actual costs than anticipated.

M-3 FAR 52.217-5 - EVALUATION OF OPTIONS (JUL 1990)

Except when it is determined in accordance with FAR 17.206(b) not to be in the Government's best interests, the Government will evaluate offers for award purposes by adding the total price for all options to the total price for the basic requirement. Evaluation of options will not obligate the Government to exercise the option(s).

STATEMENT OF WORK

1.0 INTRODUCTION

The Naval Research Laboratory (NRL) is responsible for a wide range of research efforts that involve both basic and applied research in the physical, chemical and biological sciences, as well as in chemical materials and engineering. Recent efforts also include a number of multidisciplinary research programs in chemical/biological sensing and nanoscience/nanotechnology. An increasing number of research initiatives within the Navy and DoD have program elements that require the successful integration of numerous technologies. Accordingly, the Navy seeks to use an interdisciplinary approach to developing state-of-the-art analytical diagnostic techniques and instrumentation, and the characterization of the hardware and materials associated with their use. These studies include the application and development of computational modeling tools for analytical analysis, and predictive tools for chemically and/or biologically derived materials and engineering studies. Environmental issues also form a large component of NRL R&D efforts. Active areas include the development of environmental monitoring methodologies and instrumentation, site characterization, and advanced technology demonstrations. The surface science research tasks have environmentally related components, i.e., applications to marine surface corrosion, development of fuel cell component concepts, and biological sensors for screening microbiological contamination of environmental materials and for defending against biological warfare agents.

2.0 SCOPE

These research efforts require the expertise of skilled, highly-technically qualified scientists and engineers with high technical qualifications to carry out the work. The range of skills required include analytical diagnostics in chemistry and biology; molecular biology and immunological methods; surface chemistry and the characterization of surface phenomena; development of materials for MEMS and NEMS device applications; physics and materials engineering; optical spectroscopies; detailed knowledge of energetic materials, explosives and propellant chemistry; modern computational graphics and modeling; information technology; electronics and instrumentation prototyping; and software development capabilities. Persons are required with the following skills: biochemistry, biophysics, molecular and cell biology, analytical and physical chemistry, surface chemistry and physics, materials science and engineering, nanoscience and nanotechnology, computer science and information technology, and sensor technology.

The R&D requirements include tasks that vary considerably in their scope and in the complexity of the deliverable products. However, the tasks are interrelated in that they support the central mission of the NRL and will significantly benefit from coordination with each other.

The contractor/contractors shall provide on a level of effort basis, an estimated total of 300,000 person hours of scientific, technical, and engineering level of effort (see Section H) including any consultants and subcontractors. Specific categories of personnel to perform work shall consist of those direct labor classifications proposed by the contractor

that are included in the resulting contract. The required personnel qualifications and level of clearances to perform individual tasks are defined with each task description.

3.0 TASK DESCRIPTIONS

The technical requirements, the source of the materials and equipment required to support the work, and the contract deliverables are described for each Task.

Task 1: Energetic Materials Development and Characterization

3.1.1 Background

The Naval Research Laboratory has for many years been involved in basic and applied studies in combustion and detonation of fuels, propellants, pyrophorics and energetic materials. These efforts have included experimental and theoretical studies in controlled combustion, deflagration, and detonation processes. The range of skills required for these studies includes laser studies, optical spectroscopies, shock studies, detonation sensitivity studies, studies of reaction kinetics and mechanisms, development of modern instrumentation capabilities in analytical chemistry, computer modeling, and hardware design.

3.1.2 Scope

The contractor shall conduct a research program on-site at NRL according to the technical requirements set forth below.

3.1.3 Technical Requirements

The contractor shall provide specified R&D support, including but not limited to the areas associated with this task as enumerated below:

- 1) The contractor shall conduct basic research studies in the areas of pyrotechnic materials, fuel, and energetic materials design and synthesis, carrying out characterization studies of energetic material properties and chemical behavior including determination of chemical structures, determination of thermodynamic properties, and characterization of chemical reactivity including stability, shelf life, and chemical compatibilities in potential formulations. The contractor shall also support research designed to develop a basic understanding and the methodologies for producing reactive metal nanoparticles for explosive payloads and propulsion systems that are passivated from oxidation under ambient conditions. These evaluations may be used to develop and transition original, new or improved materials for laboratory tests, for field studies, or scale up for large scale testing.
- 2) Systematic theoretical and computational modeling studies of new materials using NRL specified computational and modeling codes shall be carried out. The contractor shall use the modeling codes for predictive studies and use the resulting information to support experimental programs.

- 3) Pre-prototype devices and instrumental techniques will be developed in configurations for both laboratory and field applications. The contractor shall design and fabricate such prototype devices as directed by the COR. Additionally, the contractor shall support the field studies, acquire and evaluate data resulting from laboratory and field studies, and develop reports documenting the results of the tests.

3.1.4 Work Site

A major portion of this task will be performed at NRL, or at other Navy or DoD facilities, as specified by the COR. Some parts of the task may be performed at the contractor's facilities. Some demonstrations and evaluations may take place at other DoD or non-DoD facilities containing UXO or other hazardous materials. Certain equipment, materials, and components may be provided as GFE. Special requirements may apply, as described above.

