

PROGRAM SOLICITATION

Number 98.2

**Small Business
Innovation
Research Program**

IMPORTANT

The DoD updates its SBIR mailing list annually. To remain on the mailing list or to be added to the list, send in the Mailing List form (Reference G) found at the back of this solicitation or complete the electronic form at <http://www.teltech.com/sbir/form.html>. Failure to send the form annually will result in removal of your name from the mailing list.

If you have questions about the Defense Department's SBIR program, please call the SBIR/STTR Help Desk at (800) 382-4634, or see the DoD SBIR/STTR Home Page, at <http://www.acq.osd.mil/sadbu/sbir>.

U.S. Department of Defense
SBIR Program Office
Washington, DC 20301

- May 1, 1998:** Solicitation issued for public release
- July 1, 1998:** DoD begins accepting proposals
- August 19, 1998:** Deadline for receipt of proposals at the DoD Components by 2:00 p.m. local time

IMPORTANT NEW INFORMATION ABOUT THE DOD SBIR PROGRAM

1. **The DoD SBIR/STTR Help Desk** can address your questions about this solicitation, the proposal preparation process, contract negotiations, getting paid, government accounting requirements, intellectual property protection, the Fast Track, obtaining outside financing, and other program-related areas. You may contact the Help Desk by:
 - ! Phone: 800-382-4634 (8AM to 8PM EST)
 - ! Fax: 800-462-4128
 - ! Email: SBIRHELP@us.teltech.com
2. **The DoD SBIR/STTR Home Page** (<http://www.acq.osd.mil/sadbu/sbir>) offers electronic access to the SBIR solicitations, hyperlinks to the Component SBIR programs within DoD, answers to commonly-asked questions about contracting with the government, sample SBIR proposals, model SBIR contracts, abstracts of SBIR projects funded between 1983 and 1997, the latest updates on the SBIR program, information on the Small Business Technology Transfer (STTR) program, hyperlinks to the laws and regulations referenced in this solicitation, hyperlinks to sources of business assistance and financing, and other useful information.
3. **The SBIR "Fast Track" policy has been revised and streamlined since the FY 1997 solicitations.** The new Fast Track procedures are discussed in Sections 4.3 and 4.5 of this solicitation. Under the Fast Track policy, SBIR projects that attract some matching cash from an outside investor for the Phase II effort have a significantly higher chance of Phase II award and also receive expedited processing and interim funding between Phases I and II to ensure no delay in reaching the market. For the latest Fast Track results/statistics, see ~~DoD~~ SBIR Home Page.
4. **You may contact the DoD authors of solicitation topics to ask questions about the topics** before you submit a proposal. Procedures for doing so are discussed in Section 1.5(c) of this solicitation. Please note that you may talk by telephone with a topic author to ask such questions only between May 1, when this solicitation was publicly released, and July 1, when DoD begins accepting proposals. At other times, you may submit written questions, and all such questions and the responses will be posted electronically on the Home Page for general viewing.
5. **An SBIR proposal that meets the goals of a solicitation topic but does not use the exact approach specified in the topic will still be considered.** For further information on this new DoD policy, see Section 4.1 of this solicitation.
6. **DoD has significantly reduced delays in the SBIR proposal evaluation and contracting process.** The median time between proposal receipt and award is now less than 4 months in Phase I and 7 months in Phase II. We are working to further reduce the processing time in Phase II.
7. **In future SBIR solicitations, proposers will be required to register in the DoD Central Contractor Registration database before DoD can award them a contract.** This requirement does not apply to contracts resulting from solicitations, including this one, issued on or before May 31, 1998. To obtain information on contractor registration, see <http://ccr.edi.disa.mil>, or call 888-227-2423.

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DoD PROGRAM SOLICITATION FOR SMALL BUSINESS INNOVATION RESEARCH

1.0 PROGRAM DESCRIPTION

1.1 Introduction

The Army, Navy, Defense Advanced Research Projects Agency (DARPA), National Imagery and Mapping Agency (NIMA), and Office of the Secretary of Defense (OSD), hereafter referred to as DoD Components, invite small business firms to submit proposals under this solicitation for the Small Business Innovation Research (SBIR) program. Firms with the capability to conduct research and development (R&D) in any of the defense-related topic areas described in Section 8.0, and to commercialize the results of that R&D, are encouraged to participate.

Objectives of the DoD SBIR Program include stimulating technological innovation, strengthening the role of small business in meeting DoD research and development needs, fostering and encouraging participation by minority and disadvantaged persons in technological innovation, and increasing the commercial application of DoD-supported research or research and development results.

The Federal SBIR Program is mandated by Public Laws PL 97-219, PL 99-443, and PL 102-564. The basic design of the DoD SBIR Program is in accordance with the Small Business Administration (SBA) SBIR Policy Directive, January 1993. The DoD Program presented in this solicitation strives to encourage scientific and technical innovation in areas specifically identified by DoD Components. The guidelines presented in this solicitation incorporate and exploit the flexibility of the SBA Policy Directive to encourage proposals based on scientific and technical approaches most likely to yield results important to the DoD and the private sector.

1.2 Three Phase Program

This program solicitation is issued pursuant to the Small Business Innovation Development Act of 1982, PL 97-219, PL 99-443, and PL 102-564. Phase I is to determine, insofar as possible, the scientific, technical, and commercial merit and feasibility of ideas submitted under the SBIR Program. Phase I awards are typically \$60,000 to \$100,000 in size over a period not to exceed six months (nine months for the Air Force). Proposals should concentrate on that research or research and development which will significantly contribute to proving the scientific, technical, and commercial feasibility of the proposed effort, the successful completion of which is a prerequisite for further DoD support in Phase II. The measure of Phase I success includes evaluations of the extent to which Phase II results would have the potential to yield a product or process of continuing importance to DoD and the private sector. Proposers are encouraged to consider whether the research or research and development they are proposing

to DoD Components also has private sector potential, either for the proposed application or as a base for other applications.

Subsequent Phase II awards will be made to firms on the basis of results of their Phase I effort and the scientific, technical, and commercial merit of the Phase II proposal. Phase II awards are typically \$500,000 to \$750,000 in size over a period generally not to exceed 24 months (subject to negotiation). Phase II is the principal research or research and development effort and is expected to produce a well-defined deliverable prototype. A more comprehensive proposal will be required for Phase II.

Under Phase III, the small business is expected to obtain funding from the private sector and/or non-SBIR Government sources to develop the prototype into a viable product or non-R&D service for sale in military and/or private sector markets.

This solicitation is for Phase I proposals only. Only proposals submitted in response to this solicitation will be considered for Phase I award. Proposers who were not awarded a contract in response to a prior SBIR solicitation are free to update or modify and re-submit the same or modified proposal if it is responsive to any of the topics listed in Section 8.0.

For Phase II, no separate solicitation will be issued and no unsolicited proposals will be accepted. Only those firms that were awarded Phase I contracts will be considered (Section 4.3 and 5.2).

DoD is not obligated to make any awards under either Phase I, II, or III, and all awards are subject to the availability of funds. DoD is not responsible for any monies expended by the proposer before award of any contract.

