

**NATIONAL IMAGERY AND MAPPING AGENCY  
SUBMISSION OF PROPOSALS**

**GENERAL INFORMATION**

The mission of the National Imagery and Mapping Agency (NIMA) is to provide timely, relevant, and accurate imagery, imagery intelligence, and geospatial information in support of national security objectives. Therefore, NIMA pursues research that will help guarantee the information edge over potential adversaries. Potential participants unfamiliar with NIMA and its SBIR program can find more information about it on NIMA's SBIR home page at <http://www.nima.mil/poc/contracts/sbir/sbir.html>.

**PHASE I PROPOSAL INFORMATION**

NIMA has developed topics to which small businesses may respond in the fiscal year 2002 SBIR Phase I iteration. These topics are described on the following pages. NIMA will accept only unclassified proposals on its topics.

The price of each proposal shall not exceed a total of \$100,000, with not more than \$70,000 allotted to the base proposal and not more than \$30,000 to the option. The option proposal shall be included with the base proposal at the time of submission. NIMA does not participate in the Fast Track program.

All DoD SBIR proposal submission requirements are required of proposals to NIMA. In the proposals, Phase I base and Phase I option costs shall be shown separately. A work breakdown structure (WBS) that shows the number of hours, labor category and name of each person that will work on the SBIR to be assigned to each task and subtask, as well as the start and end dates for each task and subtask, shall be included. WBS is defined as an organized method to break down a project into logical subdivisions or subprojects at lower and lower levels of details.

Selection of Phase I proposals will be according to the evaluation procedures and criteria discussed in this solicitation (refer to section 4.2 at the front of this solicitation).

Potential SBIR participants shall mail or hand-carry one original paper copy (clearly marked, with original signatures) and three copies of each proposal to the NIMA SBIR Contracting Officer, Christina Stans:

NIMA / ACW  
Attn: Christina Stans  
4600 Sangamore Rd. Mail Stop D-6  
Bethesda, MD 20816-5003

To hand-carry the documents, participants shall contact Christina Stans to arrange a delivery time.

Telephone: (301) 227-5118  
Fax: (301) 227-3504  
e-mail: [stanscc@nima.mil](mailto:stanscc@nima.mil)

The original paper copy and each copy must include the Proposal Cover Sheet, the Cost Proposal, and the Company Commercialization Report. All proposals must be received by the date and time indicated in Section 6.2 of the introduction to this solicitation.

Proposal submission questions shall be addressed to Captain Brad Burhite. All other questions shall be directed to the NIMA SBIR Program Manager, Mr. Derrick Riddle:

NIMA  
Attn: Derrick Riddle  
4600 Sangamore Rd. Mail Stop D-82  
Bethesda, MD 20816-5003

**NIMA FUNDING POLICY:**

Due to limited funding, NIMA reserves the right to limit awards under either topic, and only those proposals of superior scientific and technical quality will be funded.

**PHASE I CONTRACT INFORMATION:**

NIMA typically provides a firm fixed price contract for Phase I award . The type of contract is at the discretion of the contracting officer.

Each NIMA Phase I contract shall have a base period of performance of not more than six months, with an option of not more than three additional months. Exercise of the option will be at the sole discretion of NIMA.

If a vendor occupies space in a NIMA activity or has a support contract to provide services outside of an SBIR Phase I, II or III contract award with NIMA, they must indicate this on the front of the Proposal Cover Sheet. NIMA is concerned with potential conflicts of interest. If a vendor replies yes to either of these questions, and it is determined that their participation in the NIMA SBIR program would create a conflict of interest, then the vendor will not be allowed to participate in NIMA's SBIR program.

Federally Funded Research and Development Contractors (FFRDC) may be used in the evaluation of your proposal.

Phase I options will be awarded only to those vendors selected to submit Phase II proposals. In order to determine which vendors will receive Phase I options and a chance to submit a Phase II proposal, Phase I contracts shall include a requirement to produce an interim report not later than 4 1/2 months after award. This report shall include the following sections:

- A summary of the results of the Phase I research to date
- A summary of the Phase I tasks not yet completed, including the Option, with an estimate of the completion date for each task
- A statement of potential applications and benefits of the research.

The report shall be no more than 750 words long. The report shall be prepared single spaced in 12 pitch or 11 point Times New Roman font, with at least a one inch margin on top, bottom, and sides, on 8 1/2" by 11" paper. The pages shall be numbered. The report shall be evaluated on the same criteria used to evaluate Phase I proposals.