3.1.5 Deliverables

The contractor shall provide a monthly status of funds report, quarterly written progress reports, oral briefings and other progress reports (as requested by the COR), and a final report at the completion of the Task as required by DD Form 1423.

3.1.6 Security Requirements

Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to specific materials and/or ordnance, some contractor personnel may be required to have a SECRET clearance.

Task 2: R&D Support of *MTADS* and Related UXO Detection Technologies

3.2.1 Background

The Multi-Sensor Towed Array Detection System (*MTADS*) is a vehicular-towed array of magnetic and electromagnetic sensor systems that is used to conduct geophysical surveys for Unexploded Ordnance (UXO) detection and characterization. The vehicular system is supported by man-portable and airborne geophysical survey adjuncts. The systems are also applicable for the localization of underground tanks, pipelines, and other underground structures containing metal. The *MTADS* system relies, in large part, on the Data Acquisition and Analysis Systems (DAQ and DAS). Of primary importance is the DAS, the front end is a stand-alone digital mapping interface that incorporates magnetometry and EMI data applying preprocessing steps to clean up navigation and sensor errors, edit off-site and redundant data, apply leveling and spatial filtering techniques with mapping onto a regular grid. The analysis approach incorporates both automated and interactive anomaly selection options and applies sophisticated analytical

algorithms to model target parameters including position, location, depth, size, orientation, and to a limited extent, shape information. Incorporation of new navigation approaches, new sensor data streams, and new deployment strategies, requires continual development and updating of the DAS.

The *MTADS* systems typically are involved in 3-5 field demonstration activities each year in association with ongoing ESTCP, SERDP, and other DoD-sponsored programs. These activities require data processing and analysis support in the field in support of target selection, reacquisition, and remediation. Often, unique activities form an integral part of the demonstrations requiring adaptations of the software and analysis approaches in response to particular challenges. In addition, NRL continues to represent the forefront of novel sensing hardware development and testing. Accordingly, additional research in developing hardware and software for these applications is required.

3.2.2 Scope

The contractor shall support NRL according to the technical requirements set forth below.

3.2.3 Technical Requirements

The contractor shall provide specified R&D support, including but not limited to the areas associated with this task as enumerated below:

- 1) The contractor shall provide specified R&D support, including but not limited to the areas associated with this task as specified below. The contractor shall provide support to evaluate the performance of commercially available geophysical survey and spatial location systems. These investigations will be directed at the evaluation of sensor performance, GIS integration and evaluation, as well as interoperability issues between vehicular, man-portable, airborne, and marine platform adjuncts using GPS, acoustic, or other navigation and location information.
- 2) The contractor will support laboratory and field operations associated with the evaluation and/or in-house development of novel sensor systems as required. Specifically, the contractor shall address all logistical needs that will facilitate accurate and efficient data acquisition, preprocessing and target analysis using prototype systems. The contractor shall provide for support functions such as additional UXO/HAZWOPR field personnel as required, as well as providing for UXO remediation support to validate system performance. Additionally, the contractor, as required, shall contribute to the extensive reporting requirements associated with ESTCP and SERDP projects and field demonstration activities.

3.2.4 Work Site

A major portion of this task will be performed at NRL, or at other Navy or DoD facilities as specified by the COR. Some parts of the task may be performed at the contractor's facilities. Some demonstrations and evaluations may take place at current or former DoD

ranges containing UXO or other hazardous materials. Certain equipment, materials, and components may be provided as GFE. Special requirements may apply, as described above.

3.3.5 Deliverables

The contractor shall provide a monthly status of funds report, quarterly written progress reports, oral briefings and other progress reports (as requested by the COR), and a final report at the completion of the Task as required by DD Form 1423.

3.3.6 Security Requirements

Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to specific materials and/or ordnance, some contractor personnel may be required to have a SECRET clearance.

Task 3: R&D Support of Surface, Materials and Nano Science and Engineering Studies

3.3.1 Background

NRL is responsible for conducting both basic and applied research focusing on the development and application of new materials and devices for DoD applications. Fundamental research includes studies of ion-solid, laser-solid, and plasma-solid interactions; ion and laser assisted thin film growth; defects in films and materials; and structure/film property relationships. Analysis of surfaces by ion, electron, and photon beams is used extensively in materials research to characterize the surfaces of solids and thin films with respect to their electronic and geometric structure, mass, reactivity, molecular weight, or optical properties. NRL conducts research that addresses fundamentally new approaches to surface analysis and materials characterization that may involve new particle scattering geometries, new detection schemes, new electronics advances for improved energy and temporal resolution, new compact instrument designs, and enhancements in sensitivity. Recent scientific and engineering advances have pushed the limits of measurement, detection, and precision to the atomic and nanometer scale. Surface analysis and materials characterization techniques that are developed are applied to DoD problems in surfaces and coatings, environmental monitoring and control, materials science, catalysis, polymer science, electronic materials, oceanography and geology. Applications areas include alternative fuels and fuel cells, optical, electromagnetic, electronic, magnetic, biological and environmental problems within the DoD and commercial arenas.

The Navy is also working to improve the performance service life, affordability, maintainability, and safety of a wide variety of systems while reducing life-cycle costs and manning requirements. NRL is significantly involved in assisting the Navy in its endeavors in supporting research, development and engineering efforts for improving

these areas. Accordingly, NRL requires highly specialized technical and engineering support that is capable of supporting the diverse and interdisciplinary research topics described below.