1.3 Proposer Eligibility and Limitations

Each proposer must qualify as a small business for research or research and development purposes as defined in Section 2.0 and certify to this on the Cover Sheet (Appendix A) of the proposal. In addition, a minimum of two-thirds of the research and/or analytical work in Phase I must be carried out by the proposing firm. For Phase II, a minimum of one-half of the research and/or analytical work must be performed by the proposing firm. The percent of work is usually measured by both direct and indirect costs, although proposers planning to subcontract a significant fraction of their work should verify how it will be measured with their DoD contracting officer during contract negotiations. For both Phase I and II, the primary employment of the principal investigator must be with the small business firm at the time of the award and during the conduct of the proposed effort. Primary employment means that more than one-half of the

principal investigator's time is spent with the small business. Primary employment with a small business concern precludes full-time employment at another organization. Deviations from the requirements in this paragraph must be approved in writing by the contracting officer (during contract negotiations).

For both Phase I and Phase II, all research or research and development work must be performed by the small business concern in the United States. "United States" means the fifty states, the Territories and possessions of the United States, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, and the District of Columbia.

Joint ventures and limited partnerships are permitted, provided that the entity created qualifies as a small business in accordance with the Small Business Act, 15 USC 631, and the definition included in Section 2.2.

1.4 Conflicts of Interest

Awards made to firms owned by or employing current or previous Federal Government employees could create conflicts of interest for those employees in violation of 18 USC and 10 USC 2397. Such proposers should contact the cognizant Ethics Counselor from the employees' Government agency for further guidance.

1.5 Questions about SBIR and Solicitation Topics

a. General Questions/Information. The DoD SBIR/STTR Help Desk is prepared to address general questions about this solicitation, the proposal preparation process, contract negotiation, payment vouchers, Government accounting requirements, intellectual property protection, the Fast Track, financing strategies, and other program-related areas. The Help Desk may be contacted by:

Fax: 800-462-4128
Email: SBIRHELP@us.teltech.com

DOD SBIR/STTR HOME
PAGE: <http://www.acq.osd.mil/sadbu/sbir>

The DoD SBIR/STTR Home Page offers electronic access to SBIR solicitations, answers to commonly asked questions, sample SBIR proposals, model SBIR contracts, abstracts of ongoing SBIR projects, the latest updates on the SBIR program, hyperlinks to sources of business assistance and financing, and other useful information.

b. General Questions about a DoD Component. General questions pertaining to a particular DoD Component (Army, Navy, Air Force, etc) should be submitted in accordance with the instructions given at the beginning of that Component's topics, in Section 8.0 of this solicitation.

c. Technical Questions about Solicitation Topics

On May 1, 1998, this solicitation was issued for public release on the DoD SBIR/STTR Home Page (<http://www.acq.osd.mil/sadbu/sbir>), along with the names of the topic authors and their phone numbers. The names of topic authors and their phone numbers will remain posted on the Home Page until July 1, 1998, giving proposers an opportunity to ask technical questions about specific solicitation topics by telephone.

Once DoD begins accepting proposals on July 1, 1998, telephone questions will no longer be accepted, but proposers may submit written questions through the SBIR Interactive Topic Information System (SITIS), in which the questioner and respondent remain anonymous and all questions and answers are posted electronically for general viewing. Proposers may submit written questions to SITIS via internet (see shortcut bar at the top of the DoD SBIR/STTR Home Page), e-mail, fax, mail, or telephone as follows:

Defense Technical Information Center
MATRIS Office, DTIC-AM
ATTN: SITIS Coordinator
53355 Cole Road
San Diego, CA 92152-7213
Phone: (619) 553-7006
Fax: (619) 553-7053
E-mail: sbir@dticam.dtic.mil
www: <http://dticam.dtic.mil/sbir/>

The SITIS service for this solicitation opens on or around May 12, 1998 and closes to new questions on August 5, 1998. SITIS will post all questions and answers on the Internet (see shortcut bar at the top of the DoD SBIR/STTR Home Page) from May 12, 1998 through August 19, 1998. (Answers will also be emailed or faxed directly to the inquirer if the inquirer provides an e-mail address or fax number.) Answers are generally posted within seven working days of ~~posting~~ <mailto:sbir@dticam.dtic.mil> (8AM to 8PM EST)

All proposers are advised to monitor SITIS during the solicitation period for questions and answers, and other information, relevant to the topic under which they are proposing

1.6 Requests for Copies of DoD SBIR Solicitation

To remain on the DoD Mailing list for the SBIR and STTR solicitations, send in the Mailing List form (Reference G). You may also order additional copies of this solicitation from:

DoD SBIR Support Services
2850 Metro Drive, Suite 600
Minneapolis, MN 55425-1566
(800) 382-4634

The DoD SBIR and STTR solicitations can also be accessed via internet through the DoD SBIR/STTR Home Page at <http://www.acq.osd.mil/sadbu/sbir>

1.7 SBIR Conferences and Outreach

The DoD holds three National SBIR Conferences a year and participates in many state-organized conferences for

small business. For information on these events, see our Home Page (<http://www.acq.osd.mil/sadbu/sbir>). We have a special outreach effort to socially and economically disadvantaged firms.

2.0 DEFINITIONS

The following definitions apply for the purposes of this solicitation:

2.1 Research or Research and Development

Basic Research - Scientific study and experimentation to provide fundamental knowledge required for the solution of problems.

Exploratory Development - A study, investigation or minor development effort directed toward specific problem areas with a view toward developing and evaluating the feasibility and practicability of proposed solutions.

Advanced Development - Proof of design efforts directed toward projects that have moved into the development of hardware for test.

Engineering Development - Full-scale engineering development projects for DoD use but which have not yet received approval for production.

2.2 Small Business

A small business concern is one that, at the time of award of a Phase I or Phase II contract:

a. Is independently owned and operated and organized for profit, is not dominant in the field of operation in which it is proposing, and has its principal place of business located in the United States;

b. Is at least 51% owned, or in the case of a publicly owned business, at least 51% of its voting stock is owned by United States citizens or lawfully admitted permanent resident aliens;

c. Has, including its affiliates, a number of employees not exceeding 500, and meets the other regulatory requirements found in 13 CFR Part 121. Business concerns, other than investment companies licensed, or state development companies qualifying under the Small Business Investment Act of 1958, 15 USC 661, et seq., are affiliates of one another when either directly or indirectly (1) one concern controls or has the power to control the other; or (2) a third party or parties controls or has the power to control both. Control can be exercised through common ownership, common management, and contractual relationships. The term "affiliates" is defined in greater detail in 13 CFR Sec. 121.103. The term "number of employees" is defined in 13 CFR Sec. 121.106. Business concerns include, but are not limited to, any individual, partnership, corporation, joint venture, association or cooperative.

2.3 Socially and Economically Disadvantaged Small Business

A small business that is at the time of award of a Phase I or Phase II contract:

a. At least 51% owned by an Indian tribe or a native Hawaiian organization, or one or more socially and economically disadvantaged individuals, and

b. Whose management and daily business operations are controlled by one or more socially and economically disadvantaged individuals.

A socially and economically disadvantaged individual is defined as a member of any of the following groups: Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent-Asian Americans, or other groups designated by SBA to be socially and economically disadvantaged.

2.4 Women-Owned Small Business

A women-owned small business is one that is at least 51% owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management of the business.

2.5 Funding Agreement

Any contract, grant, or cooperative agreement entered into between any Federal Agency and any small business concern for the performance of experimental, developmental, or research work funded in whole or in part by the federal Government. *Only the contract method will be used by DoD components for all SBIR awards.*

2.6 Subcontract

A subcontract is any agreement, other than one involving an employer-employee relationship, entered into by a Federal Government contract awardee calling for supplies or services required solely for the performance of the original contract. This includes consultants.

