

SOLICITATION, OFFER AND AWARD		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)		RATING D0-C9	PAGE OF PAGES 1 25
2. CONTRACT NUMBER	3. SOLICITATION NUMBER N00173-07-R-JS06	4. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	5. DATE ISSUED 05/10/07	6. REQUISITION/PURCHASE NUMBER 57-2020-07	
7. ISSUED BY Contracting Officer Naval Research Laboratory Attn: Code 3220.MS Washington, D.C. 20375-5326		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 2 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 Bldg. 222, Room 115 until 4:00 pm local time 06/11/07
(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 Jamie Brown	B. TELEPHONE (NO COLLECT CALLS)			C. E-MAIL ADDRESS jamie.brown@nrl.navy.mil
		AREA CODE 202	NUMBER 767	EXT. 4597	

11. TABLE OF CONTENTS

(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
<input checked="" type="checkbox"/>	A	SOLICITATION/CONTRACT FORM	1	<input checked="" type="checkbox"/>	I	CONTRACT CLAUSES	13-17
<input checked="" type="checkbox"/>	B	SUPPLIES OR SERVICES AND PRICES/COSTS	2	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
<input checked="" type="checkbox"/>	C	DESCRIPTION/SPECS./WORK STATEMENT	2	<input checked="" type="checkbox"/>	J	LIST OF ATTACHMENTS	17
<input checked="" type="checkbox"/>	D	PACKAGING AND MARKING	3	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
<input checked="" type="checkbox"/>	E	INSPECTION AND ACCEPTANCE	3	<input checked="" type="checkbox"/>	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	18
<input checked="" type="checkbox"/>	F	DELIVERIES OR PERFORMANCE	3-4	<input checked="" type="checkbox"/>	L	INSTRS., CONDS., AND NOTICES TO OFFERORS	18-24
<input checked="" type="checkbox"/>	G	CONTRACT ADMINISTRATION DATA	4-7	<input checked="" type="checkbox"/>	M	EVALUATION FACTORS FOR AWARD	24-25
<input checked="" type="checkbox"/>	H	SPECIAL CONTRACT REQUIREMENTS	8-12				

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 (%)
---	----------------------	----------------------	----------------------	-------------------

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)	
15B. TELEPHONE NUMBER	AREA CODE	NUMBER	EXT.	17. SIGNATURE
				18. OFFER DATE
15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE.				

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)		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

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

**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 Conduct research and Development in Accordance with the Statement of Work, Attachment (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 27 March 2007 which are hereby incorporated by reference. The full text is available at <http://heron.nrl.navy.mil/contracts/12onsite.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 (twelve) months thereafter, with (4) options that will extend the period of performance for an additional (12) twelve months each, if exercised.
- (b) The principal place of performance of this contract shall be the Naval Research Laboratory, Washington, D.C.

F-3 PLACE OF DELIVERY - FOB DESTINATION

The contractor shall deliver supplies, all transportation charges paid, to destination in accordance with the clause in Section F of the Schedule titled FAR 52.247-34 FOB Destination (NOV 1991).

Receiving Officer
Naval Research Laboratory
Contract Number
ATTN: *
CODE: *
LOCATION: *
Bldg. 49
4555 Overlook Avenue, SW
Washington DC 20375-5320

(* To be filled in at time of award.)

**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
-------------------------------	----------------

(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
Senior Scientist	

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 26,880 total hours of direct labor for the Basic award, 26,880 for each of the four Option Years, if exercised, 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 2,240 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 by contract modification.
- (e) The Contracting Officer may, by written order, direct the Contractor to accelerate the expenditure of direct labor such that the total hours of effort specified in paragraph (a) above would be used prior to the expiration of the term. This order shall specify the acceleration required and the resulting revised term. The Contractor shall acknowledge this order within five days of receipt.
- (f) If the total level of effort specified in paragraph (a) above is not provided by the Contractor during the term of this contract, the Contracting Officer shall either (i) reduce the fixed fee of this contract as follows:
- $$\text{Fee Reduction} = \text{Fixed Fee} \times \frac{(\text{Required LOE Hours} - \text{Expended LOE Hours})}{\text{Required LOE Hours}}$$
- or (ii) subject to the provisions of the clause of this contract entitled "Limitation of Cost," require the Contractor to continue to perform the work until the total number of hours of direct labor specified in paragraph (a) shall have been expended, at no increase in the fixed fee of this contract.
- (g) In the event the government fails to fully fund the contract in a timely manner, the term of the contract may be extended accordingly with no change to cost or fee. If the government fails to fully fund the contract, the fee will be adjusted in direct proportion to that effort which was performed.

(h) Notwithstanding any of the provisions in the above paragraphs, the Contractor may furnish hours up to five percent in excess of the total hours specified in paragraph (a) above, provided that the additional effort is furnished within the term hereof, and provided further that no increase in the estimated cost or fixed fee is required, and no adjustment in the fixed fee shall be made provided that the Contractor has delivered at least 95% of the level of effort required in paragraph (a) above.

(i) It is understood that the mix of labor categories provided by the Contractor under the contract, as well as the distribution of effort among those categories, may vary considerably from the initial mix and distribution of effort which was estimated by the government or proposed by the Contractor.

(j) Nothing herein shall be construed to alter or waive any of the rights or obligations of either party pursuant to the Clause entitled "Limitation of Costs" or "Limitation of Funds," either of which clauses as incorporated herein applies to this contract.

(k) The anticipated breakdown by labor category of the total level of effort is as follows:

<u>Labor Category</u>	<u>Labor Hours</u> <u>Basic Award and each</u> <u>Option, if exercised</u>
Senior Scientist	1,920
Associate Senior Scientist	3,840
Scientist	2,880
Computer Scientist/Software Engineer	1,920
Associate Engineer (Electrical)	3,840
Associate Engineer (Mechanical)	1,920
Engineering Analyst	1,920
Senior Technician	2,880
Technician	960
Planner/Program Analyst	1,920
Drafter/Mechanical Designer	960
Senior Assembler	<u>1,920</u>
TOTAL	26,880

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 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

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

Second Option

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

Third Option

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

Fourth Option

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

Any collection or analysis of data from human subjects must not commence until the contractor provides the following information per SECNAV 3900.39D 8.d. (1):

- (a) An appropriate DoD Navy Assurance or a Federalwide Assurance (FWA) with a DoD Navy addendum to the FWA, or an application for a DoD Navy Assurance.
- (b) Documentation of the Institutional Review Board's (IRBs) initial and continuing review and approval.
- (c) IRB-approved informed consent form, except when not required consistent with law and regulation.
- (d) IRB-approved research protocol.
- (e) Documentation that research ethics and human subject protections training has been completed by the contractor's principle investigators.

The contractor has responsibility for certain reporting requirements per SECNAV 3900.39D 8.d. (2).

H-9 TRAVEL AND MATERIALS

All travel and material purchases associated with these tasks are subject to prior written Contracting Officer Representative (COR) approval. Work under the tasks shall be proposed in writing for COR approval showing estimated time to complete as well as estimated labor and material costs. Prior to any travel, contractor shall submit a travel plan showing itinerary, estimated travel and estimated material purchase costs.