3.3.2 Scope

The contractor shall conduct a research program on-site at NRL according to the technical requirements set forth below.

3.3.3 Technical Requirements

The contractor shall provide specified R&D support, including but not limited to the areas associated with this task as enumerated below:

- 1) The contractor shall maintain vacuum and optical systems, design and fabricate mechanical parts and components including hydraulic, gas, and vacuum manifolds; service ion, electron and photon sources; operate analytical systems such as the Pelletron for RBS analysis, X-ray Photoelectron and Auger Electron Spectrometers for surface analysis, various optical and mass spectrometers, scanning probe microscopes, and other techniques as required for surface analysis and materials characterization; and operate systems to grow thin and thick films on surfaces. The contractor shall troubleshoot and repair electronics and write computer programs in C++, labview, and/or other programming languages for upgrading instrument control and data acquisition systems. The contractor shall build, operate and maintain various micro/nano fabrication equipment used for the design and fabrication of MEMS, NEMS and other micro and nano-machined devices.
- 2) The contractor shall develop and use various chemical vapor deposition (CVD) methodologies such as microwave plasma CVD to grow nanocrystalline diamond and other materials for MEMS and NEMS applications to develop nanomechanical resonators for advanced acoustics, electronics, or chemical sensor applications.
- 3) The contractor shall conduct research in the growth and structure of electronic materials such as elemental and compound semiconductors. This work will use various a) deposition tools such as CVD and MBE methodologies and b) characterization tools such as scanning probe microscope or electron diffraction methodologies to determine bulk and surface structures. Special attention will be paid to the use and development of methods to examine the reconstruction of surfaces especially following chemical modification and functionalization.
- 4) The contractor shall conduct research on the synthesis and application of advanced materials including nanomaterials and nanocomposites for a variety of DoD applications for sensors, coatings, other functional materials such as catalysts, and structural materials for advanced platforms and for platform and personal protection including blast mitigation.
- 5) The contractor shall provide research and engineering support on the development of sulfur-tolerant catalysts and synthesis of fuel cell catalysts with reduced platinum loading.

- 6) The contractor shall provide research and engineering support on damage mechanics modeling of electrochemical / corrosion / weld failure / fracture / fatigue phenomena. The modeling shall be used in conjunction with field measurements from various sensing systems to develop predictive capabilities with respect to the behavior of materials of interest to NRL. This includes, but is not limited to, numerical/computational simulations of complex systems involving a combination of structural / thermal / electrical / chemical processes, and anisotropic material response evaluation. Specific attention shall be directed at the development of smart materials and devices.
- 7) The contractor shall conduct research and provide engineering expertise in the area of corrosion control and mitigation. This work encompasses a broad area including basic laboratory chemical and electrochemical analysis, prototype engineering/fabrication, and computerized data analysis. The contractor shall apply candidate advanced corrosion control surface coatings or implement other surface protection and material technologies, such as composite systems, in support of studies for cost effectiveness, operational effectiveness, effective lifetime, and environmental impact. In addition, the contractor shall assist in training Navy and joint service maintenance personnel to achieve the required qualifications for tool and equipment operations, repair operations and coating applications for the purpose of evaluating these approaches/systems as possible Fleet corrosion control methods.

3.3.4 Work Site

A major portion of this task will be performed at NRL, or at other Navy or DoD facilities as specified by the COR. Some parts of the task may be performed at the contractor's facilities. Certain equipment, materials, and components may be supplied as GFE. Special requirements may apply, as described above.

3.3.5 Deliverables

The contractor shall provide a monthly status of funds report, quarterly written progress reports, oral briefings and other progress reports (as requested by the COR), and a final report at the completion of the Task as required by DD Form 1423.

3.3.6 Security Requirements:

Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, some contractor personnel may be required to have a SECRET clearance.

Task 4: Development of Physical, Chemical and Biological Detection Systems for DoD and Dual-Use Applications

3.4.1 Background

The NRL has an established history of collaborative research and development efforts within the Navy, the DoD, and other Government agencies. The results of these efforts have effectively established the mechanisms to evaluate emerging technologies and to rapidly initiate research and development efforts that allow the Government to assess their potential for DoD and dual-use applications. Numerous projects have moved through advanced development into production applications for the fleet. These emerging technology investigations encompass a diverse technical spectrum within the physical, chemical, biological, and environmental arenas. Accordingly, a need is anticipated for specialized research and development support to evaluate emerging technologies as R&D and programmatic needs dictate. These include but are not limited to chemical and biological sensors, genetic engineering of biomaterials, cell biology, microbiology, molecular recognition and identification, self-assembled films and patterning on such films, novel devices and microelectrodes, liquid crystal technologies, and biomedical applications utilizing encapsulated therapeutic compounds. The object of the sensor studies is primarily the detection, identification, and quantification of trace chemical and biological species. These species may be trace-level single-component items of concern, or may be incorporated in complex mixtures of gases, liquids or solids such as, but not limited to, air and water, biological fluids, food, bilge/ocean/potable water, and soil/sediment samples. This task addresses emerging technologies specifically relating to chemical and biological sensor technologies.

