

<b>AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT</b>				1. CONTRACT ID CODE	PAGE 1 OF 8 PAGES
2. AMENDMENT/MODIFICATION NO. 0001		3. EFFECTIVE DATE 06/07/06	4. REQUISITION/PURCHASE REQ. NO. 53-4029-06	5. PROJECT NO. (If applicable)	
6. ISSUED BY CODE		N00173	7. ADMINISTERED BY (If other than Item 6) CODE		
CONTRACTING OFFICER NAVAL RESEARCH LABORATORY 4555 OVERLOOK AVENUE, SW WASHINGTON, DC 20375-5326 ATTN: CODE 3220					
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				(X)	9A. AMENDMENT OF SOLICITATION NO.
TO ALL OFFERORS				X	N00173-06-R-JS04
					9B. DATED (SEE ITEM 11) 05/24/06
					10A. MODIFICATION OF CONTRACT/ORDER NO.
					10B. DATED (SEE ITEM 11)
CODE		FACILITY CODE			

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers  is extended,  is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

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

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

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

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

SEE PAGE 2

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

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR		16B. UNITED STATES OF AMERICA	
15C. DATE SIGNED		16C. DATE SIGNED	
(Signature of person authorized to sign)		(Signature of Contracting Officer)	

The purpose of this amendment is to answer questions from potential offerors, revise Section H-2 Level of Effort, and to revise the Personnel Qualifications.

1. Q: Are past performance information and past performance reports required to be submitted for this solicitation? If so, how many contracts/subcontracts will be required to show past performance?

A: This solicitation requires no past performance reports. Evaluation will take into account the relevant experience and qualification of the proposed personnel and the quantity and quality of the corporate experience.

2. Q: Section H-2 of the RFP provides the level of effort required for this effort by labor category. Attachment (3) provides the personnel qualifications for the labor categories listed in H-2; however, personnel qualifications for the Senior Researcher (Radar Systems), Technician, Administrator, and Analyst are missing. Will the Government provide the personnel qualifications for these categories?

A: See revised Section H-2 below.

3. Q: Section H-2 lists the requirement for an Antenna Consultant. Attachment (3) provides the personnel qualifications for an Antenna Specialist. Are these two separate labor categories? If not, is the title Antenna Consultant or Antenna Specialist? If so, please provide the personnel qualifications for the Antenna Consultant and revise H-2 to include the hours for the Antenna Specialist.

A: See revised Section H-2 below.

4. **SECTION H-2 ONR 5252.216-9706 - LEVEL OF EFFORT (DEC 88)** is deleted in its entirety and replaced with the following:

(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 17,400 total hours of direct labor for the Basic award, 17,400 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

1,450 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>	<b>Labor Hours Basic Award and each Option, if exercised</b>
Senior Researcher (Radar Systems)	200
Senior Radar Engineer	200
Senior Radar Engineer (Radar Systems)	2000
Senior Radar Engineer (Airborne Radar)	200
Senior Radar Engineer (Mechanical)	200
Senior Radar Engineer (Antennas)	3000
Senior Radar Engineer (Signal Processing)	2000
Senior Electro-Magnetic Theoretician	2000
Radar Engineer(Signal Processing)	2000
Antenna Specialist	200
Junior Electronics Engineer/Physicists	2000
Senior Electronics Technician	200
Electronics Technician	2000
Entry Technician	200
Machinist	400
Computer Systems Analyst	200
Software Engineer	200
Administrator	200
<b>TOTAL</b>	<b>17,400</b>

5. Attachment (3) Personnel Qualifications is also deleted in its entirety and replaced with the following:

### **PERSONNEL QUALIFICATIONS (Revised 6/7/06)**

#### **SENIOR RESEARCHER (RADAR SYSTEMS):**

**Minimum Education:** Ph.D., with primary emphasis in Mathematics and Physics.

**Required Experience:** 10 years experience in Navy and Marine Corps radar systems. Demonstrated theoretical background and experimental appreciation for physics of sea surface and atmosphere and radar remote sensing.

#### **SENIOR RADAR ENGINEER:**

**Minimum Education:** Bachelors and Masters Degree in Electrical Engineering (EE), Doctoral-level graduate EE course work with emphasis on Communications Theory, Systems Theory, Computer Science.

**Required Experience:** A minimum of 20 years of experience in the development and design of radar systems; scientific and technical analysis experience for problem solving in radar technology and systems, including digital signal processing. Ability to conduct in-depth investigations of new component technology and develop specifications for improved radar performance. Ability to communicate scientific and technical material including briefs, conference papers, memorandum and formal reports, and proposals. Provide technical direction and consultation of BAA SBIR, and other R&D contracts. Provide a minimum of 20 years of experience in the development and design of radar systems; R&D management and project organization, technical planning, coordination, and budgeting. Have technical knowledge of naval ship radar systems particularly the AN/SPQ-9B anti-ship missile defense radar Signal processing concepts and technology including programmable array processors.

#### **SENIOR RADAR ENGINEER (RADAR SYSTEMS):**

**Minimum Education:** BSEE (MS desirable)

**Required Experience:** 10 years experience in Radar Systems in the fields of ISAR (Inverse Synthetic Aperture Radar) for fleet operations and/or new radar concepts for improved Navy Radar performance, including side lobe cancellations technique.

#### **SENIOR RADAR ENGINEER (AIRBORNE RADAR):**

**Minimum Education:** BSEE (MS desirable)

**Required Experience:** 10 years experience in adaptive antenna techniques and super-resolution for improved Airborne Early Warning Radars.