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)
(<i>will be included if the successful offeror does not propose facilities capital cost of money</i>) |
| 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 And Pricing Data Or Information Other Than Cost Or Pricing Data - Modifications (OCT 1997) - Alternate IV (OCT 1997) |
| 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.
- 52.219-8 - Utilization Of Small Business Concerns (MAY 2004)
- 52.219-9 - Small Business Subcontracting Plan (SEP 2006) - Alternate II (OCT 2001)
- 52.219-16 - Liquidated Damages-Subcontracting Plan (JAN 1999)
- 52.219-25 - Small Disadvantaged Business Participation Program-Disadvantaged Status And Reporting (OCT 1999)
- 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"
- 52.222-3 - Convict Labor (JUN 2003)
- 52.222-19 - Child Labor – Cooperation With Authorities And Remedies (JAN 2006)
- 52.222-21 - Prohibition Of Segregated Facilities (FEB 1999)
- 52.222-26 - Equal Opportunity (MAR 2007)
- 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)
- 52.223-14 - 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)
- 52.227-12 - Patent Rights - Retention By The Contractor (Long Form) (JAN 1997)
(will be included if the successful offeror is not a small business or a non-profit organization)
- 52.228-7 - Insurance - Liability To Third Persons (MAR 1996)
- 52.230-2 - Cost Accounting Standards (APR 1998)
- 52.230-3 - Disclosure And Consistency Of Cost Accounting Practices (APR 1998)
- 52.230-6 - Administration Of Cost Accounting Standards (APR 2005)
- 52.232-17 - Interest (JUN 1996)
- 52.232-18 - Availability Of Funds (APR 1984)
- 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)
- 52.232-33 - 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)
- 52.242-1 - Notice Of Intent To Disallow Costs (APR 1984)
- 52.242-3 - Penalties For Unallowable Costs (MAY 2001)
- 52.242-13 - Bankruptcy (JUL 1995)
- 52.243-2 - Changes - Cost-Reimbursement (AUG 1987) - Alternate V (APR 1984)
- 52.244-2 - Subcontracts (AUG 1998) - Alternate I (JAN 2006)
- 52.244-5 - Competition In Subcontracting (DEC 1996)
- 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)
- 52.247-1 - 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)
- 52.252-6 - 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 (DEC 2006)
- 252.211-7003 - Item Identification And Valuation (JUN 2005) (fill in)
- 252.215-7000 - Pricing Adjustments (DEC 1991)
- 252.215-7002 - Cost Estimating System Requirements (DEC 2006)
- 252.219-7003 - Small Business And Small Disadvantaged Business Subcontracting Plan (DoD Contracts) (APR 1996)
- 252.219-7004 - Small, Small Disadvantaged And Women-Owned Small Business Subcontracting Plan (Test Program) (JUN 1997)
- 252.223-7004 - Drug-Free Work Force (SEP 1988)
- 252.223-7006 - Prohibition On Storage And Disposal Of Toxic And Hazardous Materials (APR 1993)
- 252.225-7012 - Preference For Certain Domestic Commodities (JAN 2007)
- 252.225-7013 - Duty Free Entry (OCT 2006)

- 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)
- 252.227-7000 - Non Estoppel (OCT 1966)
- 252.227-7001 - Release Of Past Infringement (AUG 1984)
- 252.227-7013 - Rights In Technical Data -- Noncommercial Items (NOV 1995)
- 252.227-7014 - Rights In Noncommercial Computer Software And Noncommercial Computer Software Documentation (JUN 1995)
- 252.227-7016 - Rights In Bid Or Proposal Information (JUN 1995)
- 252.227-7020 - Rights in Special Works (JUN 1995)
- 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)
- 252.231-7000 - Supplemental Cost Principles (DEC 1991)
- 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)
- 252.242-7004 - Material Management And Accounting System (NOV 2005)
- 252.243-7002 - Requests For Equitable Adjustment (MAR 1998)
- 252.244-7000 - Subcontracts For Commercial Items And Commercial Components (DoD Contracts) (JAN 2007)
- 252.245-7001 - Reports Of Government Property (MAY 1994)
- 252.246-7001 - Warranty Of Data (DEC 1991)
- 252.246-7003 - Notification Of Potential Safety Issues (JAN 2007)
- 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)

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, 6 Pages.
- J-2** Attachment (2) - DD Form 254, Contract Security Classification Specification, Ser 020-07 Dated 20070323 – 2 Pages.
- J-3** Attachment (3) – Personnel Qualifications, 6 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/repsandcerts.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.

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

52.215-1 - Instructions To Offerors- Competitive Acquisition (JAN 2004)

- 52.215-5 - Facsimile Proposals (OCT 1997)
 Paragraph (c) is completed as follows: (202) 767-0430 (primary) or (202) 767-0494 (alternate). In addition proposals may be transmitted by e-mail to Jamie.brown@nrl.navy.mil (primary) or jan.bays@nrl.navy.mil (alternate) in either Microsoft Word (2000 or earlier) or pdf format.
- 52.215-16 - Facilities Capital Cost Of Money (JUN 2003)
- 52.219-24 - Small Disadvantaged Business Participation Program - Targets (OCT 2000)
- 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)

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.JS

RFP No. N00173-07-R-JS06

Closing Date: June 11, 2007

Time: 4:00 pm, 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>

If facsimile proposals are authorized, contracting officers may request offeror(s) to provide the complete; original signed proposal at a later date.

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 below in Section L-12.

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

The Government contemplates award of a Cost Plus Fixed Fee term type 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 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-10 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-11 VOLUME I - TECHNICAL/MANAGEMENT PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 2 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 offer 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:

TECHNICAL UNDERSTANDING

Provide documentation to demonstrate understanding and ability to perform each of the technical requirement or task areas in the Statement of Work as listed below:

- 1) Successful implementation of ESM prototype hardware and software
- 2) Facilities, equipment, and expertise provided to support highly integrated functional devices. Specifically, clean-room facilities to produce, assemble and repair MMIC components and modules, and repair of VLSI and MSW components.
- 3) Knowledge of ESM systems, sub-systems, and components.

PERSONNEL QUALIFICATIONS

Provide resumes that demonstrate experienced personnel with certification and/or educational backgrounds with the ability to perform the required tasks of the Statement of Work. Resumes should demonstrate the following:

- 1) Previous experience of key personnel including the degree to which they meet the requirements set forth in the personnel qualifications.
- 2) Ability to provide appropriately cleared personnel on short notice travel worldwide for as long as 4-6 weeks to support overseas customers, specifically NSA, ONI and FMS Projects.
- 3) Ability to provide qualified personnel to embark in US ships, submarines and DoD aircraft to support customer requirements.
- 4) Ability to provide SCI Cleared personnel to support Intelligence Community Customers (NSA and ONI)

MANAGEMENT

Provide documentation to show experience of contractor in managing tasks as described in the Statement of Work and as listed below:

- 1) Corporate structure as related to contract, defining responsibilities, authorities, and accountabilities.
- 2) Ability to provide rapid turn-around evaluation/repairs (5-7 working days) on the components.
- 3) Capability to provide a secure website to archive, access and review contract CDRLs, working documents, and other information related to project tasks.

L-12 VOLUME II - BUSINESS PROPOSAL

REQUIRED COPIES: 1 ORIGINAL AND 2 COPIES

(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.

L-13 TRAVEL AND MATERIAL ESTIMATES - FOR EVALUATION PURPOSES ONLY

The travel and material set forth below must be included in each offeror's cost proposal. During the term of the contract, the contractor will be reimbursed actual and verifiable travel and material expenses.

- a) The Government estimates the travel costs for this effort to be \$150,000.00 per year.
- b) The Government estimates the material costs for this effort to be \$1,400,000.00 per year.
- c) The travel and material estimates are direct costs and the offeror should add applicable indirect costs, if any.

**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. The Technical and Cost factors are each more important than the Small Business Participation factor.

M-2 EVALUATION FACTORS FOR AWARD

Proposals will be evaluated in accordance with the following criteria. The technical factor is more important than the cost factor. Technical Understanding and Personnel Qualifications are of equal importance and more important than Management/Corporate Experience.