2.7 Commercialization

The process of developing a product or non-R&D service for sale (whether by the originating party or by others), in Government and/or private sector markets.

3.0 PROPOSAL PREPARATION INSTRUCTIONS AND REQUIREMENTS

3.1 Proposal Requirements

A proposal to any DoD Component under the SBIR Program is to provide sufficient information to persuade the DoD Component that the proposed work represents an innovative approach to the investigation of an important scientific or engineering problem and is worthy of support under the stated criteria.

The quality of the scientific or technical content of the proposal will be the principal basis upon which proposals will be evaluated. The proposed research or research and development must be responsive to the chosen topic, although need not use the exact approach specified in the topic (see Section 4.1). Any small business contemplating a bid for work on any specific topic should determine that (a) the technical approach has a reasonable chance of meeting the topic objective, (b) this approach is innovative, not routine, and (c) the firm has the capability to implement the technical approach, i.e. has or can obtain people and equipment suitable to the task.

Those responding to this solicitation should note the proposal preparation tips listed below:

- ! Read and follow all instructions contained in this solicitation, including the instructions in Section 8.0 of the DoD component to which you are applying.
- ! Use the free technical information services from DTIC and other information assistance organizations (Section 7.1 - 7.4).
- ! Mark proprietary information as instructed in Sec. 5.6.
- ! Limit your proposal to 25 pages (excluding Company Commercialization Report).
- ! Use a type size no smaller than 12 pitch or 11 point.
- ! Do not include proprietary or classified information in the project summary (Appendix B).
- ! Include a copy of Appendix A, Appendix B, and Appendix E as part of the original of each proposal. (Additional copies of all Appendices can be downloaded from <http://www.acq.osd.mil/sadbu/sbir>)
- ! Do not use a proportionally spaced font on Appendix A and Appendix B.

3.2 Proprietary Information

If information is provided which constitutes a trade secret, proprietary commercial or financial information, confidential personal information, or data affecting the national security, it will be treated in confidence to the extent

permitted by law, provided it is clearly marked in accordance with Section 5.6.

3.3 Limitations on Length of Proposal

This solicitation is designed to reduce the investment of time and cost to small firms in preparing a formal proposal. Those who wish to respond must submit a direct, concise, and informative research or research and development proposal of no more than 25 pages, excluding Company Commercialization Report (Appendix E), (no type smaller than 11 point or 12 pitch on standard 8 1/2" X 11" paper with one (1) inch margins, and a maximum of 6 lines per inch), *including Proposal Cover Sheet (Appendix A), Project Summary (Appendix B), Cost Proposal (Appendix C), and any enclosures or attachments.* Promotional and non-project related discussion is discouraged. Cover all items listed below in Section 3.4 in the order given. The space allocated to each will depend on the problem chosen and the principal investigator's approach. In the interest of equity, proposals in excess of the 25-page limitation (including attachments, appendices, or references, but excluding Company Commercialization Report (Appendix E) will not be considered for review or award.

3.4 Phase I Proposal Format

All pages shall be consecutively numbered and the ORIGINAL of each proposal must contain a completed copy of Appendix A, Appendix B and Appendix E.

a. Cover Sheet. Complete and sign Appendix A, photocopy the completed form, and use a copy as Page 1 of each additional copy of your proposal.

b. Project Summary. Complete Appendix B, photocopy the completed form, and use a copy as Page 2 of each additional copy of your proposal. The technical abstract should include a brief description of the project objectives and description of the effort. Anticipated benefits and commercial applications of the proposed research or research and development should also be summarized in the space provided. The Project Summaries of proposals selected for award will be publicly released on the Internet and, therefore, should not contain proprietary or classified information.

c. Identification and Significance of the Problem or Opportunity. Define the specific technical problem or opportunity addressed and its importance. (Begin on Page 3 of your proposal.)

d. Phase I Technical Objectives. Enumerate the specific objectives of the Phase I work, including the questions it will try to answer to determine the feasibility of the proposed approach.

e. Phase I Work Plan. Provide an explicit, detailed description of the Phase I approach. The plan should indicate what is planned, how and where the work will be carried out, a schedule of major events, and the final product to be delivered. The Phase I effort should attempt to determine the technical feasibility of the proposed concept. The methods planned to achieve each objective or task should be discussed explicitly and in detail. This section should be a substantial portion of the total proposal.

f. Related Work. Describe significant activities directly related to the proposed effort, including any conducted by the principal investigator, the proposing firm, consultants, or others. Describe how these activities interface with the proposed project and discuss any planned coordination with outside sources. The proposal must persuade reviewers of the proposer's awareness of the state-of-the-art in the specific topic.

Describe previous work not directly related to the proposed effort but similar. Provide the following: (1) short description, (2) client for which work was performed (including individual to be contacted and phone number), and (3) date of completion.

g. Relationship with Future Research or Research and Development.

- (1) State the anticipated results of the proposed approach if the project is successful.
- (2) Discuss the significance of the Phase I effort in providing a foundation for Phase II research or research and development effort.

h. Commercialization Strategy. Describe, in approximately one page, your company's strategy for converting your proposed SBIR research into a product or non-R&D service with widespread commercial use -- including private sector and/or military markets.

I. Key Personnel. Identify key personnel who will be involved in the Phase I effort including information on directly related education and experience. A concise resume of the principal investigator, including a list of relevant publications (if any), must be included.

j. Facilities/Equipment. Describe available instrumentation and physical facilities necessary to carry out the Phase I effort. Items of equipment to be purchased (as detailed in Appendix C) shall be justified under this section. Also state whether or not the facilities where the proposed work will be performed meet environmental laws and regulations of federal, state (name), and local Governments for, but not limited to, the following groupings: airborne

emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials.

k. Consultants. Involvement of a university or other consultants in the project may be appropriate. If such involvement is intended, it should be described in detail and identified in Appendix C. A minimum of two-thirds of the research and/or analytical work in Phase I, as measured by direct and indirect costs, must be carried out by the proposing firm, unless otherwise approved in writing by the contracting officer.

l. Prior, Current, or Pending Support of Similar Proposals or Awards. *Warning* -- While it is permissible, with proposal notification, to submit identical proposals or proposals containing a significant amount of essentially equivalent work for consideration under numerous federal program solicitations, it is unlawful to enter into contracts or grants requiring essentially equivalent effort. If there is any question concerning this, it must be disclosed to the soliciting agency or agencies before award.

If a proposal submitted in response to this solicitation is substantially the same as another proposal that has been funded, is now being funded, or is pending with another Federal Agency or DoD Component or the same DoD Component, the proposer must so indicate on Appendix A and provide the following information:

- (1) Name and address of the Federal Agency(s) or DoD Component to which a proposal was submitted, will be submitted, or from which an award is expected or has been received.
- (2) Date of proposal submission or date of award.
- (3) Title of proposal.
- (4) Name and title of principal investigator for each proposal submitted or award received.
- (5) Title, number, and date of solicitation(s) under which the proposal was submitted, will be submitted, or under which award is expected or has been received.
- (6) If award was received, state contract number.
- (7) Specify the applicable topics for each SBIR proposal submitted or award received.

Note: If Section 3.4.1 does not apply, state in the proposal "No prior, current, or pending support for proposed work."

m. Cost Proposal. Complete the cost proposal in the form of Appendix C for the Phase I effort only. Some items of Appendix C may not apply to the proposed project. If such is the case, there is no need to provide information on each and every item. What matters is that enough information be provided to allow the DoD Component to understand how the proposer plans to use the requested funds if the contract is awarded.