**Those vendors who are selected to submit Phase II proposals will be notified in writing.**

## **PHASE II GUIDELINES**

NIMA typically provides a cost plus fixed fee contract as a Phase II award. The type of contract is at the discretion of the Contracting Officer.

Phase II proposals shall be limited to \$500,000 over a two year period, with a \$250,000 base proposal (first year) and a \$250,000 option period (second year). Phase II base and Phase II option costs shall be shown separately in the proposal. A work breakdown structure that shows the number of hours, labor category and name of each person that will work on the SBIR to be assigned to each task and subtask, as well as the start and end dates for each task and subtask, as well as the start and end times for each task and subtask, shall be included. The option shall be included with the base proposal at the time of submission.

Selection of Phase II proposals will be according to the evaluation procedures and criteria discussed in this solicitation (refer to section 4.3 at the front of the solicitation).

Phase II contracts shall include a requirement to produce an interim report not later than 10 months after contract award. This report shall include the following sections:

- A summary of the results of the Phase II research to date
- A summary of the Phase II tasks not yet completed, including those in the Option year, with an estimate of the completion date for each task
- A statement of potential applications and benefits of the research.

The report shall be no more than 750 words long. The report shall be prepared single spaced in 12 point Times New Roman font, with at least a one inch margin on top, bottom, and sides, on 8 1/2" by 11" paper. The pages shall be numbered. The report shall be evaluated in accordance with this solicitation (refer to section 4.3 of this solicitation).

Those SBIR participants that are selected to submit Phase II proposals will receive a detailed package of NIMA submission requirements.

## NIMA PROPOSAL CHECKLIST

This is a Checklist of Requirements for your proposal. Please review the checklist carefully to ensure that your proposal meets NIMA SBIR requirements. Failure to meet these requirements will result in your proposal not being considered for review or award. Do not include this checklist with your proposal.

- \_\_\_\_\_ 1. The Proposal Cover Sheet (formerly Appendix A and B) was completed using the SBIR proposal submission system, which can be accessed directly at <http://www.dodsbir.net/submission>. The Proposal Cover Sheet clearly shows the proposal number assigned by the system to your proposal. Indicate if you are a NIMA support contractor.
- \_\_\_\_\_ 2. The proposal addresses a Phase I effort (up to \$70,000 with up to a six-month duration) AND an optional effort (up to \$30,000 with up to a three-month duration).
- \_\_\_\_\_ 3. The proposal is limited to only ONE NIMA solicitation topic.
- \_\_\_\_\_ 4. The Project Summary on the Proposal Cover Sheet contains no proprietary information, does not exceed 200 words, and is limited to the space provided.
- \_\_\_\_\_ 5. The Technical Content of the proposal, including the Option, includes the items identified in Section 3.4 of the solicitation.
- \_\_\_\_\_ 6. The Company Commercialization Report is submitted in accordance with Section 3.4.n. This report is required even if the company has not received any SBIR funding (This report does not count towards the 25-page limit).
- \_\_\_\_\_ 7. The proposal, including the Phase I Option, is 25 pages or less in length (excluding the Company Commercialization Report). Proposals in excess of this length will not be considered for review or award.
- \_\_\_\_\_ 8. The proposal contains only pages of 8-1/2" x 11" size. No other attachments such as disks or videotapes are included.
- \_\_\_\_\_ 9. The proposal contains no type smaller than 12 pitch or 11 point font size (except as legend on reduced drawings, but not tables), Times New Roman font and a one inch margin on top, bottom and sides
- \_\_\_\_\_ 10. The Cost Proposal (Reference A) has been completed for the Phase I and Phase I Option and their costs are shown separately. The Cost Proposal is included at the end of the proposal.
- \_\_\_\_\_ 11. The proposal is stapled in the upper-left-hand corner, and no special binding or covers are used.
- \_\_\_\_\_ 12. An original with original signatures (clearly marked) and three copies of the proposal are submitted.
- \_\_\_\_\_ 13. Include a self-addressed, **stamped** envelope and a copy of the Notification Form located in the back of the solicitation book, if notification of proposal receipt is desired. No responses will be provided if these are not included with your proposal.
- \_\_\_\_\_ 14. The proposal must be sent registered or certified mail, postmarked by January 9, 2002, or delivered to the NIMA SBIR Office no later than January 16, 2002, 3:00 p.m. EST (see Section 6.2). Offerors who elect to use commercial courier services do so at their own risk. NIMA can not accept responsibility for proposals delivered late by commercial couriers.