M-2-1. TECHNICAL/MANAGEMENT**(1) TECHNICAL UNDERSTANDING**

The proposals will be evaluated on the technical understanding based upon its knowledge and understanding of each of the required task areas described in the Statement of Work.

(2) PERSONNEL QUALIFICATIONS

The proposed personnel will be evaluated on the experience and qualifications of the proposed personnel relevant to the proposed task.; the quantity and quality of the Offeror's corporate experience relevant to the proposed task; and the previous experience of the key personnel including the degree to which they meet the requirements set forth in the Personnel Qualifications.

(3) MANAGEMENT

The proposals will be evaluated on the capability and suitability for performing under the required tasks in the Statement of Work.

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-2-3 SMALL BUSINESS PARTICIPATION

(a) The extent of participation of small businesses and historically black colleges or universities and minority institutions in performance of the contract will be evaluated on the basis of the proposed extent of participation of such firms in terms of the value of the total acquisition and the complexity and variety of the work such firms are to perform.

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 involved in a wide range of technical activities that include basic research, advanced concepts development, promotion of innovative technologies, design, fabrication and testing of complex Electronic Warfare (EW) systems (including hardware and software), and detailed analysis. More specific areas of interest include proof of concept design and fabrication, demonstration of innovative solutions of wide area remote sensing, surveillance of the world's oceans, and systems analysis. This Statement of Work describes the engineering and technical support services to be provided to the Tactical Electronic Warfare Division (TEWD) of the Naval Research Laboratory, Washington, D.C.

2.0 BACKGROUND

The Tactical Electronic Warfare Division (TEWD) at NRL has developed advanced EW technologies to support NRL's research and development (R&D) mission and provide the operational U.S. Navy, as well as National Intelligence agencies, the U.S. Coast Guard, and International Programs, with technology and equipment needed in support of operational missions as well as training activities. Electronic Warfare Support Measures (ESM) technology development at NRL focuses on the ability to detect, locate and analyze signals in the tactical environment to provide a timely and precise representation of the tactical environment, and conducts research into advanced ESM collection and processing techniques – typically including ESM system design and prototype development. Work spans the spectrum of ESM system design and development including RF, digital and analog signal processing components, and software.

ESM functions are performed using specialized hardware and software tools to detect, analyze and present scenario information. ESM developments are applicable to a wide range of naval platforms including ships, aircraft, submarines, unmanned vehicles, and land-based sites. Simulation serves to stimulate state-of-the-art EW receivers and signal processors for thorough test and evaluation. Test and evaluation techniques employ RF signals, digital or software descriptions of environment emissions. The ESM Branch supports Electronic Warfare sensor and processing development for a wide range of platforms. Surface ship ESM technology development is provided through the AN/SLQ-32 Surface Electronic Warfare Improvement Program (SEWIP) and the AN/SSX-1 ESM System programs as well as the Multi-function Radar (MFR) Program, and the Office of Naval Research (ONR) EW Threat Warning and Self Protection research initiatives. Likewise, aircraft ESM is supported for Navy F-18, E-2, EA-6 and EP-3 aircraft. Continued research at NRL is expected to focus on the continuing improvement of ESM hardware and software capabilities in order to provide accurate environment data

as the threat and radiating sources evolve. Additionally, ESM development activities are provided to support the mission objectives of the National Intelligence agencies, such as the National Security Agency (NSA), the Office of Naval Intelligence (ONI), the U.S. Coast Guard in the Department of Homeland Security, and International Foreign Military Sales (FMS) Programs.

3.0 SCOPE

The required technical support defined herein comprises a number of interrelated task areas which vary in both their technical dimensions and deliverable product. Therefore, a high degree of inter-task coordination will be required to perform the tasking described below. The contractor shall provide scientific, technical, engineering and project administrative support to accomplish the various taskings, which include ESM equipment design and engineering (hardware and software); ESM systems analysis (architectural and functional tradeoffs addressing the ESM operationally-driven system metric); and ESM equipment test and evaluation data collection, analysis and database management. Data and special signal processing equipment availability as well as security requirements dictates that a portion of the work be performed at NRL. Design implementations include hardware/material procurements and fabrication, software products, incorporation of commercial-off-the-shelf (COTS) or commercially procured components and subsystems when prudent, integration into existing systems, interfacing, testing, repair/rework, and documentation.

This contract requires SCI data installation in NRL developed research equipment. Therefore, the NRL research product implemented with this contract contains SCI. In addition, this contract requires installation, training, maintenance and retrieval of NRL equipment at SCI installations of the Navy, Army, Air Force and Marines, as well as intelligence community installations. Consequently, this contract requires that the support research be performed at the SCI security level as required.

The contractor shall provide engineering and technical support for NRL ESM systems and software tasks by developing hardware concepts, performing systems analysis and systems engineering tasks, developing software programs and technology demonstrations, and performing test and evaluation of demonstration concepts. The contractor shall provide engineering and technical support for NRL prototype ESM system design, development, test, and evaluation as covered under the task items.

3.1 TASKS

3.1.1 TASK I -- ESM Hardware and Software Engineering Support

3.1.2 TASK II -- ESM Technology Development Using Multi-Disciplinary, Highly Integrate Functional Components

3.1.3 TASK III -- ESM Systems Analysis Support (Addressing Architectural and Functional Tradeoffs to Optimize Performance in Accordance with the ESM Operationally-Driven System Metric)

3.1.4 TASK IV -- ESM Electronic, Mechanical and Optical Specialist Support

3.1.5 TASK V -- ESM Technology Development Support for International Programs

3.1.6 TASK VI -- ESM Technology Development Support to Demonstrate Critical ESM Technologies

4.0 DEFINITIONS:

Electronic Warfare: Any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. The three major subdivisions within electronic warfare are electronic attack, electronic protection and electronic warfare support.

Electronic Warfare Support: That division of electronic warfare involving actions tasked by, or under direct control of, an operational commander to search for, intercept, identify and locate sources of intentional and unintentional radiated electromagnetic energy for the purpose of immediate threat recognition. Thus, electronic warfare support provides information required for immediate decisions involving electronic warfare operations, threat avoidance, targeting and other tactical actions. Also called ES.

Electronic Warfare Support Measures: That division of electronic warfare involving actions taken under direct control of an operational commander to search for, intercept, identify and locate sources of radiated electromagnetic energy for the purpose of immediate threat recognition. Thus, electronic warfare support measures provide a source of information required for immediate decisions involving ECM, ECCM, avoidance, targeting and other tactical employment of forces. Also called ESM.

ESM Receiver: A receiver used to scan the microwave electromagnetic spectrum looking for radiated activity. When a signal is detected it could be from a radar or from a communication data link. The ESM receivers discussed in the SOW are being tested for radar signal detection only. An ESM receiver is composed of (1) an RF front end that converts the RF pulses in the environment into an intermediate pulse format (IF, analog, or digital), (2) a preprocessor that converts the intermediate pulse format environment into a digital pulse format, and (3) the processor that converts the digital pulse format of the environment into a signal level description of the environment.

MMIC: Monolithic Microwave Integrated Circuit

IF: Intermediate Frequency. In this context, IF is loosely defined as electromagnetic energy having a frequency in the range from 20 MHz up through 2 GHz, and is the result of a ESM RF receiver down-conversion process.

RF: Radio Frequency. In this context, RF is loosely defined as electromagnetic energy having a frequency in the range from 400 MHz up through 110 GHz.

Scenario: A description of the movements and emissions of radiating and moving platforms over a defined period of time. A scenario is typically defined for a specific geographical location. For purposes of this SOW, the ESM Environmental Simulator (ESMES) must work at the pulse level using the information from a scenario. Typically a data file is used by the ESMES system that describes the time, location, and movement of the radar and ESM platforms within a geographical lay-down.

