

**Space and Naval Warfare Systems Center, Pacific  
53560 Hull Street  
San Diego, CA 92152-5001**



**C4ISR & Information Dominance Research**

**N66001-11-X-0042**

**INTRODUCTION:**

This publication constitutes a Research Announcement (RA) as contemplated in the Department of Defense Grants and Agreements Regulations (DoDGARS) 22.315. A formal Request for Proposals (RFP), solicitation, and/or additional information regarding this announcement will not be issued.

Space and Naval Warfare Systems Center, Pacific (SSC Pacific) reserves the right to fund all, some or none of the proposals received under this RA. SSC Pacific provides no funding for direct reimbursement of proposal development costs. Technical proposals (or any other material) submitted in response to this RA will not be returned. It is the policy of SSC Pacific to treat all submissions as sensitive competitive information and to disclose their contents only for the purposes of evaluation.

## PART I – EXECUTIVE OVERVIEW

- **Federal Agency Name:** Space and Naval Warfare Systems Center, Pacific (SSC Pacific)
- **Research Announcement Title:** Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and Information Dominance Research
- **Announcement Type:** Initial Announcement
- **Research Announcement Number:** N66001-11-X-0042
- **Catalog of Federal Domestic Assistance Number (CFDA) :** 12.335 Research and Development
- **Dates:**
  - Posting Date - 09 May 2011
  - Closing Date – 09 June 2011

This announcement will remain open until 09 June 2011. Proposals are due by 4:00 p.m. Pacific time on the closing date. Proposals received after the closing date may not be evaluated.
- **Concise description of funding opportunity:** The Space and Naval Warfare Systems Center, Pacific (SSC Pacific) is soliciting proposals in accordance with Department of Defense Grant and Agreement Regulations (DoDGARS) 22.315(a), for basic research, applied research and advanced research (hereinafter referred to as research) from all responsible sources from academia (colleges and universities). Research shall be in areas relating to the advancement of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities; enabling technologies for Information Operations and Cyber Operations; and Information Technology systems. This RA is intended to establish cooperative agreements. Procurement contracts will not be issued under this announcement. Research should investigate unique and innovative approaches for defining and developing next generation integratable C4ISR capabilities and command suites.
- **Anticipated individual awards:** Multiple awards may be made against this RA. It is anticipated that approximately five (5) awards may be made. However, SSC Pacific is not obligated to make any awards if it is deemed no acceptable proposals were received.
- **Types of instruments that may be awarded:** Cooperative Agreements – Each Cooperative Agreement will be funded by individual Technical Direction Letters (TDLs), as funds become available for a research topic. Please note that any TDLs that involve a research topic that is common to two or more cooperative agreements will be competed; the evaluation criteria for a competed TDL will vary based on the research project and will be stated in the TDL. It is expected that any competed TDLs will be open for competition for up to two weeks. Also, there may be some instances where the Government may determine that a TDL should not be competed due to specific expertise/ Intellectual Property (IP) that may be applicable to only one awardee.
- **Period of Performance:** It is anticipated that performance of any award will begin in September 2011. The total duration of an Agreement, with modifications, is five years. The period of performance of TDLs will vary depending on the research project.