**NATIONAL IMAGERY AND MAPPING AGENCY  
SBIR 02.1 TOPIC DESCRIPTIONS**

NIMA 02-001

TOPIC: Imagery Exploitation Applications of Neuroscience

TECHNOLOGY AREAS: Human Systems Interface, Battle Space Environments

OBJECTIVE: Explore and develop applications of neuroscience to imagery intelligence and geospatial analysis for detection, change analysis, extraction, attribution, guided /inferred utility, exploitation or use within NIMA and eventual deployment as tools in open system environments.

DESCRIPTION: Neuroscience has recently shown great advances in knowledge of how biological systems work. Some of this knowledge pertains to how the brain works, how it classifies and attains cognition, and how complexity in the brain arises that leads to intelligence. Although still in its infancy, it is already suggesting new approaches to developing artificial systems for recognition and cognition that can be applied to a wide variety of Intelligence and Geospatial communities' analysis and exploitation problems. Interest is in Neuroscience-inspired proposals based on recent published research, and not in further work in artificial neural network (ANN) applications.

PHASE I: Identify, evaluate or develop, and assess neuroscience technologies as applied to imagery exploitation across the electromagnetic spectrum. Develop a design concept and demonstrate first principle results.

PHASE II: Create a prototype application to further develop and demonstrate the utility of identified neuroscience technologies against defined imagery intelligence and geospatial science applications. Develop the functional interfaces to implement the technologies into NIMA and military exploitation systems.

PHASE III DUAL USE APPLICATIONS: In addition to the above military applications, medical personnel who exploit imagery from sources such as X-rays and ultrasound for patient diagnosis can use these technologies. Industrial applications include those of image understanding, in areas such as robot control and quality assurance and the commercial geospatial community.

NIMA 02-002

TOPIC: Innovative Technology for Generating Digital Terrain Elevation Data Level 2 (DTED-2) Above 60 degrees N

TECHNOLOGY AREAS: Information Systems, Battlespace, Space Platforms

OBJECTIVE: Develop and demonstrate innovative approaches that provide a technical capability to efficiently generate DTED-2 above 60 degrees N latitude.

DESCRIPTION: There is an existing requirement for global Digital Terrain Elevation Data Level 2 (DTED-2). For purposes of this solicitation, DTED-2 is defined as digital terrain elevation data at 1 arc second post spacing (post spacing increases above 50 degrees N), with an absolute horizontal or circular error within 20 meters at least 90 percent of the time (90% CE) and an absolute vertical or linear error within 16 meters at least 90 percent of the time (90% LE). This accuracy is commensurate with the expected result of the Shuttle Radar Topography Mission (SRTM). The bulk of this requirement will be satisfied by data from the SRTM. This technology topic is to address innovative techniques to generate DTED-2 in areas not covered by the SRTM (above 60 degrees N) as well as void areas within the SRTM coverage. NIMA's DTED 1&2 product specifications are defined in Military Product Specification (MIL-PRF) 89020A, 19 April 1996.

PHASE I: Research should address the development of an innovative concept to extract digital elevation data from currently available image sources, for example, sources such as RADARSAT or IKONOS. The density and accuracy of the elevation data should be compatible with the SRTM-derived DTED. This phase should also include a demonstration of the technology over two small sites selected by NIMA. Minimizing the need for ground control is highly desirable and will be a factor in assessing the feasibility of the concept.

PHASE II: The technique in Phase I should be developed to a prototype capability, including an ability to mosaic elevation data to ensure a seamless data set. A prototype demonstration should be performed over several large test areas selected by NIMA to illustrate that the technique meets the desired accuracy and seamless/homogeneous coverage (shear along join edges should not exceed one meter, 90% LE) and is cost effective. The elevation data should contain gaps over no more than one percent of the land area of each one-degree cell, whether caused by clouds or other artifacts. Developers are encouraged to address optional

enhancements to develop a technique to identify and flatten water bodies, to develop a technique to detect vertical obstructions, and to demonstrate a technique to generate bare earth elevations vs. reflective surface elevations.

PHASE III DUAL USE APPLICATIONS: The DTED capability developed in this SBIR initiative can be applied to numerous civil applications and can be transitioned to commercial software systems.