5.0 WORK REQUIREMENTS

5.1 TECHNICAL REQUIREMENTS

5.1.1 TASK I -- ESM Hardware and Software Engineering Support

The contractor shall provide ESM hardware and software development support to NRL programs as defined by detailed tasking from the COR.

The contractor shall design and develop both hardware (RF and digital) and software capabilities to meet NRL ESM requirements.

The contractor shall provide engineering support to NRL ESM R&D projects and system demonstrations with hardware and software engineering expertise. Top-level software and hardware designs, as well as the hardware platforms, operating systems and programming languages to be used will be selected or approved by the NRL COR.

The contractor shall support software design and development for NRL ESM R&D activities. Software work requires creating future ESM R&D prototype systems including top-level software system design.

The contractor shall provide software support to NRL R&D efforts requiring programming efforts including but not limited to the C, C++, XML, and JAVA programming languages. NRL R&D work often requires the development of prototype ESM systems, which include software for control, signal processing, and display. The task requires some familiarity with the field of radar pulse processing. Familiarity with the VxWorks operating system is desirable. Support personnel shall gain a thorough understanding of existing and developmental pulse processing systems and use that knowledge to create and maintain software under the direction of Branch employees.

The contractor shall follow Software Engineering procedures as established by NRL TWED personnel, including Version Control, Unit Testing, System Testing, and software source code documentation.

This task may require that time be spent on-site at NRL. This requirement will vary with the specific work task. For example, during times of system integration and test, this task will be performed on-site. Source code will not be transported or transmitted out of NRL building 210 without the prior approval of the COR. On site location will be at the direction of the COR.

5.1.2 TASK II -- ESM Technology Development Using Multi-Disciplinary, Highly Integrated Functional Components

Current and projected emitter environments focuses research emphasis on advanced Electronic Warfare Support Measure (ESM) technology that, when applied to systems, can perform multiple, co-pulse, simultaneous signal detection and analysis at great throughput rates. As such, equipment is applied to various system architectures in support of ESM systems development to detect and resolve increasingly dense emitter environments with individual emitter characteristics that include varied forms of radio frequency (RF) modulation.

The contractor shall develop ESM technology demonstration equipment and perform evaluations. The proposed demonstrations may include a wide range of functional elements, including receivers, antennas, delay lines, converters, tuners, quantizers and processors.

The contractor shall also provide engineering and technical support for the analysis, design, development and performance evaluation of ESM equipment development. The contractor shall implement critical circuit elements using miniaturization fabrication for compact ESM equipment implementation for lightweight shipboard and/or airborne applications.

The ESM equipment has application to advanced capability demonstrations. A primary system metric is high probability of intercept with high fidelity parameter measurement in dense and highly diverse emitter environments. Compact ESM equipment packaging supports needs for lightweight, low-in-power consumption characteristics, suitable for use in adverse military environments. The maximum use of monolithic circuits, and batch processing technology (VLSI, MMIC, MSW, optical processing is required where technically feasible. The contractor shall design, develop and test components and sub-assemblies necessary for the fabrication of the designated equipment. The contractor shall fabricate hybrid integrated components necessary for the construction of a complete receiver/processor system.

The contractor shall provide detailed descriptions of proposed ESM equipment architectures, microelectronics capabilities and integrated receiver/processor performance. The contractor shall fabricate, test and deliver individual or integrated operating assemblies.

5.1.3 TASK III -- ESM Systems Analysis Support (Addressing Architectural and Functional Tradeoffs to Optimize Performance in Accordance with the ESM Operationally-Driven System Metric)

The contractor shall provide system engineering support for the development of ESM System Architecture(s) required to perform designated ESM project functions, which include:

- (a) Analysis of ESM mission requirements, including consideration of current and projected threat emitter signal environments;
- (b) Consideration of platform physical constraints such as space, weight, power, ship and aircraft platform structures and physical environment factors;
- (c) Identification and discussion of tradeoffs between the functional element approaches necessary to satisfy the ESM system technical requirements for parameter measurement precision, signal densities, command, control and reporting requirements;
- (d) Development of optimized ESM System architecture(s) that addresses the system metric and satisfies the technical requirements in (c) above;

In accomplishing this task, the contractor shall apply detailed knowledge of state-of-the-art ESM sub-system components, such as wideband delay lines, channelizers, dynamic range selective limiters, antennas, microwave receiver front-ends, digital signal processors, a wide range of ESM architectures and control and display functions (hardware and software implementations). In addition, the contractor shall define and specify interfaces within the system and with the operator personnel.

The contractor shall provide support in preparing sub-system procurement specifications, test and evaluation procedures for evaluation of sub-system performance, fabrication and assembly of system hardware and test and evaluation of the ESM receiver/processor system. Final system testing will be performed in the field; the contractor shall support these tests and evaluations as well as those conducted at NRL. The activities in this task will also support the transition of advanced ESM technologies to Acquisition Programs of Record (POR).

5.1.4 TASK IV -- ESM Electronic, Mechanical and Optical Specialist Support

The contractor shall specify, design, assemble and test electronic, mechanical and optical components and subassemblies. The contractor shall maintain records of design data and test results. The contractor shall develop test and trouble-shooting techniques necessary to determine proper operation, or cause of malfunction, of electronic and mechanical subassemblies.

The contractor shall provide support to the NRL TEWD scientific personnel in electronic, mechanical and optical design and development in support of microwave and optical processing projects. The contractor shall perform mechanical layout and construction and aid engineering personnel in evaluating sub-assemblies and equipment under development. Since much of the work under this task area spans the technology disciplines, the contractor shall provide precision fabrication and assembly techniques not customarily required in mechanical assemblies. The contractor shall fabricate microwave components and hardware to support digital receiver/processor technology.

The contractor shall provide engineering and technical support of the Tactical Electronic Warfare Environment Simulator (TEWES) family of systems when used in the evaluation of ESM equipment, including electronic, microwave, MSW and acousto-optical modules. The contractor shall provide support during the integration of the TEWES system with the ESM equipment under evaluation and provide technical data for inclusion in the test and evaluation reports.

5.1.5 TASK V -- ESM Technology Development Support for International Programs

The Tactical EW Division has provided research and technical development services on advanced EW Systems and technology for future employment by the U.S. Navy. Under new international programs, the Tactical EW Division is now providing these same services and products in support of U.S. foreign policy objectives to foreign governments. The Tactical EW Division has assumed responsibility as the Navy International Programs Office's (NIPO) program execution agent and case management assistant for International Foreign Military Sales (FMS) programs that support advanced EW Systems development for a number of international customers. This task covers site survey, installation, training, maintenance support and technical services to support NRL in the execution of FMS Program objectives.

Specifically, the contractor shall provide the following support:

(a) Site Survey:

- Provide support to NRL in evaluating each site's suitability for ESM operations, and recommend facility or platform modifications, and equipment configuration and location.

- Provide support to NRL in conducting site and platform surveys and examine physical layout, climate, target environment, communications, personnel qualifications, and security for the FMS customer.

(b) Installation:

- Provide support to NRL in developing installation plans and install equipment on FMS platforms and sites.
- On a cost-reimbursable basis as directed by the COR, purchase accessory equipment to support ESM installations at each location.
- Pack, ship and install Government Furnished Equipment (GFE) ESM systems, supporting optics and communications data links and evaluate performance at each location. After installation, photograph all installed GFE and deliver a complete equipment inventory to NRL.
- Ensure GFE is adequately prepared and calibrated to NRL standards prior to shipment. After installation, use approved NRL GFE test equipment to perform calibration and system end-to-end tests, and document results.
- Provide support to NRL in evaluating system and operator performance and record and observed anomalous ESM data for NRL analysis.

