

NATIONAL GEOSPATIAL INTELLIGENCE AGENCY
(formerly known as NATIONAL IMAGERY AND MAPPING AGENCY)
FY04.1 SUBMISSION OF PROPOSALS

GENERAL INFORMATION

The mission of the National Geospatial Intelligence Agency (NGA), formerly known as National Imagery and Mapping Agency (NIMA), is to provide timely, relevant, and accurate Geospatial Intelligence in support of national security. Therefore, NGA pursues research that will help guarantee the information edge over potential adversaries. Information on NGA's SBIR Program can be found on the NGA SBIR website at <http://www.nima.mil/poc/contracts/sbir/sbir.html>. Additional information pertaining to the National Imagery and Mapping Agency's mission can be obtained by viewing the website at <http://www.nga.mil/>.

Inquiries of a general nature or questions concerning the administration of the SBIR program should be addressed to:

National Imagery and Mapping Agency
Attn: Mr. Derrick Riddle, IB, MS: D-129
4600 Sangamore Road
Bethesda, MD 20816
Email: SBIR@nga.mil

For technical questions about the topic, contact the Topic Authors listed under each topic on the website before 1 December 2003. For general inquiries or problems with the electronic submission, contact the DoD Help Desk at 1-866-724-7457 (8AM to 5PM EST).

PHASE I PROPOSAL INFORMATION

Read the DoD Program Solicitation at www.dodsbir.net/solicitation for detailed instructions on proposal format and program requirements.

NGA has developed topics to which small businesses may respond in the fiscal year 2004 SBIR Phase I iteration. These topics are described on the following pages. NGA will accept only unclassified proposals on its topics.

The maximum amount of SBIR funding for a Phase I award is \$100,000 and the maximum period of performance for a Phase I award is 9 months. NGA does not participate in the Fast Track program nor Phase II Enhancement.

Selection of Phase I proposals will be in accordance with the evaluation procedures and criteria discussed in this solicitation (refer to section 4.2 of the program solicitation). NGA will apply the criteria in descending order of importance with the first criterion on soundness, technical merit, and incremental progress toward topic or subtopic solution being the most important. Due to limited funding, NGA reserves the right to limit awards under either topic, and only those proposals of superior scientific and technical quality will be funded.

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

NGA typically provides a firm fixed price level of effort contract for Phase I awards. The type of contract is at the discretion of the contracting officer.

NEW REQUIREMENT: ALL PROPOSAL SUBMISSIONS TO THE NGA SBIR PROGRAM MUST BE SUBMITTED ELECTRONICALLY

It is mandatory that the entire technical proposal, DoD Proposal Cover Sheet, Cost Proposal, and the Company Commercialization Report are submitted electronically through the DoD SBIR website at <http://www.dodsbir.net/submission>. If you have any questions or problems with the electronic submission contact the DoD SBIR Helpdesk at 1-866-724-7457 (8AM to 5PM EST).

Complete electronic submission includes the submission of the Cover Sheets, Cost Proposal, Company Commercialization Report, the Entire technical proposal and any appendices via the DoD Submission site. The DoD proposal submission site <http://www.dodsbir.net/submission> will lead you through the process for submitting your technical proposal and all of the sections electronically. Each of these documents are submitted separately

through the website. You are responsible for performing a virus check on each proposal to be uploaded electronically. The detection of a virus on any submission may be cause for the rejection of the proposal. Your proposal must be submitted via the submission site on or before the 6:00 a.m. EST, 15 January 2004 deadline.

If a vendor occupies space in a NGA activity or has a support contract to provide services outside of an SBIR Phase I, II or III contract award with NGA, they must indicate this on the front of the Proposal Cover Sheet. NGA 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 NGA SBIR program would create a conflict of interest, then the vendor will not be allowed to participate in NGA's SBIR program.

Phase I contracts will include a requirement to produce an interim report not later than 7 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, with an estimated 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 interim report shall be evaluated on the same criteria used to evaluate Phase I proposals to decide which Phase I projects will be invited to submit Phase II proposals.

PHASE II GUIDELINES

Phase II proposals are invited by NGA from Phase I projects that have demonstrated the potential for commercialization of useful products and services. The invitation will be issued in writing by NGA.