- (1) List all key personnel by name as well as by number of hours dedicated to the project as direct labor.
- (2) Special tooling and test equipment and material cost may be included under Phases I and II. The inclusion of

equipment and material will be carefully reviewed relative to need and appropriateness for the work proposed. The purchase of special tooling and test equipment must, in the opinion of the Contracting Officer, be advantageous to the Government and should be related directly to the specific topic. These may include such items as innovative instrumentation and/or automatic test equipment. Title to property furnished by the Government or acquired with Government funds will be vested with the DoD Component, unless it is determined that transfer of title to the contractor would be more cost effective than recovery of the equipment by the DoD Component.

- (3) Cost for travel funds must be justified and related to the needs of the project.
- (4) Cost sharing is permitted for proposals under this solicitation; however, cost sharing is not required nor will it be an evaluation factor in the consideration of a Phase I proposal.

n. Company Commercialization Report on Prior SBIR Awards. All small business concerns submitting a Phase I or Phase II proposal must complete Appendix E (Company Commercialization Report), listing the commercialization status of all of the concern's prior Phase II efforts. (This required proposal information shall not be counted toward proposal pages count limitations.) A Report showing that a small business concern has received no prior Phase II awards will not affect the concern's ability to obtain an SBIR award.

3.5 Bindings

Do not use special bindings or covers. Staple the pages in the upper left hand corner of each proposal.

3.6 Phase II Proposal Format

This solicitation is for Phase I only. A Phase II proposal can be submitted only by a Phase I awardee and only in response to a request from the agency; that is, Phase II is not initiated by a solicitation.

Each Phase II proposal must contain a Cover Sheet (Appendix A), a Project Summary Sheet (Appendix B), and a Company Commercialization Report (Appendix E). In addition, each Phase II proposal must contain a two-page commercialization strategy, addressing the following questions:

- (1) What is the first product that this technology will go into?
- (2) Who will be your customers, and what is your estimate of the market size?
- (3) How much money will you need to bring the technology to market, and how will you raise that money?
- (4) Does your company contain marketing expertise and, if not, how do you intend to bring that expertise into the company?
- (5) Who are your competitors, and what is your price and/or quality advantage over your competitors?

Copies of Appendices along with additional instructions regarding Phase II proposal preparation and submission will be provided by the DoD Components to all Phase I winners at time of Phase I contract award.

3.7 False Statements

Knowingly and willfully making any false, fictitious, or fraudulent statements or representations may be a felony under the Federal Criminal False Statement Act (18 U.S.C. Sec 1001), punishable by a fine of up to \$10,000, up to five years in prison, or both.

4.0 METHOD OF SELECTION AND EVALUATION CRITERIA

4.1 Introduction

Phase I proposals will be evaluated on a competitive basis and will be considered to be binding for six (6) months from the date of closing of this solicitation unless the offeror states otherwise. If selection has not been made prior to the proposal's expiration date, offerors will be requested as to whether or not they want to extend their proposal for an additional period of time. Proposals meeting stated solicitation requirements will be evaluated by scientists or engineers knowledgeable in the topic area. Proposals will be evaluated first on their relevance to the chosen topic. A proposal that meets the goals of a solicitation topic but does not use the exact approach specified in the topic will be considered relevant. (Prospective proposers should contact the topic author as described in Section 1.5 to determine whether submission of such a proposal would be useful.)

Proposals found to be relevant will then be evaluated using the criteria listed in Section 4.2. Final decisions will be made by the DoD Component based upon these criteria and consideration of other factors including possible duplication of other work, and program balance. A DoD Component may elect to fund several or none of the proposed approaches to the same topic. In the evaluation and handling of proposals, every effort will be made to protect the confidentiality of the proposal and any evaluations. There is no commitment by the DoD Components to make any awards on any topic, to make a specific number of awards or to be responsible for any monies expended by the proposer before award of a contract.

For proposals that have been selected for contract award, a Government Contracting Officer will draw up an appropriate contract to be signed by both parties before work begins. Any negotiations that may be necessary will be conducted between the offeror and the Government Contracting Officer. It should be noted that only a duly appointed contracting officer has the authority to enter into a contract on behalf of the U.S. Government.

Phase II proposals will be subject to a technical review process similar to Phase I. Final decisions will be made by DoD Components based upon the scientific and technical evaluations and other factors, including a commitment for Phase III follow-on funding, the possible duplication with other research or research and development, program balance, budget limitations, and the potential of a successful Phase II effort leading to a product of continuing interest to DoD. DoD is not obligated to make any awards under Phase II or the Fast Track, and all awards are subject to the availability of funds. DoD is not responsible for any monies expended by the proposer before award of a contract.

Upon written request and after final award decisions have been announced, a debriefing will be provided to unsuccessful offerors on their proposals.

4.2 Evaluation Criteria - Phase I

The DoD Components plan to select for award those

proposals offering the best value to the Government and the nation considering the following factors.

- a. The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution.
- b. The qualifications of the proposed principal/key investigators, supporting staff, and consultants. Qualifications include not only the ability to perform the research and development but also the ability to commercialize the results.
- c. The potential for commercial (Government or private sector) application and the benefits expected to accrue from this commercialization.

Where technical evaluations are essentially equal in merit, cost to the Government will be considered in determining the successful offeror.

Technical reviewers will base their conclusions only on information contained in the proposal. It cannot be assumed that reviewers are acquainted with the firm or key individuals or any referenced experiments. Relevant supporting data such as journal articles, literature, including Government publications, etc., should be contained or referenced in the proposal.

4.3 Evaluation Criteria - Phase II

The Phase II proposal will be reviewed for overall merit based upon the criteria below.

- a. The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution.
- b. The qualifications of the proposed principal/key investigators, supporting staff, and consultants. Qualifications include not only the ability to perform the research and development but also the ability to commercialize the results.
- c. The potential for commercial (Government or private sector) application and the benefits expected to accrue from this commercialization.

The reasonableness of the proposed costs of the effort to be performed will be examined to determine those proposals that offer the best value to the Government. Where technical evaluations are essentially equal in merit, cost to the Government will be considered in determining the successful offeror.

Phase II proposal evaluation may include on-site evaluations of the Phase I effort by Government personnel.

Fast Track Phase II proposals. Under the regular Phase II evaluation process, the above three criteria are each given roughly equal weight (with some variation across the DoD Components). For projects that qualify for the Fast Track (as discussed in Section 4.5), DoD will evaluate the Phase II proposals under a separate, expedited process in accordance with the above criteria, and will select these proposals for

Phase II award provided:

- (1) they meet or exceed a threshold of "technically sufficient" for criteria (a) and (b); and
- (2) the project has substantially met its Phase I technical goals (and assuming budgetary and other programmatic factors are met, as discussed in Section 4.1). Fast Track proposals, having attracted matching cash from an outside investor, presumptively meet criterion (c). Consistent with DoD policy, this process should result in a significantly higher percentage of Fast Track projects obtaining Phase II award than non-Fast Track projects.

4.4 Assessing Commercial Potential of Proposals

A Phase I or Phase II proposal's commercial potential can be evidenced by:

- a. The small business concern's record of commercializing SBIR or other research, particularly as reflected in its Company Commercialization Report (Appendix E).
- b. The existence of second phase funding commitments from private sector or non-SBIR funding sources.
- c. The existence of third phase follow-on commitments for the subject of the research.
- d. The presence of other indicators of commercial potential of the idea, including the small business' commercialization strategy (discussed in Sections 3.4.h and 3.6, above).