(c) Training:

- Tailor existing English language training materials, operator and maintenance manuals and ESM computer-based training for the equipment configuration applicable to the FMS site or platform. The resulting training documentation shall cover ESM System theory, concept of operations, high-level equipment topology, general operation, and equipment safety.
- Coordinate with commercial equipment vendors to setup operator and maintenance training for the FMS customers on ESM Systems equipment, including RF microwave receivers, antennas, optics systems and communications systems, as required.
- The contractor will also be required to provide operations and maintenance on-the-job training (OJT) as required during equipment installation and follow-on flyaway visits.

(d) Maintenance Support:

- Provide in-CONUS and flyaway support for all installed ESM equipment, communications equipment and optics. Flyaway teams shall perform emergency, unscheduled maintenance on broken or suspect equipment, as well as perform scheduled system checks to ensure the systems meets established performance thresholds.
- Develop a limited routine maintenance checklist to include equipment troubleshooting, cleaning, and general care and safety precautions for international operators.

- Establish a depot of spare equipment and parts at the contractor's facility. At the COR's direction and with customer approval, establish an in-country depot of test equipment and spares.
- Implement a GFE database to track the full compliment of equipment, spare parts, and related documentation provided to the international FMS customer and at the contractor facility. This database shall be updated periodically.
- Recommend and update a spares package by identifying those components with the highest predicted and observed failure rates, those components critical to operations, and those that cannot be purchased on the local economy.
- Refurbish, repair and update hardware and software to meet operational objectives. For previously delivered ESM Systems and related equipment for FMS Programs, the contractor shall provide rapid turn-around repair and rework support on items, to include but not limited to, those listed below. An Equipment Failure/Repair Report (CDRL A0003) will be prepared for every repair/rework action and submitted to the COR.

(1) IFD-110 IF Digitizer VME Card, P/N 22132-1

(2) BIT-160 IF BIT Test VME Card, P/N 22653-1

(3) AS-1200A Antenna, P/N 22400-1

(4) AS-1200A-CE Cable Extender Box, P/N 23174-1

(5) MMIC 0.5-18 GHz RF Receiver, Model R-300A

(e) Technical Services:

- As directed, the contractor shall assist NRL in preparing and implementing plans, policies and meetings related to FMS Programs.
- Participate in the review of applicable documentation prior to release to the FMS customer.

5.1.6 TASK VI -- ESM Technology Development Support to Demonstrate Critical ESM Technologies

Over the years, the Tactical EW Division has been involved in the development of proof-of-principle ESM hardware and software integrated into full scale, deployable prototypes and provided them to the Warfighter to experiment with during Fleet Battle Experiments, Limited Objective Experiments and Sea Trial Exercises. These experimentation initiatives are sponsored primarily by the Office of Naval Research (ONR) under PE0603758N Navy Warfighting Experiments and Demonstrations and ONR's SwampWorks Projects which provide Operational Experimentation Articles (OEAs) for the warfighter to explore and experiment with new Concept of Operations (CONOPs) in the most realistic operational scenarios possible. Other ESM technology demonstrations supported are those requested by the Commander Fleet Forces Command (CFFC) Norfolk VA, the Naval Warfare Development Command, the numbered Fleet Commanders, and the Intelligence community.

New, state-of-the-art ESM technologies are required to address the operational need for more rapid and precise assessment of the electromagnetic environment, even as the proliferation and modulation complexity of radar controlled equipment increases. Task II employs available collateral technology constructed to perform the system function required. Task VI addresses the development and demonstration of advanced ESM technology components and devices that can be applied within ESM system architectures and deployable, robust system prototypes.

The contractor shall develop ESM technology demonstrations and module technology and perform evaluations. Functions that the contractor shall pursue include channelization, high throughput signal analysis, high speed signal processing, direction finding technologies, dynamic range extension, wideband RF conversion and wideband RF delay. Technologies will be implemented in modules and applied to ESM equipment in support of ESM systems development to detect and resolve increasingly dense emitter environments with individual emitter characteristics that include varied forms of RF modulation.

The contractor shall provide engineering and technical support for the analysis, design, development and performance evaluation of ESM technology demonstrations and modules. The contractor shall implement critical circuit elements using miniaturization fabrication techniques for compact ESM module implementation for multiple applications.

The ESM modules have application to advanced capability ESM system demonstrations. Compact ESM module packaging support needs for lightweight, low-in-power consumption characteristics, suitable for use in adverse military environments. The maximum use of monolithic circuits and batch processing technology (VLSI, MMIC, MSW, optical processing) will be required where technically feasible. The contractor shall design, develop and test components and sub-assemblies necessary for the fabrication of the designated equipment. The contractor shall be responsible for the fabrication of hybrid integrated components necessary for ESM equipment, and must have "clean room" facilities available to accomplish this.

The contractor shall provide detailed descriptions of its proposed functional modules, microelectronics capabilities and integrated receiver/processor performance. The contractor shall fabricate, test and deliver individual or integrated operating assemblies.

In order to support ESM technology demonstrations, the contractor shall develop experimentation and demonstration plans, platform installation plans, and participate in ESM data collection experiments within the continental United States- (CONUS) and/or at locations overseas on a variety of platforms. The contractor shall install, operate and maintain ESM equipment developed at NRL. The contractor shall travel to sites and activities world-wide, deploy in Naval surface ships and submarines and embark in aircraft to accomplish demonstration objectives.

For previously delivered demonstration equipment and ONR OEAs, the contractor shall provide rapid turn-around repair and rework support on items listed below

- (a) IFD-110 IF Digitizer VME Card, P/N 22132-1
- (b) BIT-160 IF BIT Test VME Card, P/N 22653-1
- (c) IFD-120E IF Digitizer PMC Card, P/N 24537-1
- (d) IFD-120E-SBC VME Card Assembly, P/N 24884-1
- (e) AS-1200A Antenna, P/N 22400-1
- (f) AS-1200A-CE Cable Extender Box, P/N 23174-1
- (g) MMIC 0.5-18 GHz RF Receiver, Model R-300A

The contractor shall train civilian and military personnel in the operation and maintenance of ESM receiver/processor and ESM System components developed by NRL. The contractor shall prepare training notes and manuals to support the training sub-tasks.

CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved

OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 110 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. 0002/0004/0006/0008/0010	B. EXHIBIT A	C. CATEGORY: TDP _____ TM _____ OTHER _____
--	------------------------	---

D. SYSTEM/ITEM ESM Technology Development Support	E. CONTRACT/PR NO. 57-2020-07	F. CONTRACTOR
---	---	----------------------

1. DATA ITEM NO. A004	2. TITLE OF DATA ITEM Final Technical Report	3. SUBTITLE
---------------------------------	--	--------------------

4. AUTHORITY (Data Acquisition Document No.)	5. CONTRACT REFERENCE SOW	6. REQUIRING OFFICE NRL Code 5723
---	-------------------------------------	---

7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED D (See Blk 16)	10. FREQUENCY 1 TIME	12. DATE OF FIRST SUBMISSION EOC	14. DISTRIBUTION		
8. APP CODE N/A	11. AS OF DATE See block 16	13. DATE OF SUBSEQUENT SUBMISSION 60 Days after EOC	a. ADDRESSEE		b. COPIES	
					Draft	Final
					Reg	Repro