Situational awareness is an important aspect of Damage Control (DC) that requires novel approaches to meet the demands of the Navy environment. Multicriteria point-sensor arrays comprised of smoke detectors and chemical sensors have demonstrated improved response times and superior nuisance source rejection compared to individual point sensors. However, these fire detection systems depend on diffusion of the particles and chemical species to the detector, which results in slow responses to smoldering fires. In addition, they have difficulty discriminating fire-like nuisance sources, such as welding, grinding steel, and cutting with a torch. Surveillance cameras in ship spaces provide a visible image that can be used to confirm the presence of fire or nuisance sources. Some fire detection companies are investigating video image detection (VID) using machine vision for fire detection in large facilities such as warehouses and tunnels. VID is a new and very attractive approach to fire detection because of the ability to see the entire compartment or volume of a space (i.e., volume sensor). The VID system provides rapid fire detection without requiring the fire effluents to travel to the detector.

The NRL is also interested in the miniaturization of analytical and bioanalytical tools for specifically meeting Navy sensing needs. Integration of microelectronics, microlithography, analytical detection methodology, and microfluidics are combined to develop novel chemical sensing devices. Microfluidic systems and structures are designed on miniaturized microchip platforms to completely encompass a typical analytical separations laboratory, including extraction, preconcentration, injection, separation, pre- and post-column derivatization and detection techniques. Research is

also being performed on the development of optical chromatography and the utilization of optical trapping for the separation of molecules based on both size and refractive index. The range of skills required for these studies include laser studies, optical spectroscopies, molecular recognition and bio-mimetics, surface modification, microfabrication and microfluidics, clean room skills, and 'Lab-on-a-Chip' or capillary electrophoresis (CE) microchip expertise.

The contractor shall conduct a laboratory research and development program primarily on-site at NRL and other Government facilities to provide specified chemical, biochemical, engineering and computational expertise, including but not limited to those described below. The contractor shall carry out laboratory research and development studies of emerging chemical, biochemical, medical, environmental technologies, and in conjunction with Government scientists as directed by the COR, transition these R&D efforts into breadboard demonstrations, and as indicated, into prototype devices. Others devices and applications may be proposed by the contractor or identified by the COR.

3.4.2 Scope

The contractor shall conduct a research program on-site at NRL according to the technical requirements set forth below.

3.4.3 Technical Requirements:

The contractor shall provide specified R&D support, including but not limited to the areas associated with this task as enumerated below:

- 1) The contractor shall conduct a laboratory research and development program primarily on-site at NRL and other Government facilities to provide high level R&D support in the development of chemical and/or biological sensors for detection, identification and quantification of single-component and/or mixtures of analytes in gas, liquid or solid forms. Chemically-based sensors will include but not be limited to technologies based on chemical or electrochemical reactions that produce heat, light or new products that can be detected by physical, chemical, optical, electrical or electromagnetic means. Biological-based sensors and assays will include but not be limited to technologies based on biomolecular recognition, e.g., antibodies, DNA and PNA probes, enzymes, aptamers, cells, and other biomolecules, that can be incorporated into biosensors as the recognition element. These sensors shall be used for the detection of drugs of abuse, explosives, pollutants and other environmental contaminants, pathogenic organisms, chemical/biological warfare agents, and other analytes of interest to NRL.
- 2) In conjunction with 1) above, the contractor shall assist in collaborative studies with other NRL components for the purpose of developing new chemical and biological sensing concepts and devices as required. The contractor shall support NRL in the development of reagentless detection systems and label-free high-density sensors that do not rely on the addition of reagent or labels to the analyte solution to indicate when the desired interaction has occurred.

- 3) In conjunction with 1) above, the contractor shall support NRL in the development of novel Micro Electro-Mechanical Systems (MEMS) and Nano Electro-Mechanical Systems (NEMS) devices that incorporate physical, chemical and/or biological sensing elements. The contractor shall also support NRL initiatives in the development of lab-on-a-chip and nanotechnologies (such as carbon nanotubes and nanowires) that may be incorporated into sensing elements for naval applications. As directed by the COR, the contractor shall provide engineering support in micro- and nano-fluidic systems and in electronics for breadboard and prototype development.
- 4) In conjunction with 1) above, the contractor shall develop, operate, and maintain hardware and software associated with specified chemical and biological sensor systems as directed by the COR. Of particular emphasis is the application of chemometrics and pattern-recognition methodologies for improved detection and sensing capabilities and for enhanced system automation, function, and control. Computational and computer support of the R&D efforts from data analysis to information technology is also required. The contractor shall assist with the transport of chemical/biological test facilities as required, for the purpose of conducting both simulant and live agent chemical and biological tests. The contractor shall perform checkout and life-test protocols on individual sensor components, assemble sophisticated chemical and biological sensor units, and perform system performance tests on the assembled units, including in-house chemical agent simulant tests, to ensure proper operation. The contractor shall write interface control documents and maintain a log of all design modifications to the sensor system(s) being evaluated.
- 5) As required, the contractor shall provide R&D support associated with the identification and quantification of biological species present in environmental samples. In addition, the contractor shall develop methods and technologies associated with the examination of complex mixtures and real-world samples. Novel sampling and separation strategies will be proposed and developed.
- 6) Using a multisensory approach, the contractor shall provide R&D support to develop new detection capabilities for damage control (DC) in the shipboard environment. This program seeks to develop and demonstrate improved DC capabilities to include anticipatory DC response mechanisms to help ensure that the recoverability performance goals for the CVN21 and the DD(X) family of ships can be met with established manning levels and systems. Various spectral and acoustic signatures will be used in combination with video images and image recognition technologies for the development of a sensor system that is able to provide a broad range of situational awareness for a space.
- 7) As required, the contractor shall provide R&D support to a) understand the electrical double layer in microfluidic to nanofluidic systems, uncovering the relationship between surface effects and high pressure electrokinetic pumping; b) develop new capillary electrophoresis based separations of analytes of interest to the Navy, including explosives, and chemical and biological warfare agents, and apply this knowledge to microfluidic based systems; c) explore novel extraction and