If a company chooses to submit a third phase follow-on commitment per (c.) above, the commitment should state that the small business or a third party will provide follow-on funding in Phase III, and indicate the dates on which the funds will be made available. The commitment should also contain specific technical objectives which, if achieved in Phase II, will make the commitment exercisable by the small business. The terms should not be contingent upon the obtaining of a patent due to the length of time this process requires. The funding commitment should be submitted with the Phase II proposal.

4.5 SBIR Fast Track

a. In General. On a pilot basis, the DoD SBIR program has implemented a streamlined Fast Track process for SBIR projects that attract matching cash from an outside investor for the Phase II SBIR effort (as well as for the interim effort between Phases I and II). The purpose is to focus SBIR funding on those projects that are most likely to be developed into viable new products that DoD and others will buy and that will thereby make a major contribution to U.S. military and/or economic capabilities.

Outside investors, as defined in DoD's Fast Track Guidance (Reference E), may include such entities as another company, a venture capital firm, an individual investor, or a

non-SBIR, non-STTR government program; they do not include the owners of the small business, their family members, and/or affiliates of the small business.

As discussed in detail below, projects that obtain matching funds from outside investors and thereby qualify for the SBIR Fast Track will (subject to the qualifications described herein):

- (1) Receive interim funding of \$30,000 to \$50,000 between Phases I and II;
- (2) Be evaluated for Phase II award under a separate, expedited process; and
- (3) Be selected for Phase II award provided they meet or exceed a threshold of "technically sufficient" and have substantially met their Phase I technical goals (and assuming other programmatic factors are met), as described in Section 4.3.

Consistent with DoD policy, this process should prevent any significant gaps in funding between Phases I and II for Fast Track projects, and result in a significantly higher percentage of Fast Track projects obtaining Phase II award than non-Fast Track projects.

b. How To Qualify for the SBIR Fast Track. To qualify for the SBIR Fast Track, a company must submit a Fast Track application within 150 days after the effective start date of its Phase I contract, unless a different deadline for Fast Track applications is specified by the DoD Component funding the project (see the Component's introductory page in Section 8 of this solicitation - the deadlines range from 120 to 180 days). The company is encouraged to discuss the application with its Phase I technical monitor; however, it need not wait for an invitation from the technical monitor to submit either a Fast Track application or a Fast Track Phase II proposal.

A Fast Track application consists of the following items:

- (1) A completed Fast Track application form, found at Appendix D. On the application form, the company and its outside investor must:
 - (a) State that the outside investor will match both interim and Phase II SBIR funding, in cash, contingent on the company's selection for Phase II award, as described on the form at Appendix D. The matching rates needed to qualify for the Fast Track are as follows:

! For companies that have never received a Phase II SBIR award from DoD or any other federal agency, the minimum matching rate is 25 cents for every SBIR dollar. (For example, if such a company receives interim and Phase II SBIR funding that totals \$750,000, it must obtain matching funds from the investor of \$187,500.)

! For all other companies, the minimum matching rate is 1 dollar for every SBIR dollar. (For example, if such a company receives interim and Phase II SBIR funding that totals \$750,000, it must obtain matching funds from the investor of \$750,000.)

(b) Certify that the outside funding proposed in the application qualifies as a "Fast Track investment," and the investor qualifies as an "outside investor," as defined in DoD Fast Track Guidance (Reference E).

(2) A letter from the outside investor to the company, containing:

(a) A commitment to match both interim and Phase II SBIR funding, in cash, contingent on the company's selection for Phase II award, as discussed on the form at Appendix D.

(b) A brief statement (less than one page) describing that portion of the effort that the investor will fund. The investor's funds may pay for additional research and development on the company's SBIR project or, alternatively, they may pay for other activities not included in the Phase II contract's statement of work, provided these activities further the development and/or commercialization of the technology (e.g., marketing).

(c) A brief statement (less than one page) describing (i) the investor's experience in evaluating companies' ability to successfully commercialize technology; and (ii) the investor's assessment of the market for this particular SBIR technology, and of the ability of the company to bring this technology to market.

(3) A concise statement of work for the interim SBIR effort (less than four pages) and detailed cost proposal (less than one page). Note: if the company has already negotiated an interim effort (e.g., an "option") of \$30,000 to \$50,000 with DoD as part of its Phase I contract, it need only cite that section of its contract, and need not submit an additional statement of work and cost proposal.

The company should send its Fast Track application to its Phase I technical monitor, with copies to the appropriate Component program manager and to the DoD SBIR program manager, as indicated on the back of the application form.

Also, in order to qualify for the Fast Track, the company:

(1) Must submit its Phase II proposal within 180 days after the effective start date of its Phase I contract, unless a different deadline for Fast Track Phase II proposals is specified by the DoD Component funding the contract (see the Component's introductory page in Section 8 of this solicitation - the deadlines range from 150 days to 210 days).

(2) Must submit its Phase I final report by the deadline specified in its Phase I contract, but not later than 210 days after the effective start date of the contract.

(3) Must certify, within 45 days after being notified that it has been selected for Phase II award, that the entire amount of the matching funds from the outside investor has been transferred to the company. Certification consists of a letter, signed by both the company and its outside investor, stating that "\$ _____ in cash has been transferred to our company from our outside investor in accord with the SBIR Fast Track procedures." The letter must be sent to the DoD contracting office along with a copy of the company's bank statement showing the funds have been deposited. IMPORTANT: If the DoD contracting office does not receive, within the 45 days, this certification showing the transfer of funds, the company will be ineligible to compete for a Phase II award not only under the Fast Track but also under the regular Phase II competition, unless a specific written exception is granted by the Component's SBIR program manager. Before signing the certification letter, the company and investor should read the cautionary note at Section 3.7. If the outside investor is a non-SBIR/non-STTR DoD program, it must provide a line of accounting within the 45 days that can be accessed immediately.

Failure to meet these conditions in their entirety and within the time frames indicated will generally disqualify a company from participation in the SBIR Fast Track. Deviations from these conditions must be approved in writing by the contracting office.

c. Benefits of Qualifying for the Fast Track. If a project qualifies for the Fast Track:

(1) It will receive interim SBIR funding of \$30,000 to \$50,000, commencing approximately at the end of Phase I. Consistent with DoD policy, the vast majority of projects that qualify for the Fast Track should receive interim SBIR funding. However, the DoD contracting office has the discretion and authority, in any particular instance, to deny interim funding when doing so is in the Government's interest (e.g., when the project no longer meets a military need or the statement of work does not meet the threshold of "technically sufficient" as described in Section 4.3).

(2) DoD will evaluate the Fast Track Phase II proposal under a separate, expedited process, and will select the proposal for Phase II award provided it meets or exceeds a threshold of "technically sufficient" for evaluation criteria (a) and (b), as described in Section 4.3 (assuming budgetary and other programmatic factors are met, as discussed in Section 4.1). Consistent with DoD policy, this process should result in a significantly higher percentage of Fast Track projects obtaining Phase II award than

non-Fast Track projects. However, DoD is not obligated, in any particular instance, to award a Phase II contract to a Fast Track project, and DoD is not responsible for any funds expended by the proposer before award of a contract.

(3) It will receive notification, no later than ten weeks after the completion of its Phase I project, of whether it has been selected for a Phase II award.