NGA 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 in accordance with the evaluation procedures and criteria discussed in this solicitation (refer to section 4.3 of the program solicitation). Those SBIR participants that are selected to submit Phase II proposals will receive a detailed package of NGA submission requirements, which will include the relevant importance of the evaluation criteria and also may include additional evaluation criteria.

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).

NGA PROPOSAL CHECKLIST

This is a Checklist of Requirements for your proposal. Please review the checklist carefully to ensure that your proposal meets NGA 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 along with the full Technical Proposal, Cost Proposal, and Company Commercialization Report were submitted 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 NGA support contractor.
- _____ 2. The proposal addresses a Phase I effort (up to \$100,000 with up to a nine-month duration) .
- _____ 3. The proposal is limited to only ONE NGA solicitation topic.
- _____ 4. The Project Summary on the Proposal Cover Sheet contains no proprietary information and is limited to the space provided.
- _____ 5. The Technical Content of the proposal includes the items identified in Section 3.5 of the program solicitation.
- _____ 6. The Company Commercialization Report is submitted online 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 is 25 pages or less in length (excluding the Company Commercialization Report). Pages in excess of this length will not be considered for review or award.
- _____ 8. The proposal contains no type smaller than 12 pitch or 11 point font size (except as legend on reduced drawings, but not tables).
- _____ 9. The Cost Proposal has been completed for the Phase I costs. The Cost Proposal has been filled in electronically or included as the last page of the uploaded technical proposal. The total cost should match the amount on the cover pages.
- _____ 10. The proposal must be electronically submitted through the online submission site (<http://www.dodsbir.net/submission>) by 6a.m. January 15, 2004.

NGA 04.1 Topic List

NGA04-001 Imagery Science/Visualization Related Applications

NGA 04.1 Topic Descriptions

NGA04-001 TITLE: Imagery Science/Visualization Related Applications

TECHNOLOGY AREAS: Information Systems, Battlespace, Human Systems

OBJECTIVE: This research program will provide knowledge and technology to facilitate the extraction, compilation and visualization of information derived from digital imagery sources.

DESCRIPTION: Imagery collection, exploitation and data analysis are technologies critical to NGA. Imagery systems cannot simply be treated as another form of digital data since they interact with the visual system of the human analyst. Digital data extraction requires human analyst perception and manipulation. Interpretation and manipulation is increasingly being performed on digital imagery workstations, as collection systems transition to an all-digital technology base. Most of the knowledge of human and machine interaction used today in exploiting imagery were developed during a period in which imagery was exploited in a hard copy film form. In addition there are now vast quantities of motion imagery available that must be processed and analyzed. Means are needed to improve analysts' efficiency in dealing with the massive Multi-INT data sources. This solicitation seeks innovative proposals in visualization, image processing, and videogrammetry.

Research Concentration Areas:

1: Visualization

Visualization addresses the advancement of multi-INT data fusion and visualization processes, procedures, and technologies. This includes "4D" visualization tools, tools to aid in fusion of massive separate data sources and other novel innovative visualization technologies.

2: Image processing

Image processing for improving the information content of a scene (image) for human and/or machine processing will become more important as imagery from non-literal sensors becomes more prevalent. Research into techniques to characterize a scene and improve the information content for future human processing or prior to machine processing is needed. Research into data and information compression from non-literal sensors is also needed.

3: Videogrammetry

Traditional methods of photogrammetry are used to extract 3-dimensional information from stereo-pair photography. Video source materials from airborne or land-based remotely-piloted vehicles provide an extremely large number of individual frames from progressively changing viewpoints. These images typically have a high-resolution view of the ground and often dwell over the same area for extended periods, revisiting sites repeatedly from different points of view. This imagery could be used for developing very high resolution terrain elevation data, for high resolution feature extraction, for wire frame site model building, and for other geospatial or intelligence needs for which high precision and high accuracy geolocations and measurements are required. Research is needed in mathematical approaches and processing algorithms to efficiently provide image-object geolocation and dimension information, and platform exploitation support data, from video imagery.

PHASE I: Identify, develop, and assess technologies as applied to imagery exploitation.

PHASE II: Implement the technologies into NGA 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.

KEYWORDS: Imagery, Visualization Processes, Image Processing, Collection Analysis, exploitation, Videogrammetry, Multi-INT data fusion, visualization technologies, visualization tools