preconcentration techniques in microfluidic structures that have the capacity for lowering detection limits in a timely fashion; d) advance the fundamental scientific understanding of optical pressure as it relates to chemically different materials; and e) push the limits of optical trapping toward nanometer sized materials and macromolecules.

- 8) As required, the contractor shall provide R&D support to construct breadboard-based microfluidic devices for sensing of DoD analytes of interest. Self-contained, prototype lab-on-a-chip devices will be designed, implemented and fully characterized based upon knowledge gained through basic research studies of novel sensing technologies. Testing will include all analytical figures of merit, including sensitivity, selectivity, dynamic range, interference, lifetime, and reproducibility. The contractor shall also contribute to the advancement of prototype lab-on-a-chip or other microfluidic based sensing devices into fieldable microdevices. Support of field studies shall include the acquisition, evaluation and interpretation of data, as well as the resulting redesign of microfluidic platforms to further meet sponsor requirements.

3.4.4 Work Site

A major portion of this task will be performed at NRL, or at other Navy or DoD facilities as specified by the COR. Some parts of the task may be performed at the contractor's facilities. Certain equipment, materials, and components may be supplied as GFE. Special requirements may apply, as described above.

3.4.5 Deliverables

The contractor shall provide a monthly status of funds report, quarterly written progress reports, oral briefings and other progress reports (as requested by the COR), and a final report at the completion of the Task as required by DD Form 1423.

3.4.6 Security Requirements

Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, some contractor personnel may be required to have a SECRET clearance.

CONTRACT DATA REQUIREMENTS LIST

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Executive Services and Communications Directorate (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please do not return your form to the above organization. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO. 0002	B. EXHIBIT A	C. CATEGORY: TDP _____ TM _____ OTHER <u>X</u>
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D. SYSTEM/ITEM 0001	E. CONTRACT/PR NO. N00173-07-R-CR03	F. CONTRACTOR
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1. DATA ITEM NO. A001	2. TITLE OF DATA ITEM Status of Funds Report	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) N/A	5. CONTRACT REFERENCE Entire SOW	6. REQUIRING OFFICE NRL Code 6100
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY MTHLY	12. DATE OF FIRST SUBMISSION 30DAC	14. DISTRIBUTION		
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION 5th workday	a. ADDRESSEE	b. COPIES	
					Draft	Final

16. REMARKS To include fiscal summary (% total effort, increments & costs to date, current obligations & funds remaining), labor costs (direct labor, overhead), other direct costs, fee & direct labor hours (monthly, year to date, contract to date).	15. TOTAL →	0	1	0
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17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

1. DATA ITEM NO. A002	2. TITLE OF DATA ITEM Technical Progress Reports	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) N/A	5. CONTRACT REFERENCE Entire SOW	6. REQUIRING OFFICE NRL Code 6100
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY QRTLY	12. DATE OF FIRST SUBMISSION 120DAC	14. DISTRIBUTION		
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES	
					Draft	Final

16. REMARKS To include summary of progress made during each quarter, list of technical presentations, and copies of submitted papers.	15. TOTAL →	0	1	0
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17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

1. DATA ITEM NO. A003	2. TITLE OF DATA ITEM Status of Patents and Publications Report	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) N/A	5. CONTRACT REFERENCE Entire SOW	6. REQUIRING OFFICE NRL Code 6100
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY ANNNLY	12. DATE OF FIRST SUBMISSION *	14. DISTRIBUTION		
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES	
					Draft	Final

16. REMARKS To include status of patents noted on DD form 882 and list of technical presentations and publications for the year. * One year from contract award date.	15. TOTAL →	0	1	0
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17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

1. DATA ITEM NO. A004	2. TITLE OF DATA ITEM Final Report	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) N/A	5. CONTRACT REFERENCE Entire SOW	6. REQUIRING OFFICE NRL Code 6100
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY 1TIME	12. DATE OF FIRST SUBMISSION *	14. DISTRIBUTION		
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES	
					Draft	Final

16. REMARKS To include a summary of all technical progress including copies of publications and a summary of fiscal transactions of all direct and indirect costs. * Due NLT 90 days after contract completion.	15. TOTAL →	0	1	0
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17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

G. PREPARED BY NRL Code 6100	H. DATE 2/13/07	I. APPROVED BY	J. DATE
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CONTRACT DATA REQUIREMENTS LIST

(2 Data Items)