(4) If selected, it will receive its Phase II award within an average of five months from the completion of its Phase I

5.0 CONTRACTUAL CONSIDERATIONS

Note: Eligibility and Limitation Requirements (Section 1.3) Will Be Enforced

5.1 Awards (Phase I)

a. Number of Phase I Awards. The number of Phase I awards will be consistent with the agency's RDT&E budget, the number of anticipated awards for interim Phase I modifications, and the number of anticipated Phase II contracts. No Phase I contracts will be awarded until all qualified proposals (received in accordance with Section 6.2) on a specific topic have been evaluated. All proposers will be notified of selection/non-selection status for a Phase I award no later than Feb. 19, 1999. *The DoD Components anticipate making 250 Phase I awards from this solicitation.* On average, 1 in 8 Phase I proposals receive funding.

b. Type of Funding Agreement. All winning proposals will be funded under negotiated contracts and may include a fee or profit. The firm fixed price or cost plus fixed fee type contract will be used for all Phase I projects (see Section 5.5). *Note: The firm fixed price contract is the preferred type for Phase I.*

c. Average Dollar Value of Awards. DoD Components will make Phase I awards to small businesses typically on a one-half person-year effort over a period generally not to exceed six months (subject to negotiation). PL 102-564 allows agencies to award Phase I contracts up to \$100,000 without justification. The typical size of award varies across the DoD Components; it is therefore important for a proposer to read the introductory page of the Component to which it is applying (in Section 8.0) for any specific instructions regarding award size

5.2 Awards (Phase II)

a. Number of Phase II Awards. The number of Phase II awards will depend upon the results of the Phase I efforts and the availability of funds. *The DoD Components anticipate that approximately 40 percent of its Phase I awards will result in Phase II projects.*

b. Type of Funding Agreement. Each Phase II proposal selected for award will be funded under a negotiated contract and may include a fee or profit.

project.

d. Additional Reporting Requirement. In the company's final Phase II progress report, it must include a brief accounting (in the company's own format) of how the investor's funds were expended to support the project.

c. Average Dollar Value of Awards. Phase II awards will be made to small businesses based on results of the Phase I efforts and the scientific, technical, and commercial merit of the Phase II proposal. Average Phase II awards will typically cover 2 to 5 person-years of effort over a period generally not to exceed 24 months (subject to negotiation). PL 102-564 states that the Phase II awards may be up to \$750,000 each without justification. See special instructions for each DoD Component in Section 8.

5.3 Phase I Report

a. Content. A final report is required for each Phase I project. The report must contain in detail the project objectives, work performed, results obtained, and estimates of technical feasibility. A completed SF 298, "Report Documentation Page", will be used as the first page of the report. (A blank SF298 is provided in Section 9.0, Reference D.) In addition, monthly status and progress reports may be required by the DoD agency.

b. Preparation.

- (1) If desirable, language used by the company in its Phase II proposal to report Phase I progress may also be used in the final report.
- (2) For each unclassified report, the company submitting the report should fill in block 12a (Distribution/Availability Statement) of the SF298, "Report Documentation Page" with one of the following statements:

- (a) Approved for public release; distribution unlimited.
- (b) Distribution authorized to U.S. Government Agencies only; contains proprietary information.

Note: The sponsoring DoD activity, after reviewing the company's entry in block 12a, has final responsibility for assigning a distribution statement.

- (3) Block 13 (Abstract) of the SF 298, "Report Documentation Page" must include as the first sentence, "Report developed under SBIR contract for topic [insert solicitation topic number]". The abstract must identify the purpose of the work and briefly

describe the work carried out, the finding or results and the potential applications of the effort. Since the abstract will be published by the DoD, it must not contain any proprietary or classified data.

(4) Block 14 (Subject Terms) of the SF 298 must include the term "SBIR Report".

c. Submission. The company shall submit FIVE COPIES of the final report on each Phase I project to the DoD in accordance with the negotiated delivery schedule. Delivery will normally be within thirty days after completion of the Phase I technical effort. The company shall also submit ONE ADDITIONAL COPY of each report directly to the DTIC (assuming the DoD has not determined it to be classified), ATTN: Document Acquisition, 8725 John J Kingman Road, Suite 0944, Ft. Belvoir, VA 22060-6218. *Note: The sponsoring DoD activity has final responsibility for ensuring that the company or the DoD activity provide DTIC with all applicable Phase I and Phase II technical reports developed under SBIR contract, per DoD Directive 3200.12*
(<http://web7.whs.osd.mil/dodiss/directives/direct2.htm>).

5.4 Other Reports

If asked, the contractor will be required to provide DoD with a report during Phase II, and each year for five years after completion of Phase II, detailing: (1) the revenue from sales of new products or non-R&D services resulting from the SBIR project, and (2) the sources and amounts of non-SBIR, non-STTR funding received from the Government and/or private sector sources to further develop the SBIR technology.

5.5 Payment Schedule

The specific payment schedule (including payment amounts) for each contract will be incorporated into the contract upon completion of negotiations between the DoD and the successful Phase I or Phase II offeror. Successful offerors may be paid periodically as work progresses in accordance with the negotiated price and payment schedule. Phase I contracts are primarily fixed price contracts, under which monthly payments may be made. The contract may include a separate provision for payment of a fee or profit. Final payment will follow completion of contract performance and acceptance of all work required under the contract. Other types of financial assistance may be available under the contract.

5.6 Markings of Proprietary or Classified Proposal Information

The proposal submitted in response to this solicitation may contain technical and other data which the proposer does not want disclosed to the public or used by the Government for any purpose other than proposal evaluation.

Information contained in unsuccessful proposals will

remain the property of the proposer except for Appendices A and B. The Government may, however, retain copies of all proposals. Public release of information in any proposal submitted will be subject to existing statutory and regulatory requirements.

If proprietary information is provided by a proposer in a proposal which constitutes a trade secret, proprietary commercial or financial information, confidential personal information or data affecting the national security, it will be treated in confidence, to the extent permitted by law, provided this information is clearly marked by the proposer with the term "confidential proprietary information" and provided that the following legend which appears on the title page (Appendix A) of the proposal is completed:

"For any purpose other than to evaluate the proposal, this data except Appendix A and B shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed in whole or in part, provided that if a contract is awarded to the proposer as a result of or in connection with the submission of this data, the Government shall have the right to duplicate, use or disclose the data to the extent provided in the contract. This restriction does not limit the Government's right to use information contained in the data if it is obtained from another source without restriction. The data subject to this restriction is contained in page(s) _____ of this proposal."

Any other legend may be unacceptable to the Government and may constitute grounds for removing the proposal from further consideration and without assuming any liability for inadvertent disclosure. The Government will limit dissemination of properly marked information to within official channels.

In addition, each page of the proposal containing proprietary data which the proposer wishes to restrict must be marked with the following legend:

"Use or disclosure of the proposal data on lines specifically identified by asterisk (*) are subject to the restriction on the cover page of this proposal."

If all of the information on a particular page is proprietary, the proposer should so note by including the word "PROPRIETARY" in both the header and footer on that page.

The Government assumes no liability for disclosure or use of unmarked data and may use or disclose such data for any purpose.

In the event properly marked data contained in a proposal in response to this solicitation is requested pursuant to the Freedom of Information Act, 5 USC 552, the proposer will be advised of such request and prior to such release of information will be requested to expeditiously submit to the DoD Component a detailed listing of all information in the proposal which the proposer believes to be exempt from disclosure under the Act. Such action and cooperation on the part of the proposer will ensure that any information released

by the DoD Component pursuant to the Act is properly determined.