16. REMARKS The contractor shall prepare final technical reports within 60 days after completion for all tasks and sub-tasks in progress. These reports shall include a detailed discussion of the technical findings and accomplishments made on completed tasks and sub-tasks. The reports shall be of publication quality and include subject reference matter. The reports shall include, but not be limited to, the following information: (a) Discussion of task or sub-task objectives; (b) Discussion of technical requirements; (c) Technical results; (d) Conclusions and recommendations for future research; (e) Description of significant hardware and/or software developments. 9. Distribution Statement Required will read as follows. Distribution Statement D: Distribution authorized to the Department of Defense and to U.S. DoD Contractors only for administrative and operational use, (* insert date of contract award). Other requests for this document shall be referred to Commanding Officer, Naval Research Laboratory, Washington, D.C. 20375-5339.	NRL Code 5723		1	2	
	NRL Code 5720			1	
	DTIC			1	
15. TOTAL	→	0	1	4	

G. PREPARED BY NRL Code 5723	H. DATE 4/19/2007	I. APPROVED BY	J. DATE
--	-----------------------------	-----------------------	----------------

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

CONTRACT DATA REQUIREMENTS LIST

(1 Data Item)

Form Approved
OMB No. 0704-0188

The public reporting burden for this collection of information is estimated to average 110 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. 0002/0004/0006/0008/0010	B. EXHIBIT A	C. CATEGORY: TDP _____ TM _____ OTHER _____
--	------------------------	---

D. SYSTEM/ITEM ESM Technology Development Support	E. CONTRACT/PR NO. 57-2020-07	F. CONTRACTOR
---	---	----------------------

1. DATA ITEM NO. A007	2. TITLE OF DATA ITEM Contractor On-Site Labor Report	3. SUBTITLE
---------------------------------	---	--------------------

4. AUTHORITY (Data Acquisition Document No.)	5. CONTRACT REFERENCE SOW	6. REQUIRING OFFICE NRL Code 5723
---	-------------------------------------	---

7. DD 250 REQ LT	9. DIST STATEMENT REQUIRED N/A	10. FREQUENCY MTHLY	12. DATE OF FIRST SUBMISSION 35 DAC	14. DISTRIBUTION		
8. APP CODE N/A		11. AS OF DATE	13. DATE OF SUBSEQUENT SUBMISSION 5 DARP	a. ADDRESSEE	b. COPIES	
					Draft	Final
					Reg	Repro

16. REMARKS The contractor shall deliver the On-Site Labor Report no later than five (5) days after the end of each reporting month. The report must include as a minimum the following data: Reporting Period: Contract Number (and Order Number, if applicable): Contract Value: Current Funding: Amount Expended in Current Period: Total Expended to Date: Date Submitted: Labor (including subcontractors) - Show employee name, number of hours, and total amount billed for contractor employees working on-site at NRL. If the contractor employees worked on multiple tasks (as defined by the COR), the numbers of hours worked on each task must be shown separately. Contractor labor hours working at ITT sites will be excluded from this report.	NRL Code 5723		1		
	NRL Code 5720			1	
	NRL Code 5720.B0			1	
	NRL Code 5702			1	
15. TOTAL →	0	1	3		

G. PREPARED BY NRL Code 5723	H. DATE 4/19/2007	I. APPROVED BY	J. DATE
--	-----------------------------	-----------------------	----------------

17. PRICE GROUP
18. ESTIMATED TOTAL PRICE

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: 020-07 a. FACILITY CLEARANCE REQUIRED <div style="text-align: center;">TOP 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		X		a. ORIGINAL <i>(Complete date in all cases)</i>		DATE (YYYYMMDD) 20070323																																																																																					
b. SUBCONTRACT NUMBER				b. REVISED <i>(Supersedes all previous specs)</i>		REVISION NO. DATE (YYYYMMDD)																																																																																					
X c. SOLICITATION OR OTHER NUMBER 57-2020-07		DUE DATE (YYYYMMDD)		c. FINAL <i>(Complete Item 5 in all cases)</i>		DATE (YYYYMMDD)																																																																																					
4. IS THIS A FOLLOW-ON CONTRACT? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO. If Yes, complete the following: Classified material received or generated under <u>N00173-02-C-2056</u> <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 ESM TECHNOLOGY DEVELOPMENT SUPPORT																																																																																											
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">10. CONTRACTOR WILL REQUIRE ACCESS TO:</th> <th style="width: 5%;">YES</th> <th style="width: 5%;">NO</th> <th style="width: 40%;">11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:</th> <th style="width: 5%;">YES</th> <th style="width: 5%;">NO</th> </tr> </thead> <tbody> <tr> <td>a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION</td> <td></td> <td style="text-align: center;">X</td> <td>a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>b. RESTRICTED DATA</td> <td></td> <td style="text-align: center;">X</td> <td>b. RECEIVE CLASSIFIED DOCUMENTS ONLY</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION</td> <td></td> <td style="text-align: center;">X</td> <td>c. RECEIVE AND GENERATE CLASSIFIED MATERIAL</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>d. FORMERLY RESTRICTED DATA</td> <td></td> <td style="text-align: center;">X</td> <td>d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>e. INTELLIGENCE INFORMATION</td> <td></td> <td style="text-align: center;">X</td> <td>e. PERFORM SERVICES ONLY</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(1) Sensitive Compartmented Information (SCI)</td> <td style="text-align: center;">X</td> <td></td> <td>f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>(2) Non-SCI</td> <td style="text-align: center;">X</td> <td></td> <td>g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER</td> <td></td> <td></td> </tr> <tr> <td>f. SPECIAL ACCESS INFORMATION</td> <td></td> <td style="text-align: center;">X</td> <td>h. REQUIRE A COMSEC ACCOUNT</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>g. NATO INFORMATION</td> <td></td> <td style="text-align: center;">X</td> <td>i. HAVE TEMPEST REQUIREMENTS</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>h. FOREIGN GOVERNMENT INFORMATION</td> <td></td> <td style="text-align: center;">X</td> <td>j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>i. LIMITED DISSEMINATION INFORMATION</td> <td></td> <td style="text-align: center;">X</td> <td>k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>j. FOR OFFICIAL USE ONLY INFORMATION</td> <td style="text-align: center;">X</td> <td></td> <td>l. OTHER <i>(Specify)</i></td> <td></td> <td></td> </tr> <tr> <td>k. OTHER <i>(Specify)</i></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>								10. CONTRACTOR WILL REQUIRE ACCESS TO:	YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NO	a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION		X	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		X	b. RESTRICTED DATA		X	b. RECEIVE CLASSIFIED DOCUMENTS ONLY		X	c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION		X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	X		d. FORMERLY RESTRICTED DATA		X	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE	X		e. INTELLIGENCE INFORMATION		X	e. PERFORM SERVICES ONLY		X	(1) Sensitive Compartmented Information (SCI)	X		f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES		X	(2) Non-SCI	X		g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER			f. SPECIAL ACCESS INFORMATION		X	h. REQUIRE A COMSEC ACCOUNT		X	g. NATO INFORMATION		X	i. HAVE TEMPEST REQUIREMENTS		X	h. FOREIGN GOVERNMENT INFORMATION		X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS		X	i. LIMITED DISSEMINATION INFORMATION		X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE		X	j. FOR OFFICIAL USE ONLY INFORMATION	X		l. OTHER <i>(Specify)</i>			k. OTHER <i>(Specify)</i>					
10. CONTRACTOR WILL REQUIRE ACCESS TO:	YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NO																																																																																						
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION		X	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY		X																																																																																						
b. RESTRICTED DATA		X	b. RECEIVE CLASSIFIED DOCUMENTS ONLY		X																																																																																						
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION		X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	X																																																																																							
d. FORMERLY RESTRICTED DATA		X	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE	X																																																																																							
e. INTELLIGENCE INFORMATION		X	e. PERFORM SERVICES ONLY		X																																																																																						
(1) Sensitive Compartmented Information (SCI)	X		f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES		X																																																																																						
(2) Non-SCI	X		g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER																																																																																								
f. SPECIAL ACCESS INFORMATION		X	h. REQUIRE A COMSEC ACCOUNT		X																																																																																						
g. NATO INFORMATION		X	i. HAVE TEMPEST REQUIREMENTS		X																																																																																						
h. FOREIGN GOVERNMENT INFORMATION		X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS		X																																																																																						
i. LIMITED DISSEMINATION INFORMATION		X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE		X																																																																																						
j. FOR OFFICIAL USE ONLY INFORMATION	X		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)