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 220 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Executive Services and Communications Directorate (0704-0188). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please do not return your form to the above organization. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO. 0002	B. EXHIBIT A	C. CATEGORY: TDP _____ TM _____ OTHER <u>X</u>
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D. SYSTEM/ITEM 0001	E. CONTRACT/PR NO. N00173-07-R-CR03	F. CONTRACTOR
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1. DATA ITEM NO. A005	2. TITLE OF DATA ITEM Technical Progress Report	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) N/A	5. CONTRACT REFERENCE Entire SOW	6. REQUIRING OFFICE NRL Code 6100
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY MTHLY	12. DATE OF FIRST SUBMISSION 30DAC	14. DISTRIBUTION			
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION 5th workday	a. ADDRESSEE	b. COPIES		
					Draft	Final	
						Reg	Repro

16. REMARKS TECHNICAL PROGRESS REPORT MUST INCLUDE (BUT NOT LIMITED TO): 1) Description of progress during the reporting period, accompanied by description of any changes in approach, requirements, and schedule; 2) Summary of problems or areas of concern for which Government assistance or guidance is appropriate; 3) Description relevant to existing or anticipated deviation from the approved program plan or required change in program objectives; 4) Formal or informal oral briefings describing progress on individual tasks or subtasks, as required by the COR; and 5) List plus copies of papers submitted for publication.	15. TOTAL → 0 1 0
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1. DATA ITEM NO. A006	2. TITLE OF DATA ITEM Monthly Fiscal Status Report	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) N/A	5. CONTRACT REFERENCE Entire SOW	6. REQUIRING OFFICE NRL Code 6100
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY MTHLY	12. DATE OF FIRST SUBMISSION 30DAC	14. DISTRIBUTION			
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION 5th of mth	a. ADDRESSEE	b. COPIES		
					Draft	Final	
						Reg	Repro

16. REMARKS FISCAL STATUS REPORT MUST INCLUDE: 1) Current cumulative support provided for the contract & enumeration of all prior increments applied to the contract associated with individual tasks; 2) Monthly & cumulative labor hours and costs associated with each task including program management, individual labor hours, materials/equipment, travel, subcontracting, consultants, conference/meetings, publications/reports, and other direct costs; and 3) Funds remaining to support each Task. The contractor shall provide a monthly contractor labor hour report by the 5th workday of each month for the preceding month. The report must include A. Reporting Data, Task Identification, Task Value, Current Funding Obligated (by NRL), Expended in Current Period, Total Expended Year to Date, Total Expended Contract to Date, and Date Submitted. B. Labor - show employee name, number of hours & total amount billed including Subcontractors. Must include work on multiple tasks. Show separately if needed.	15. TOTAL → 0 1 0
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G. PREPARED BY NRL Code 6100	H. DATE 2/13/07	I. APPROVED BY	J. DATE
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17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

CONTRACT DATA REQUIREMENTS LIST

(2 Data Items)

Form Approved
OMB No. 0704-0188

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A. CONTRACT LINE ITEM NO. 0002	B. EXHIBIT A	C. CATEGORY: TDP _____ TM _____ OTHER <u>X</u>
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D. SYSTEM/ITEM 0001	E. CONTRACT/PR NO. N00173-07-R-CR03	F. CONTRACTOR
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1. DATA ITEM NO. A007	2. TITLE OF DATA ITEM Annual Technical Report	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) N/A	5. CONTRACT REFERENCE Entire SOW	6. REQUIRING OFFICE NRL Code 6100
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY ANNNLY	12. DATE OF FIRST SUBMISSION *	14. DISTRIBUTION		
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION**	a. ADDRESSEE	b. COPIES	
					Draft	Final
					Reg	Repro

16. REMARKS The annual technical report may be of a specialized nature in response to specific requirements associated with a particular study, analysis, meeting or field activity. The annual technical report will document technical accomplishments associated with each task area, cite all documents including patents and publications delivered during the reporting period, and enumerate all deliverables produced. Any special conditions, observations or problems requiring deviation from planned or approved activities will be described and explained. * Due end of first contract year. ** Every year thereafter.	15. TOTAL → 0 1 0
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1. DATA ITEM NO. A008	2. TITLE OF DATA ITEM Final Report	3. SUBTITLE
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4. AUTHORITY (Data Acquisition Document No.) N/A	5. CONTRACT REFERENCE Entire SOW	6. REQUIRING OFFICE NRL Code 6100
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7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY OTIME	12. DATE OF FIRST SUBMISSION *	14. DISTRIBUTION		
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION	a. ADDRESSEE	b. COPIES	
					Draft	Final
					Reg	Repro

16. REMARKS The final report may be of a specialized nature in response to specific requirements associated with a particular study, analysis, meeting or field activity. The final report will document technical accomplishments associated with each task area, cite all documents delivered during the reporting period, and enumerate all deliverables produced. Any special conditions, observations or problems requiring deviation from planned or approved activities will be described and explained. Documentation of all purchases and procurement will be presented by task and a list of all government-owned materials, equipment and supplies in contractor inventory will be presented. *Due NLT 15 days after contract completion.	15. TOTAL → 0 2 0
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G. PREPARED BY NRL Code 6100	H. DATE 2/13/07	I. APPROVED BY	J. DATE
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17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