Those proposers that have a classified facility clearance may submit classified material with their proposal. Any classified material shall be marked and handled in accordance with applicable regulations. Arbitrary and unwarranted use of this restriction is discouraged. Offerors must follow the Industrial Security Manual for Safeguarding Classified Information (DoD 5220.22M) procedures for marking and handling classified material.

5.7 Copyrights

To the extent permitted by statute, the awardee may copyright (consistent with appropriate national security considerations, if any) material developed with DoD support. DoD receives a royalty-free license for the Federal Government and requires that each publication contain an appropriate acknowledgment and disclaimer statement.

5.8 Patents

Small business firms normally may retain the principal worldwide patent rights to any invention developed with Government support. The Government receives a royalty-free license for its use, reserves the right to require the patent holder to license others in certain limited circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must normally manufacture it domestically. To the extent authorized by 35 USC 205, the Government will not make public any information disclosing a Government-supported invention for a period of five years to allow the awardee to pursue a patent.

5.9 Technical Data Rights

Rights in technical data, including software, developed under the terms of any contract resulting from proposals submitted in response to this solicitation generally remain with the contractor, except that the Government obtains a royalty-free license to use such technical data only for Government purposes during the period commencing with contract award and ending five years after completion of the project under which the data were generated. Upon expiration of the five-year restrictive license, the Government has unlimited rights in the SBIR data. During the license period, the Government may not release or disclose SBIR data to any person other than its support services contractors except: (1) For evaluational purposes; (2) As expressly permitted by the contractor; or (3) A use, release, or disclosure that is necessary for emergency repair or overhaul of items operated by the Government. See FAR clause 52.227-20, "Rights in Data - SBIR Program" and DFARS 252.227-7018, "Rights in Noncommercial Technical Data and Computer Software-- SBIR Program."

5.10 Cost Sharing

Cost sharing is permitted for proposals under this

solicitation; however, cost sharing is not required nor will it be an evaluation factor in the consideration of any Phase I proposal.

5.11 Joint Ventures or Limited Partnerships

Joint ventures and limited partnerships are eligible provided the entity created qualifies as a small business as defined in Section 2.2 of this solicitation.

5.12 Research and Analytical Work

a. For Phase I a minimum of two-thirds of the research and/or analytical work must be performed by the proposing firm unless otherwise approved in writing by the contracting officer.

b. For Phase II a minimum of one-half of the research and/or analytical work must be performed by the proposing firm, unless otherwise approved in writing by the contracting officer.

The percentage of work is usually measured by both direct and indirect costs, although proposers planning to subcontract a significant fraction of their work should verify how it will be measured with their contracting officer during contract negotiations.

5.13 Contractor Commitments

Upon award of a contract, the contractor will be required to make certain legal commitments through acceptance of Government contract clauses in the Phase I contract. The outline that follows is illustrative of the types of provisions required by the Federal Acquisition Regulations that will be included in the Phase I contract. This is not a complete list of provisions to be included in Phase I contracts, nor does it contain specific wording of these clauses. Copies of complete general provisions will be made available prior to award.

a. Standards of Work. Work performed under the contract must conform to high professional standards.

b. Inspection. Work performed under the contract is subject to Government inspection and evaluation at all reasonable times.

c. Examination of Records. The Comptroller General (or a fully authorized representative) shall have the right to examine any directly pertinent records of the contractor involving transactions related to this contract.

d. Default. The Government may terminate the contract if the contractor fails to perform the work contracted.

e. Termination for Convenience. The contract may be terminated at any time by the Government if it deems

termination to be in its best interest, in which case the contractor will be compensated for work performed and for reasonable termination costs.

f. Disputes. Any dispute concerning the contract which cannot be resolved by agreement shall be decided by the contracting officer with right of appeal.

g. Contract Work Hours. The contractor may not require an employee to work more than eight hours a day or forty hours a week unless the employee is compensated accordingly (that is, receives overtime pay).

h. Equal Opportunity. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.

i. Affirmative Action for Veterans. The contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era.

j. Affirmative Action for Handicapped. The contractor will not discriminate against any employee or applicant for employment because he or she is physically or mentally handicapped.

k. Officials Not to Benefit. No member of or delegate to Congress shall benefit from the contract.

l. Covenant Against Contingent Fees. No person or agency has been employed to solicit or secure the contract upon an understanding for compensation except bona fide employees or commercial agencies maintained by the contractor for the purpose of securing business.

m. Gratuities. The contract may be terminated by the Government if any gratuities have been offered to any representative of the Government to secure the contract.

n. Patent Infringement. The contractor shall report each notice or claim of patent infringement based on the performance of the contract.

o. Military Security Requirements. The contractor shall safeguard any classified information associated with the contracted work in accordance with applicable regulations.

p. American Made Equipment and Products. When purchasing equipment or a product under the SBIR funding agreement, purchase only American-made items whenever

possible.

5.14 Additional Information

a. General. This Program Solicitation is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR contract, the terms of the contract are controlling.

b. Small Business Data. Before award of an SBIR contract, the Government may request the proposer to submit certain organizational, management, personnel, and financial information to confirm responsibility of the proposer.

c. Proposal Preparation Costs. The Government is not responsible for any monies expended by the proposer before award of any contract.

d. Government Obligations. This Program Solicitation is not an offer by the Government and does not obligate the Government to make any specific number of awards. Also, awards under this program are contingent upon the availability of funds.

e. Unsolicited Proposals. The SBIR Program is not a substitute for existing unsolicited proposal mechanisms. Unsolicited proposals will not be accepted under the SBIR Program in either Phase I or Phase II.

f. Duplication of Work. If an award is made pursuant to a proposal submitted under this Program Solicitation, the contractor will be required to certify that he or she has not previously been, nor is currently being, paid for essentially equivalent work by an agency of the Federal Government.

g. Classified Proposals. If classified work is proposed or classified information is involved, the offeror to the solicitation must have, or obtain, security clearance in accordance with the Industrial Security Manual for Safeguarding Classified Information (DoD 5220.22M). The Manual is available on-line at <http://www.dis.mil> or in hard copy from:

Defense Investigative Service
1340 Braddock Place
Alexandria, VA 22314
Phone: (703) 325-5324

6.0 SUBMISSION OF PROPOSALS

An original plus (4) copies of each proposal or

modification will be submitted, in a single package, as

described below, unless otherwise stated by specific instructions in Section 8.0.

NOTE: THE ORIGINAL OF EACH PROPOSAL MUST CONTAIN A COMPLETED APPENDIX A (COVER SHEET), APPENDIX B (PROJECT SUMMARY), AND APPENDIX E (COMPANY COMMERCIALIZATION REPORT).

6.1 Address

Each proposal or modification thereof shall be submitted in sealed envelopes or packages addressed to that DoD Component address which is identified for the specific topic in that Component's subsection of Section 8.0 to this solicitation.

The name and address of the offeror, the solicitation number, the topic number for the proposal, and the time and date specified for proposal receipt must be clearly marked on the outside of the envelope or package. To protect your proposal against rough handling, damage in the mail, and the possibility of unauthorized disclosures, it is recommended that your proposal be double-wrapped and that both the inner and outer envelopes or wrappings be clearly marked.

Offerors using commercial carrier services shall ensure that the proposal is addressed and marked on the outermost envelope or wrapper as prescribed above.