**SENIOR RADAR ENGINEER (MECHANICAL):**

**Minimum Education:** BSEE (MS desirable)

**Required Experience:** 5 years experience in mechanical aspects of shipboard radar antennas.

**SENIOR RADAR ENGINEER (ANTENNAS):**

**Minimum Education:** BSEE (MS desirable)

**Required Experience:** 5 years experience in Phased Array Radar Systems and Target Characterization. Experience in antenna design, microwave components, material properties and radar system design, analysis and measurements. Capable of performing and analyzing radar experimental data. Working knowledge of state-of-the-art antenna measurement equipment and analysis tools.

**SENIOR RADAR ENGINEER (SIGNAL PROCESSING):**

**Minimum Education:** Ph.D. in mathematical statistics, an M.S. in electrical engineering, and undergraduate training in mathematics/engineering.

**Required Experience:** 10 years conducting high-level research in statistics, signal processing, and related areas and a good publication record.

**Skills:** This individual must be able to conduct original, high-level research in signal processing and related areas and to apply advanced mathematics and electrical engineering to carry out the complex analyses associated with such investigations. The position requires that the employee have demonstrated skills in analysis, computation, experimentation, speaking, and writing. The employee must also be able to possess a Secret clearance.

**Knowledge:** This position requires that the employee possess an extensive knowledge of electrical engineering, advanced mathematics, and physics, be competent in statistical theory and signal processing as they pertain to propagation, radiation, and scattering, especially as these areas relate to radar.

**SENIOR ELECTROMAGNETIC THEORETICIAN:**

**Minimum Education:** Ph.D. in electrical engineering, an M.S. in physics, and undergraduate training in mathematics.

**Required Experience:** 25 years of experience in conducting high-level research in Electro-magnetics and related areas, 10 years of which should be related to radar problems, and an outstanding publication record in journals.

**Skills:** This individual must be able to conduct original, high-level research in electro-magnetics and related areas and to apply advanced physics and mathematics to carry out the complex analyses associated with such investigations. This person must be able to write journal-quality papers and to present their results orally at reviews and conferences.

**Knowledge:** This position requires that the employee is a recognized expert in electro-magnetic theory as it pertains to propagation, radiation, and scattering, especially as these areas relate to radar. Special knowledge of pulsed radiation and scattering and of ultra-wideband (UWB) electro-magnetics is required.

**RADAR ENGINEER (SIGNAL PROCESSING):**

**Minimum Education:** BSEE (MS desirable)

**Required Experience:** 5 years experience in Radar Signal detection, estimation and processing.

**ANTENNA SPECIALIST:**

**Minimum Education:** BSEE/Physics

**Required Experience:** Specialized experience in antenna technology.

**JUNIOR ELECTRONICS ENGINEER/PHYSICIST:**

**Minimum Education:** BSEE or BS Physics, Communications Theory, RF and Microwave Systems, Computer Engineering, Electro-magnetics and Propagation Theory.

**Required Experience:** Scientific and technical analysis and computer simulation. Investigation and laboratory evaluation of new components for application to radar. Implementation and testing of radar subsystems.

**SENIOR ELECTRONICS TECHNICIAN:**

**Minimum Education:** High School Diploma, plus formal electronics certification, e.g. Navy A and B Schools.

**Required Experience:** 5 years experience in the operation, maintenance, and repair of electronic equipment, with emphasis on the assembly and testing of microwave devices for Navy radar systems.

**ELECTRONICS TECHNICIAN:**

**Minimum Education:** High School Diploma

**Required Experience:** Experience in the fields of electronics and mechanics to reflect the following: Experience in antenna building and measurements. Ability to repair and operate a variety of systems to include microwave systems, radar systems, electromechanical devices, vacuum hydraulics, pneumatics, electronics, instrumentation, and some shop equipment (mills, lathes, etc...). Capability of independent project work and interfacing with research staff.

**ENTRY TECHNICIAN:**

**Minimum Education:** none

**Required Experience:** Ability to follow directions and work without constant supervision.

**MACHINIST:**

**Minimum Education:** High School Diploma

**Required Experience:** Experience in the fields of mechanics to reflect the ability to operate a variety of systems including mills, lathes, drill presses, sanders, and grinders. Capability of independent project work and interfacing with a research staff.

**COMPUTER SYSTEMS ANALYST:**

**Minimum Education:** BS in Computer Science or 10 years experience in managing and programming multiple computers and workstations.

**Required Experience:** Demonstrated familiarity with structured system development methodologies and source code control techniques.

Demonstrated ability to design and implement real-time software systems for Navy and Coast Guard Combat Engagement Centers. Demonstrated experience with software development designed to operate radar display and distribution systems. Experience with JMCIS software development environment of UNIX based workstations.

**SOFTWARE ENGINEER:**

**Minimum Education:** BS in Computer Science

**Required Experience:** Demonstrated ability to design and develop programs with the following languages: C+ +, Pascal, Basic, Fortran, and ADA.

Demonstrated knowledge of onboard radar, EW, Link and Navigation systems are desirable.

**ADMINISTRATOR:**

**Minimum Education:** BSCS

**Required Experience:** Manage computer software projects involving multiple people that took a project through the software design, coding, and testing phases. This would include understanding the overall objective and assigning money, personnel, and other resources needed to accomplish project. During the coding and testing phases, continually monitor progress and resources spent so that the project will be completed on time and within budget.