Commanding Officer, Naval Research Laboratory, Washington, DC 20375-5320 Code 5720

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 Top Secret facility clearance and personnel available with final DoD granted personnel security clearance commensurate with the 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 MARILYN S. OVERTON	b. TITLE CONTRACTING SECURITY OFFICER	c. TELEPHONE (Include Area Code) 202-767-0793
--	--	--

d. ADDRESS (Include Zip Code)
 Naval Research Laboratory
 Washington, DC 20375-5320

17. REQUIRED DISTRIBUTION

<input checked="" type="checkbox"/>	a. CONTRACTOR
<input type="checkbox"/>	b. SUBCONTRACTOR
<input checked="" type="checkbox"/>	c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
<input type="checkbox"/>	d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
<input type="checkbox"/>	e. ADMINISTRATIVE CONTRACTING OFFICER
<input checked="" type="checkbox"/>	f. OTHERS AS NECESSARY 1226, 1223, 5720

e. SIGNATURE


PERSONNEL QUALIFICATIONS

1.0 GENERAL COMMENTS

These general comments apply to all positions. Since the requirements of this contract are for a small group of individuals, extreme specialization in any one area is generally less desirable than a degree of flexibility in accomplishing the tasks and providing the appropriate deliverables. All positions, except for the Planner/Program Analyst, may require some travel to both CONUS and overseas locations, and may also be required to deploy in Naval surface ships and submarines and embark in aircraft to accomplish task objectives. It is expected travel would not exceed more than a week in duration, however, short notice trips overseas for up to 4-6 weeks can be anticipated to support International Programs in TASK V and Technology Demonstrations in TASK VI. All positions require the individual to be in good health with no physical handicap since the duties require getting into small places to install or repair equipment, lifting moderate weights (up to 40 Lbs), working in and around Naval vessels and aircraft, and moving over rough terrain. All proposed positions must be capable of obtaining a DoD SECRET clearance at a minimum. Up to six of the scientist, engineering and technician positions will be required to hold SCI clearances for access to SCI spaces, and handling SCI data at Navy and other DoD activities, and Intelligence community sites.

2.0 LABOR CATEGORIES/QUALIFICATIONS

The following paragraphs set forth the minimum personnel requirements deemed necessary to perform the tasks set forth in the SOW. The contractor shall be capable of providing the personnel as directed by the COR according to level-of-effort requirements in the following labor categories and with the experience indicated. All proposed positions must be capable of obtaining a DoD SECRET clearance at a minimum.

Labor Category: SENIOR SCIENTIST

Education Requirements: MS or PE in Electrical Engineering or Physics, or technical education and/or technical experience at the Senior Scientist level. Education and experience is substituted on a one year to one year ratio. (Ex: one year of education and five years of experience would equal a MS/PE degree; two years of education and four years of experience would equal a MS/PE degree, etc.).

Experience Requirements: In addition to the above stated education requirements or the following experience is required: 15 years experience in electronic warfare (EW) systems intricate knowledge of the requirements, alternatives, workings, interrelationships and tradeoffs of EW systems and leading edge technologies relevant to these systems. 10 years experience in EW technology development. Demonstrated knowledge of electronic warfare support measures (ESM) system architectures and system metrics for tactical EW and surveillance functions aboard aircraft, ships, submarines and spacecraft. Demonstrated knowledge of emerging EW technologies, including high temperature superconductors (HTS), fiber optics, monolithic microwave integrated circuits (MMIC),

magnetostatic wave circuits (MSW) and optical processing. Demonstrated ability to define system functional interfaces, incorporate leading edge EW technology into functional modules and transition them into developed system architectures. Demonstrated ability to communicate (i.e., liaison) with leading scientists in the areas of EW technology interest in an effort to develop modules and system level demonstrations. This also includes a demonstrated capability in system and module definition and documentation and fluency in computer aided design (CAD) modeling of systems, microwave, optical and digital circuitry.

Labor Category: ASSOCIATE SENIOR SCIENTIST

Education Requirements: MS or PE in Electrical Engineering or Physics, or technical education and/or technical experience at the Associate Senior Scientist level. Education and experience is substituted on a one year to one year ratio. (Ex: one year of education and five years of experience would equal a MS/PE degree; two years of education and four years of experience would equal a MS/PE degree, etc.).

Experience Requirements: In addition to the above stated education requirements or the following experience is required: 5 years experience in EW parallel processing system architectures. 10 years experience in ESM system integration. Demonstrated intricate knowledge of the requirements, alternatives, workings, interrelationships, and tradeoffs of EW systems and leading-edge technologies relevant to these systems. 5 years experience in EW technology development. Demonstrated knowledge of ESM system architectures and system metrics for tactical EW and surveillance functions aboard aircraft, ships, submarines and spacecraft. Demonstrated knowledge of emerging EW technologies, high temperature superconductors (HTS), fiber optics, monolithic microwave integrated circuits (MMIC), magnetostatic wave circuits (MSW) and optical processing. Demonstrated ability to communicate (i.e., liaison) with leading scientists in the areas of EW technology interest in an effort to develop modules and system level demonstrations. This also includes a demonstrated capability in system and module definition and documentation and fluency in computer aided design (CAD) modeling of systems, microwave, optical and digital circuitry.

Labor Category: SCIENTIST

Education Requirements: BS in Electrical Engineering or Physics, or technical education and/or technical experience at the Scientist level. Education and experience is substituted on a one year to one year ratio. (Ex: one year of education and three years of experience would equal a BS degree; two years of education and two years of experience would equal a BS degree, etc.).

Experience Requirements: In addition to the above stated education requirements or the following experience is required: 3 years experience in ESM receiver technology development. Demonstrated knowledge of the requirements, alternatives, workings, interrelationships, and tradeoffs of EW systems and leading-edge technologies relevant to these systems. Demonstrated knowledge of emerging EW technologies, including high temperature superconductors (HTS), fiber optics, monolithic microwave integrated circuits (MMIC), magnetostatic wave circuits (MSW) and optical processing. Demonstrated ability to communicate (i.e., liaison) with leading scientists in the areas of EW technology interest in an effort to develop modules and system level demonstrations. This also

includes a demonstrated capability in system and module definition and documentation and fluency in computer aided design (CAD) modeling of systems, microwave, optical and digital circuitry.

Labor Category: COMPUTER SCIENTIST/SOFTWARE ENGINEER

Education Requirements: BS in Computer Science or Software Engineering or technical education and/or technical experience at the Scientist level. Education and experience is substituted on a one year to one year ratio. (Ex: one year of education and three years of experience would equal a BS degree; two years of education and two years of experience would equal a BS degree, etc.).