- **Place of Performance:** It is anticipated that the Research will be performed principally at the awardee's primary location. It is anticipated that status meetings and deliverables, as specified on a per project basis, may be required at Government facilities.
- **Program Funding:** The amount of resources made available under this RA will depend on the quality of the proposals received and the availability of funds. The cumulative value of all Cooperative Agreements awarded under this RA will not exceed \$10,000,000. However, individual Cooperative Agreements may range in value from \$1,000,000 - \$5,000,000.
- **Evaluation, Negotiation, and Award:** Evaluation, negotiation and award in connection with this RA will be performed in accordance with PART V by government personnel.
- **Proposal Preparation:** PART IV of the RA provides information on proposal preparation and submission. Offerors should note that there are page limitations and other requirements associated with the submission process.
- **Eligible Offerors:**
  - All responsible sources from academia (colleges and universities) may submit proposals under this RA. Historically Black Colleges and Universities (HBCUs) and Minority Institutions (MIs) are encouraged to submit proposals and join others in submitting proposals. However, no portion of this RA will be set aside for HBCU and MI participation. Federally Funded Research and Development Centers (FFRDCs) are not eligible to receive awards under this RA. However, teaming arrangements between FFRDCs and eligible principal offerors are allowed so long as they are permitted under the sponsoring agreement between the Government and the specific FFRDC. Navy laboratories and warfare centers as well as other Department of Defense and civilian agency laboratories are also not eligible to receive awards under this RA and should not directly submit proposals in response to this RA.
  - **Foreign Concerns** – Participation by foreign persons are advised that their participation may be subject to Export Control restrictions. Any such restrictions shall be on a TDL basis.
  - **All offerors** - If a prospective offeror believes that any conflict of interest exists or may exist (whether organizational or otherwise), the offeror should promptly notify SSC Pacific by sending his/her contact information and a summary of the potential conflict by e-mail to the Point of Contact identified herein. If, in the sole opinion of the Government, after full consideration of the circumstances, any conflict situation cannot be effectively avoided or mitigated, the proposal may be rejected without technical evaluation and withdrawn from further consideration for award under this RA.
- **Agency Contact:** Questions pertaining to this RA shall be submitted to Tuan Doan, Grants Specialist at SSC Pacific at the following e-mail address: tuan.doan@navy.mil. Please include "RA N66001-11-X-0042" in the subject line for any email submitted in response to this RA. All questions MUST be submitted via email to Tuan Doan to receive an answer. No questions will be accepted or answers provided telephonically.

## **PART II - OBJECTIVE & BACKGROUND**

### Objective

The primary objective of the Cooperative Agreements is the development of collaborative Science and Technology efforts between SSC Pacific and academic institutions to stimulate research, in areas of interest to SSC Pacific.

### Background

SSC Pacific is the U.S. Navy's research, development, test and evaluation center across the full spectrum of C4ISR. It is a Department of Defense (DoD) Center of Excellence for integrated C4ISR and Information Dominance.

SSC Pacific was established June 1, 1940 as the Navy's first West Coast laboratory. The majority of the Center's employees are engineers, scientists and technicians developing technology to meet the Navy's information requirements of the future.

SSC Pacific's strategy is to continue to develop innovative Science and Technology through key partnerships with Academic institutions. Some of the auxiliary benefits would be to develop the existing SSC Pacific workforce into a highly credentialed workforce, while also expanding competencies at SSC Pacific.

## **PART III – COOPERATIVE AGREEMENT SCOPE**

Scope: SSC Pacific is soliciting proposals in accordance with DoDGARS 22.315(a) for research in areas relating to the advancement of C4ISR capabilities, enabling technologies for Information Operations and Cyber Operations, and Information Technology systems. Technical topics of interest include, but are not limited to:

### **1. General C4ISR**

- Command, Control and Communication Systems
- Command, Control and Communication Systems Countermeasures
- Command, Control and Communication Modeling and Analysis
- Autonomous Sensors, Systems, and Vehicles
- Cyberspace and Cyber Operations
- Power and Energy
- Ocean Surveillance Systems
- Ocean Engineering
- Navigation Systems and Techniques
- Marine Mammals
- Integration of Space Communication and Surveillance Systems

### **2. Command and Control**

- Decision Superiority
- Knowledge Management
- Cognitive Systems, Artificial Intelligence, Machine Learning
- Machine Learning
- Data Fusion, Correlation and Visualization
- Command and Control of the future

### **3. Communications**

- Microelectronics
- Electro-Optics and Photonics
- Sensors
- Nanotechnology
- Non-linear Dynamics
- Signal Processing
- Antennas and Propagation
- Wireless Networking
- Network Security and Information Assurance
- Networking and Computing
- Social Networks

**4. Intelligence, Surveillance and Reconnaissance**

- Sensor Systems
- Data Fusion and Analysis for Heterogeneous Sources
- Information Operations and Computer Network Exploitation
- New and Improved Collection Systems, including Chemical and Biological Systems
- Visualization, Immersive Technology and Human Machine Interface
- Navigation
- Maritime Domain Awareness

**5. Other**

- Cyber Space and Cyber Operations
- Advanced Power Generation
- Robotics and Unmanned Systems
- Marine Mammals (Other than C4ISR)
- Ocean Environment and Ocean Environment Systems
- Counter Improvised Explosive Device (IED) Technologies

## **PART IV –PROPOSAL PREPARATION**

This RA contains all information necessary to submit a proposal; no additional information is available nor will a formal Request For Proposals (RFP) be issued.