17. PRICE GROUP
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DEPARTMENT OF DEFENSE CONTRACT SECURITY CLASSIFICATION SPECIFICATION <i>(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)</i>				1. CLEARANCE AND SAFEGUARDING SER: 003-07				
				a. FACILITY CLEARANCE REQUIRED <div style="text-align: center;">SECRET</div>				
				b. LEVEL OF SAFEGUARDING REQUIRED <div style="text-align: center;">SECRET</div>				
2. THIS SPECIFICATION IS FOR: <i>(X and complete as applicable)</i>			3. THIS SPECIFICATION IS: <i>(X and complete as applicable)</i>					
a. PRIME CONTRACT NUMBER		<input checked="" type="checkbox"/>		a. ORIGINAL <i>(Complete date in all cases)</i>		DATE (YYYYMMDD) 2007/01/17		
b. SUBCONTRACT NUMBER				b. REVISED <i>(Supersedes all previous specs)</i>		REVISION NO. DATE (YYYYMMDD)		
<input checked="" type="checkbox"/> c. SOLICITATION OR OTHER NUMBER 61-0182-07		DUE DATE (YYYYMMDD)		c. FINAL <i>(Complete Item 5 in all cases)</i>		DATE (YYYYMMDD)		
4. IS THIS A FOLLOW-ON CONTRACT? <input type="checkbox"/> YES <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? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO. If Yes, complete the following: In response to the contractor's request dated _____, retention of the 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			b. CAGE CODE		c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i>			
FOR RFP PURPOSES ONLY, NOT VALID FOR ACTUAL CONTRACT AWARD					N/A			
7. SUBCONTRACTOR								
a. NAME, ADDRESS, AND ZIP CODE			b. CAGE CODE		c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i>			
N/A					N/A			
8. ACTUAL PERFORMANCE								
a. LOCATION			b. CAGE CODE		c. COGNIZANT SECURITY OFFICE <i>(Name, Address, and Zip Code)</i>			
N/A					N/A			
9. GENERAL IDENTIFICATION OF THIS PROCUREMENT RESEARCH AND DEVELOPMENT SUPPORT CONTRACT IN THE PHYSICAL, ENGINEERING, AND LIFE SCIENCES								
10. CONTRACTOR WILL REQUIRE ACCESS TO:			YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:		YES	NO
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			<input checked="" type="checkbox"/>
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					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>			
k. OTHER <i>(Specify)</i>								

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*)

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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.*)

Access to classified information is not required for the purpose of submitting a bid/proposal for this statement of work. However, prior to award of contract, the successful contractor will be required to have a SECRET facility clearance, and personnel available with final DoD granted personnel security clearances commensurate with level of access required for performance of contract.

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to ISM requirements, are established for this contract. Yes No
 (*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.*)

15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. Yes No
 (*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.*)

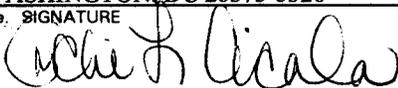
16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL	b. TITLE	c. TELEPHONE (<i>Include Area Code</i>)
VICKI CICALA	CONTRACTING OFFICER, SECURITY	(202) 767-2240/2576

d. ADDRESS (*Include Zip Code*)

NAVAL RESEARCH LABORATORY
 4555 OVERLOOK AVE. SW
 WASHINGTON, DC 20375-5320

e. SIGNATURE



17. REQUIRED DISTRIBUTION

- a. CONTRACTOR
- b. SUBCONTRACTOR
- 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 1226.2, 6102, 6100

PERSONNEL QUALIFICATIONS

Program Manager (All Tasks) (Key Personnel)

The Program Manager (PM) must have a minimum of 10 years experience in an applied R&D environment administering/managing DoD-sponsored programs. Because of the highly technical and specific nature of the work the PM should possess a technical degree in the chemical, physical or engineering sciences. Must have demonstrated record of recent technical publications relevant to the scope of this effort. Specifically, the Program Manager must possess documented first-hand expertise in (1) the direct oversight of research and development efforts associated with the evaluation of novel energetic materials and/or propellants, (2) environmental issues associated with UXO and military ranges, including familiarity with techniques and approaches in addressing geophysical surveys and mapping, (3) R&D expertise in the development and evaluation of materials and instrumentation for naval and other DoD applications; and (4) the understanding of biological systems and their applications associated with the NRL, Navy and DoD mission requirements. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the PM must be able to obtain a SECRET clearance. In addition, as manager of a group of highly-trained specialists, with diverse talents working on programs with both strong laboratory R&D and field operational components, the PM should have documented strengths in coordinating complex programs and managing/supervising a staff composed of physical, chemical and biological scientists, engineers, as well as ancillary technical and administrative support personnel.

Task 1: Energetic Materials Development and Characterization

Senior Scientist/Engineer (Key Personnel)

The senior scientist/engineer must have a Ph.D. degree in Chemistry or a related field (Material Science, Engineering or Physics), with a minimum of 5 years of experience in laboratory combustion studies, laser-based spectroscopies, and energetic materials research. Must be recognized expert and an active researcher in his/her field, as documented by his/her stature in professional societies and/or regular publications/presentations in professional society settings. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the senior scientist/engineer, must have or be eligible for a SECRET clearance. Supervisory experience helpful.