Experience Requirements: In addition to the above stated education requirements or the following experience is required: a minimum of 5 years experience in fields of computer software development and testing, systems engineering, project management, signal detection, geo-location and processing, and the development of land-based, ship-borne and airborne distributed systems. The individual must have experience with ESM System hardware, data collection, data base development and management, remote operations and real-time instrument control and cueing. The individual must have extensive experience with MS Windows, UNIX and LINUX based machines, and the C and C++ programming languages, as well as ORACLE and SQL data base languages. Familiarity with current state-of-the-art FPGA programming and development tools is highly desired.

Labor Category: ASSOCIATE ENGINEER (ELECTRICAL)

Education Requirements: BS in Electrical Engineering or Physics, or technical education and/or technical experience at the Associate Engineer (Electrical) level. Education and experience is substituted on a one year to one year ratio. (Ex: one year of education and three years of experience would equal a BS degree; two years of education and two years of experience would equal a BS degree, etc.).

Experience Requirements: In addition to the above stated education requirements or the following experience is required: 1 year experience in ESM receiver technology development. Demonstrated knowledge of the requirements, alternatives, workings, interrelationships, and tradeoffs of EW systems and leading-edge technologies relevant to these systems. Demonstrated ability to work with emerging EW technologies, including high temperature superconductors (HTS), fiber optics, monolithic microwave integrated circuits (MMIC), magnetostatic wave circuits (MSW) and optical processing. Demonstrated ability to communicate (i.e., liaison) with leading scientists in the areas of EW technology interest in an effort to develop modules and system level demonstrations. This also includes a demonstrated capability in system and module definition and documentation and fluency in computer aided design (CAD) modeling of systems, microwave, optical and digital circuitry.

Labor Category: ASSOCIATE ENGINEER (MECHANICAL)

Education Requirements: BS in Mechanical Engineering, or technical education and/or technical experience at the Associate Engineer (Mechanical) level. Education and experience is substituted on a one year to one year ratio. (Ex: one year of education and three years of experience would equal a BS degree; two years of education and two years of experience would equal a BS degree, etc.).

Experience Requirements: In addition to the above stated education requirements or the following experience is required: 3 year experience in performing thermal, structural and reliability analysis on ESM modules, systems and processing assemblies. Demonstrated knowledge of physical workings, interrelationships, and tradeoffs and mechanical characteristics of ESM microwave electronic components, assemblies and fabrication processes. Demonstrated ability to derive the environmental impact of shock, vibration, thermal cycling and weathering elements on electronic assemblies. Demonstrated fluency in computer aided modeling procedures associated with finite element analysis. Demonstrated familiarity with fabrication, plating and finishing processes associated with the exotic materials utilized in optical, MIC and MSW assemblies and packaging. Demonstrated familiarity with assembly operations and procedures such as bonding, welding, soldering and epoxy attachment of GaAs dies and electronic chip components to substrates and carriers.

Labor Category: ENGINEERING ANALYST

Education Requirements: BS in Electrical Engineering, or Physics, or technical education and/or technical experience at the Engineer Analyst level. Education and experience is substituted on a one year to one year ratio. (Ex: one year of education and three years of experience would equal a BS degree; two years of education and two years of experience would equal a BS degree, etc.).

Experience Requirements: In addition to the above stated education requirements or the following experience is required: 1 year experience in ESM system integration. Demonstrated knowledge of ESM functional elements using state-of-the-art MSW, fiber optic, MMIC, optical processing and VLSI, including their tradeoff characteristics. Demonstrated ability to work cooperatively with subcontractors, mechanical designers, system designers and technicians in integrating system functional elements and establishing the required performance level in a sequential building block fashion that includes integration, troubleshooting and performance verification to specifications. Demonstrated ability to develop and write test plans and procedures. Demonstrate working knowledge of computer aided design (CAD) modeling of RF/microwave/millimeter wave circuitry using HP/EE's of Touchstone and/or Compac Harmonica. Demonstrated working knowledge of advanced RF/microwave/millimeter wave test equipment.

Labor Category: SENIOR TECHNICIAN

Education Requirements: High School Diploma and 1 year of vocational training in electronics.

Experience Requirements: In addition to the above stated education requirements, the following experience is required: 10 years experience in ESM system and microwave technology. 10 years experience in fiber optics, MSW, MMIC and optical processing assembly, design and testing. Demonstrated extensive experience in assembly, testing and tuning of ESM modules and equipment, MIC-hybrid RF, microwave, millimeter wave circuitry, over dc to 40 GHz. 10 years experience in fiber optics, MSW, MMIC and optical processing assembly, design and testing. Demonstrated knowledge of and capability in the alignment and testing of ESM functional modules to verify performance. Demonstrated fluency in the operation of vector and scalar network analyzers, spectrum analyzers, time domain reflectometers (TDR), noise figure and power meters.

Demonstrated ability to work from MIL-T-31000, Level 2 mechanical drawings and schematics. Demonstrated experience in generating ESM module test procedures.

Labor Category: TECHNICIAN

Education Requirements: High School Diploma and 1 year of vocational training in electronics.

Experience Requirements: In addition to the above stated education requirements, the following experience is required: 5 years experience in ESM system and microwave technology assembly, design and testing. Demonstrated experience in assembly, testing and tuning of ESM modules and equipment, MIC-hybrid RF, microwave, millimeter wave circuitry, over dc to 40 GHz. Demonstrated knowledge of and capability in the alignment and testing of ESM functional modules to verify performance. Demonstrated capability in the operation of vector and scalar network analyzers, spectrum analyzers, noise figure and power meters. Demonstrated ability to work from MIL-T-31000, Level 2 mechanical drawings and schematics. Demonstrated experience in generating ESM module test procedures.

Labor Category: PLANNER/PROGRAM ANALYST

Education Requirements: High School Diploma and 1 year of vocational training in program planning/program analysis.

Experience Requirements: In addition to the above stated education requirements, the following experience is required: 5 years experience in the tracking, procurement and in-house flow of electronic/mechanical components. 5 years experience in the scheduling of work activities and tracking financial and technical status. Demonstrated hands-on experience in using a personal computer with software, including financial and technical spreadsheets, project management and word-processing.

Labor Category: DRAFTER/MECHANICAL DESIGNER

Education Requirements: High School Diploma and 1 year of vocational training in drafting/designing.

Experience Requirements: In addition to the above stated education requirements, the following experience is required: 5 years experience in electromechanical packaging design. 2 years experience in rack enclosure packaging design. Demonstrated extensive understanding of the parameters of mechanical design for military systems hardware. Demonstrated knowledge of high-tolerance, precision-machining techniques. Demonstrated working knowledge of interconnect electronics, RF components and microwave packaging constraints. Demonstrated ability to arrange various components of the package for optimum signal flow with minimum I/O crossover. Demonstrated knowledge of the design, fabrication, assembly and wiring of multi-rack systems. Demonstrated understanding of ANSI Y 14.5 geometric dimensioning and tolerancing. Demonstrated mechanical engineering skills in producing both mechanical and electrical drawings, and experience with MS Office products and the current version of AutoCAD software are required.

Labor Category: SENIOR ASSEMBLER

Education Requirements: High School Diploma and 1 year of vocational training in electronics assembly.

Experience Requirements: In addition to the above stated education requirements, the following experience is required: 3 years experience in the assembly of electronics modules and subsystems. Demonstrated hands-on experience in the use of sheet metal brake, rack installations, wire harnessing, welding, riveting and PC board assembly and flow soldering. Demonstrated experience in reading and interpreting drawings, parts handling and the picking and placing of small components with the use of a vision enhancement instruments. A demonstrated thorough knowledge of solder/braze/weld/epoxy attachment of components from chip to the module components. Demonstrated experience in the operations of an electronic assembly clean room used for Hybrid assembly. Demonstrated ability to interpret assembly drawings, work instructions, assembly procedures and schematics.