All proposals will be evaluated in accordance with the evaluation criteria identified in Part V. The Government's responses to proposal submissions will contain the Government's intent to either pursue or not pursue an award based on the proposal.

Multiple awards are anticipated to result from this RA. The amount of resources made available under this RA will depend on the quality of the proposals received and the availability of funds. The Government reserves the right to:

- Select for negotiation all, some, one, or none of the proposals received in response to this RA, and to make awards.
- Request any additional, necessary documentation once a proposal is selected for award. Such additional information may include but is not limited to Representations and Certifications.
- Remove proposers from award consideration should the parties fail to reach agreement on award terms, conditions and cost/price within a reasonable time, or the proposer fails to timely provide requested additional information.
- Have sole discretion to negotiate all instrument provisions with selectees.
- Accept proposals in their entirety or to select only portions of proposals for award. In the event the Government desires to award only portions of a proposal, negotiations may be opened with that proposer.
- Cost Sharing or Matching: Cost sharing is not a requirement.

1. Proposal Submission: Proposals shall be submitted in the form and format and at the time and location as specified below.

2. Proposal Submission Instructions:

- a. Proposal submission will only be accepted through Grants.gov.

Proposers must complete the following, one time steps, before submitting proposals on Grants.gov (these steps are also detailed at [www.grants.gov/applicants/get\\_registered.jsp](http://www.grants.gov/applicants/get_registered.jsp)):

- Proposers must obtain a DUNS number
- Proposers must register their organization in the Central Contractor Registration (CCR) (<https://www.bpn.gov/CCRSearch/Search.aspx>)
- Proposers must obtain a user name and password with an E-Authentication provider
- Proposers must register the Authorized Organization Representative (AOR) in Grants.gov
- Proposers must have the organization's E-BIZ point of contact authorize the AOR to submit applications.

Use the Grants.gov Organization Registration Checklist at [http://www.grants.gov/assets/Organization\\_Steps\\_Complete\\_Registration.pdf](http://www.grants.gov/assets/Organization_Steps_Complete_Registration.pdf) which will provide guidance through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called ‘MPIN’ are important steps in the CCR registration process. Applicants who are not registered with CCR and Grants.gov should allow at least 21 days to complete these requirements. The process should be started as soon as possible. Any questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov.

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select "Apply for Grants", and then select "Download Application Package". Enter the CFDA (for SSC Pacific, the CFDA is 12.335) for the respective agency to which you are directing the application and the Research Announcement number (RA N66001-11-X-0042). Application packages should be directed to the administrative point of contact identified herein.

Proposals shall be submitted through Grants.gov using the mandatory Grants.gov form(s) from the application package template associated with the RA on the Grants.gov website. Offerors are to complete the SF 424 Research and Related Form (R&R). Complete all the required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the “Help Mode” (icon with the pointer and question mark at the top of the form). Offerors are to complete the mandatory forms in accordance with the instructions on the forms, additional information can be found through the application user guide found at Grants.gov. The use of the optional forms from the application package template associated with the RA is highly encouraged. Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.

Please note that Volume I, Technical Proposal should be submitted as an attachment to the SF 424 rather than being inserted into Block 7, Project Narrative. Block 7 should be completed with a statement that Volume I is attached. To attach the Technical Proposal, open the Attachment Form in the Optional Documents box of the application package, scroll down to the Attachment page, and follow the instructions. The file should be titled “Volume I – Technical Proposal.”

By completing Block 17 of the Grant Applicant, the offeror is providing the certification on lobbying required by 32 CFR Part 28.

- b. Proposals are due no later than 4:00p.m. Pacific time on 09 June 2011.
- c. Proposals shall not contain classified data; do not provide submissions marked classified, confidential, secret, etc. However, offerors shall mark each page of their submission that contains proprietary information.

d. Content and Form of Proposal Submissions:

The requirements for the offeror's proposal are: Adobe PDF format compatible with Adobe Acrobat 4.1 or greater, with 12-pitch Times New Roman font (smaller font may be used for figures, tables, and fonts), on 8-1/2 by 11 inch paper, with 1 inch margins. Technical proposals shall contain the information below in the prescribed order. Proposals that do not clearly identify the information below will be considered to have not conformed to the parameters herein and thus unresponsive. Proposals shall contain the following information:

- Cover Letter:
  - RA title and number;
  - Proposal title and date;
  - Organization name and address and technical and administrative point of contact information (address, phone, fax and e-mail);
  - Clearly state how long the proposal will be valid; Government requires a minimum of 90 days;
  - Clearly list the technical topics of interest (based on the list in Section III of this RA) for the Offeror;
  - Provide a brief background of the Academic Institution, along with the Mission and Vision
- Technical Proposal - For each topic of interest identified in the Cover Letter, provide a 1 ½ page maximum summary of the research/experience the Academic Institution has in that topic area, including the following (where applicable, topic areas may be grouped; topics that are grouped will be granted a 2 page maximum summary per group of topics):
  - 1) Capabilities/Competencies:
    - Accomplishments – List and summarize efforts relevant to the topic of interest that have resulted in awards, acknowledgement by industry, or have been transitioned to industry;
    - Research (Past/Present) – List and summarize similar research that relates to the technical topic of interest. Include descriptions, progress/results, and sponsors for such efforts;
    - Publications – List and summarize any publications, related to the technical topic of interest, that have been published by the academic institution;
    - Awards and Grants – List and summarize any awards, grants, or cooperative agreements with other Federal Agencies in the last 5 years related to the technical topic of interest identified;

- 2) Resources – Please list and describe the following that relate to the technical topic of interest:
  - Research Laboratories/Facilities
  - Research Centers/Institutes
  - Research Foundations/Associations
  - Specialized Equipment
- 3) Qualifications of proposed key personnel:
  - Please identify a minimum of two full-time or part-time personnel that have relevant experience, within the past ten years, on similar research projects per topic of interest. Include a concise summary of the qualifications of key personnel,
- Cost Proposal: Provide a detailed description of a sample type of research that the institution can offer with a cost proposal towards that sample research topic, which the Government can then evaluate for cost reasonableness/realism. Utilize a 6-month period of performance for the sample research topic. There is no page limitation for the cost proposal.

The cost proposal for the sample research topic shall be prepared in accordance with the directions provided below and the sample spreadsheet provided in Appendix A of this document. Breakout and identify separately the following cost elements for the sample 6-month research task:

1. Direct Labor. Identify all of the various labor categories (providing individual names for key personnel) intended for use in the sample task including the number of labor hours, hourly labor rates, and total cost for each labor category. The labor specified under this category shall only be for the prime's direct labor and shall not include any subcontracted labor. (See subcontracted labor below.) The straight time hourly rates shall use a forty-hour week for the conversion of salaried employees to the hourly basis and shall be exclusive of loading factors; i.e., vacation, sick leave, holidays, overhead, G&A, fee, etc. *Explain the basis for the proposed hourly labor rates.*
2. Fringe Benefits. If applicable and in accordance with your normal accounting procedures, identify the fringe benefit rate(s) and total fringe benefit cost being proposed and identify the cost elements for which the fringe benefit rate is being applied. *Explain the basis for the proposed rate and application base.* Include a copy of your Federal Government negotiated indirect bidding/billing agreement, if applicable.
3. Overhead. Identify the current and/or projected overhead rate(s) and total overhead cost proposed for the sample task and identify the various cost elements for which overhead is being applied. *Explain the basis for the proposed rate and application base.* Include a copy of your Federal Government negotiated indirect bidding/billing agreement, if applicable.

4. Travel. Identify the following information for each trip: location of origin and destination; number of travelers; duration; airfare cost; rental car cost; per diem (meals and lodging) cost; any other costs.
5. Direct Materials. Identify proposed consumable material items and purchased parts by item name, quantity, and unit price. *Explain the basis for the proposed cost, e.g., engineering estimate, vendor quote, catalog item, etc.* Depending upon the dollar value, the Government may later request that you substantiate the proposed costs with commercial vendor quotes or catalog price listings.
6. Equipment. Identify incidental equipment by item name, quantity, and unit price. *Explain the basis for the proposed cost, e.g., engineering estimate, vendor quote, catalog item, etc.* Depending upon the dollar value, the Government may later request that you substantiate the proposed costs with commercial vendor quotes or catalog price listings.
7. Subcontracts. If subcontractors are proposed, submit the same detailed level of cost information as for the prime.
8. Other.
  - (i) **Direct Cost**. Identify any other direct cost elements being proposed which are not included above but are applicable to your cost proposal, e.g., royalties, Facilities Capital Cost of Money, special tooling, computer usage, etc. *Explain the basis for the proposed amount.*
  - (ii) **Indirect Cost**. Identify any other indirect cost element being proposed which has not been included above and identify the various cost elements for which the rate is applied.
9. General and Administrative Expense. Identify the G&A rate(s) and the total G&A cost proposed and identify the various cost elements for which the G&A is being applied. *Explain the basis for the proposed rate and application base.* Include a copy of your Federal Government negotiated indirect bidding/billing agreement, if applicable.
  - If known, identify your cognizant Defense Contract Audit Agency or other Federal Government audit agency and provide a point of contact name, address, e-mail, and telephone number.
  - If known, identify your cognizant Federal Government contract/grant administration office and provide a point of contact name, address, e-mail, and telephone number.
  - Include a standard rate schedule or published price list to include faculty and staff pay. This schedule or price list should include all labor categories that the offeror intends to use over the life of the Cooperative Agreements (e.g., Professors, graduate students, and undergraduate students).