Scientist/Engineer

The scientist/engineer must have a Ph.D. degree in Chemistry or a related field (Material Science, Engineering or Physics), with a minimum of 5 years of experience in laboratory combustion studies, laser-based spectroscopies, and energetic materials research. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the scientist/engineer, must have or be eligible for a SECRET clearance.

Clerk

Wide range of duties, including, but not limited to, support scientists/engineers, by performing the full range of clerical, para-technical, and administrative support work. Works under close supervision and receives specific instructions as to when and how to accomplish assigned task. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the clerk must have or be eligible for a SECRET clearance.

Task 2: R&D Support of *MTADS* and Related UXO Detection Technologies

Senior Scientist/Engineer (Key Personnel)

The senior scientist/engineer must have a Ph.D. degree in Chemistry or a related field (Material Science, Engineering or Physics), with a minimum of 7 years of experience in the development and demonstration of 1) instrumentation used for magnetic and electromagnetic geophysical surveys of UXO sites and 2) advanced algorithms used to identify buried ordnance. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the senior scientist/engineer, must have or be eligible for a SECRET clearance. Supervisory experience helpful.

Scientist/Engineer

The scientist/engineer must have a Ph.D. degree in Chemistry or a related field (Material Science, Engineering or Physics) for this task and must have at least 5 years of direct experience in the development and demonstration of 1) instrumentation used for magnetic and electromagnetic geophysical surveys of UXO sites and 2) advanced algorithms used to identify buried ordnance. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to specific materials and/or ordnance, the scientist/engineer assigned to this task must have or be eligible for a SECRET clearance.

Task 3: R&D Support of Surface, Materials and Nano Science and Engineering Studies

Senior Scientist/Engineer (Key Personnel)

The Senior Scientist/Engineer(s) must possess a Ph.D. degree in Chemistry, Physics, Materials Science, Engineering, Mechanical or Marine Engineering, and at least 7 years experience in ion physics, plasma deposition and chemistry, surface chemistry/physics, surface analysis, micro/nano fabrication methods, micro/nano mechanics, information technology, energy generation and storage systems, finite element modeling, materials science and engineering, or corrosion science. Must have demonstrated experience in

the following application areas: high resolution mass spectrometry; nanomaterials growth and thin film deposition; surface modification/functionalization of semiconductors, diamond and carbon nanotubes; electrocatalysts and fuel cells; X-ray photoelectron and scanning Auger electron spectroscopy; scanned probe microscopy; and materials for ballistic protection. Must be recognized expert and active researcher in their field, as documented by their stature in professional societies and/or regular publications/presentations at professional society meetings. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the senior scientist/engineer, must have or be eligible for a SECRET clearance. Supervisory experience helpful.

Technician

Wide range of duties, including, but not limited to, support scientists/engineers, by performing the full range of technical support work. Works under close supervision and receives specific instructions as to when and how to accomplish assigned task. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the technician, must have or be eligible for a SECRET clearance.

Task 4: Development of Physical, Chemical and Biological Detection Systems for DoD and Dual-Use Applications

Senior Scientist/Engineer (Key Personnel)

The Senior Scientist/Engineer must possess a Ph.D. degree in Materials Science and Engineering, Chemistry, Computational Science, Molecular or Microbiology. Senior Scientist/Engineer must have at least 7 years hands-on experience with analytical, physical and/or polymer chemistry, synthetic chemistry, chemometrics, molecular biology as applied to investigations of pathological organisms, biochemistry, materials science, electronics and mechanical engineering, micro/nano fabrication, microfluidics, CAD tools, rapid prototyping technologies, molecular biology, and sensor and information technology. Additionally must have demonstrated experience in the following application areas: pulsed laser deposition, synthesis of fluoropolymers, multivariate analysis, bioassays, and chem/bio sensors. Must be a recognized expert and active researcher in their field, as documented by their stature in professional societies and/or regular publications/presentations at professional society meetings. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the senior scientist/engineer, must have or be eligible for a SECRET clearance. Supervisory experience helpful.

Scientist/Engineer

The Scientist/Engineer must possess a Ph.D. degree in Materials Science and Engineering, Chemistry, Computational Science, Molecular or Microbiology. Senior Scientist/Engineer must have at least 5 years hands-on experience with analytical, physical and/or polymer chemistry, synthetic chemistry, chemometrics, molecular biology as applied to investigations of pathological organisms, biochemistry, materials science, electronics and mechanical engineering, micro/nano fabrication, microfluidics, CAD tools, rapid prototyping technologies, molecular biology, and sensor and information technology. Additionally must have demonstrated experience in the following application areas: pulsed laser deposition, synthesis of fluoropolymers, multivariate analysis, bioassays, and chem/bio sensors. Must be a recognized expert and active researcher in their field, as documented by their stature in professional societies and/or regular publications/presentations at professional society meetings. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the senior scientist/engineer, must have or be eligible for a SECRET clearance. Supervisory experience helpful.

Technician

Wide range of duties, including, but not limited to, support scientists/engineers, by performing the full range of technical support work. Works under close supervision and receives specific instructions as to when and how to accomplish assigned task. Because this effort may require contractor personnel to have access to military installations and specifically to classified ranges and operations, as well as classified information pertaining to performance of DoD systems, the technician, must have or be eligible for a SECRET clearance.