## **PART V – EVALUATION, NEGOTIATION AND AWARD**

Once submissions are evaluated, responses to offerors will be provided via email notification.

### **1. Proposal Evaluation:**

All information necessary for the review and evaluation of a proposal must be contained in the proposal. No other material will be provided to the evaluators.

An initial review of the proposals will be conducted to ensure compliance with the requirements of this RA. Failure to comply with the requirements of the RA may result in a proposal receiving no further consideration for award.

Proposals submitted in response to this RA will be evaluated against evaluation factors set forth below. For evaluation purposes, all non-cost factors are of equal importance (i.e., Factor 1 is equally important to Factor 2 which is equally important to Factor 3), and all non-cost factors, when combined, are more important than the cost factor (i.e., Factor 4):

#### **Factor 1 - Capabilities/Competencies:**

Degree to which the offeror's capabilities/competencies including Accomplishments, Research, Publications, and Awards and Grants demonstrates relevance to the technical topic(s) of interest.

#### **Factor 2 - Resources**

Degree to which the offeror's assets including Research Laboratories / Facilities, Research Centers / Institutes, Research Foundations / Associations, and/or Specialized Equipment fully supports the relevant technical topic of interest and adequately facilitates working relationships with SSC Pacific personnel.

#### **Factor 3 - Personnel**

Degree to which the proposed key personnel have relevant expertise in the research areas offered.

#### **Factor 4 - Cost:**

Cost proposals will be evaluated for reasonableness and realism of the sample task costs.

The Government reserves the right to fund all, any, none or part of the proposals received under this RA. Prospective offerors are advised that only Grants Officers are legally authorized to commit the Government. Awards made under this RA may range from \$1,000,000 - \$5,000,000 per Cooperative Agreement.

No further evaluation criteria will be used in selecting proposals. Individual proposals will be evaluated against the evaluation criteria without regard to other proposals submitted under this RA.

**PART VI – AGENCY CONTACTS:**

Questions of a technical and/or business nature shall be submitted to:

Grants Specialist  
Tuan Doan  
Email: [tuan.doan@navy.mil](mailto:tuan.doan@navy.mil)

Questions must reference the title and number of the RA.

This notice constitutes an RA as contemplated in DoDGARS 22.315(a). No additional written information is available, nor will a formal request for proposal (RFP) or other solicitation regarding this announcement be issued. Interested parties are invited to respond to this announcement.

APPENDIX A – Cost Proposal Sample Spreadsheet

	<b>Sample Task</b>		
	<b>POP 6 Months</b>		
	<b>01/01/11 - 06/01/11</b>		
<b>Direct Labor Category</b>	<b>Hours</b>	<b>Rate</b>	<b>Total Cost</b>
Scientist	960	\$50.00	\$48,000.00
Professor	960	\$50.00	\$48,000.00
Grad Student	450	\$20.00	<u>\$9,000.00</u>
<b>Total Direct Labor</b>			\$105,000.00
Fringe Benefits, Overhead, Benefits - 70%			\$73,500.00
Total Labor & Fringe, Overhead, Benefits			\$178,500.00
<b>Other Direct Costs</b>			
Travel			\$5,000
Material & Supplies			\$1,000
Equipment			\$5,000
Subcontracts		-	<u>\$20,000</u>
<b>Total Other Direct Costs</b>			\$31,000
M & S, Overhead, G&A - 15%			\$31,425.00
<b>TOTAL COST</b>			\$240,925.00