Mailed or handcarried proposals must be delivered to the address indicated for each topic. Secured packaging is mandatory. The DoD Component cannot be responsible for the processing of proposals damaged in transit.

All copies of a proposal must be sent in the same package. Do not send separate information copies or several packages containing parts of the single proposal.

6.2 Deadline of Proposals

Deadline for receipt of proposals at the DoD Component is 2:00 p.m. local time, August 19, 1998. Any proposal received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before an award is made, and: (a) it was sent by registered or certified mail not later than August 5, 1998 or (b) it was sent by mail and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation.

Note: There are no other provisions for late receipt of proposals under this solicitation.

The only acceptable evidence to establish (a) the date of mailing of a late-received proposal sent either by registered mail or certified mail is the U. S. Postal Service postmark on the wrapper or on the original receipt from the U.S. Postal Service. If neither postmark shows a legible date, the proposal shall be deemed to have been mailed late. The term postmark means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action

as having been supplied and affixed on the date of mailing by employees of the U. S. Postal Service. Therefore, offerors should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper; (b) the time of receipt at the Government installation is the time-date stamp of such installation on the proposal wrapper or other documentary evidence of receipt maintained by the installation.

Proposals may be withdrawn by written notice or a telegram received at any time prior to award. Proposals may also be withdrawn in person by an offeror or his authorized representative, provided his identity is made known and he signs a receipt for the proposal. (Note: the term telegram includes mailgrams.)

Any modification or withdrawal of a proposal is subject to the same conditions outlined above. Any modification may not make the proposal longer than 25 pages (excluding Company Commercialization Report). Notwithstanding the above, a late modification of an otherwise successful proposal which makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

6.3 Notification of Proposal Receipt

Proposers desiring notification of receipt of their proposal must complete and include a self-addressed stamped envelope and a copy of the notification form (Reference A) in the back of this brochure. If multiple proposals are submitted, a separate form and envelope is required for each. Notification of receipt of a proposal by the Government does not by itself constitute a determination that the proposal was received on time or not. The determination of timeliness is solely governed by the criteria set forth in Section 6.2.

6.4 Information on Proposal Status

Evaluation of proposals and award of contracts will be expedited, but no information on proposal status will be available until the final selection is made. However, contracting officers may contact any and all qualified proposers prior to contract award.

6.5 Debriefing of Unsuccessful Offerors

An unsuccessful offeror that submits a written request for a debriefing within 30 days of being notified that its proposal was not selected for award will be provided a debriefing. The written request should be sent to the DoD organization that provided such notification to the offeror. Be advised that an offeror that fails to submit a timely request is not entitled to a debriefing, although untimely debriefing requests may be accommodated at the government's

discretion.

6.6 Correspondence Relating to Proposals

All correspondence relating to proposals should cite the SBIR solicitation number and specific topic number and should be addressed to the DoD Component whose address is associated with the specific topic number.

7.0 SCIENTIFIC AND TECHNICAL INFORMATION ASSISTANCE

7.1 DoD Technical Information Services Available

The Defense Technical Information Center (DTIC) provides information services to assist SBIR participants in proposal preparation, bid decisions, product development, marketing and networking. The following services are available at no cost to the SBIR user.

1. **Technical Information Packages (TIPs)**, bibliographic listings of related DoD-funded work are prepared for the majority of SBIR topics. Request TIPs in hard copy by mailing in Reference B at the back of this solicitation, or by telephone, fax or e-mail. Online TIPs (OLTIPS) are available on the DTIC SBIR web site (<http://www.dtic.mil/dtic/sbir>).

2. **Public STINET**, DTIC's online technical database, is on the web site. SBIR participants are encouraged to search the database for documents in their areas of interest.

3. **Full Text Documents** are also on the web site, including a large selection of SBIR related technical reports.

4. **ECAB**, an e-mail document alert service available to SBIR/STTR participants, is a listing of new DTIC accessions that match the recipient's personal interest profile, sent bimonthly.

5. **Free Reports**: A firm may receive a total of ten hard copy technical reports at no cost from DTIC during a solicitation period. Additional reports, custom bibliographies, and services requested during non-solicitation periods may be charged to a credit card or deposit account.

6. **SITIS**, providing answers to specific technical questions concerning DoD topic descriptions, is also on the web site. See the description of SITIS in Section 1.5.c.

DTIC is a major component of the DoD Scientific and Technical Information Program, managing the technical information resulting from DoD-funded research and development. DTIC also manages and provides access to specialized information services and subject matter expertise.

MATRIS, a DTIC component, is the focal point for information on manpower, training systems, human performance, and human factors (<http://dticam.dtic.mil>). The DTIC-managed Centers for Analysis of Scientific and Technical Information (the IACs) are the DoD centers of expertise concerned with engineering, technical and scientific documents and databases worldwide (<http://www.dtic.mil/iac/>).

Call or visit (by prearrangement) DTIC at the location most convenient to you. Written communications should be made to the Ft. Belvoir address.

ATTN: DTIC-SBIR
Defense Technical Information Center
8725 John J Kingman Road, Suite 0944
Ft. Belvoir, VA 22060-6218
Ph: (800) 363-7247
Fax: (703) 767-8228
Email: sbir@dtic.mil
www: <http://www.dtic.mil/dtic/sbir>

DTIC Northeastern Regional Office
Building 1103
5 Wright Street
Hanscom AFB, MA 01731-3012
Ph: (781) 377-2413
Fax: (781) 377-5627
Email: boston@dtic.mil

DTIC Southwestern Regional Office
AFRL-PSO/TL/STIC
3550 Aberdeen Ave, SE
Kirtland AFB, NM 87117-5776
Ph: (505) 846-6797
Fax: (505) 846-6799
Email: albuq@dtic.mil

DTIC Midwestern Regional Office
2690 C Street, Suite 4
Wright-Patterson AFB, OH 45433
Ph: (937) 255-7905

Fax: (937) 676-7002
Email: dayton@dtic.mil

DTIC Western Regional Office
222 N. Sepulveda Blvd., Suite 906
El Segundo, CA 90245-4320
Ph: (310) 335-4170
Fax: (310) 335-3663
Email: losangel@dtic.mil

7.2 Other Technical Information Assistance Sources

Other sources provide technology search and/or document services and can be contacted directly for service and cost information. These include:

National Technical Information Services
5285 Port Royal Road
Springfield, VA 22161
Ph: (703) 605-6000 or (800) 553-6847
Fax: (703) 321-8547
Email: infntis@fedworld.gov
www: www.ntis.gov

University of Southern California
Office of Patents and Copyright Administration
3716 South Hope Street, Suite 313
Los Angeles, CA 90007-4344
Ph: (213) 743-2282
Fax: (213) 744-1832
www: www.usc.edu/deptPatents_Copyrights

Center for Technology Commercialization
1400 Computer Drive
Westborough, MA 01581-5043
Ph: (508) 870-0042
Fax: (508) 366-0101
www: www.ctc.org

Great Lakes Technology Transfer Center
Battelle
25000 Great Northern Corporate Center, Suite 260
Cleveland, OH 44070
Ph: (216) 734-0094
Fax: (216) 734-0686
www: www.battelle.org/glitec/

Midcontinent Technology Transfer Center
Texas Engineering Experiment Station
The Texas A&M University System
301 Tarrow, Suite 119
College Station, TX 77840-7896
Ph: (409) 845-8762
Fax: (409) 845-3559
www: www.tedd.org

Mid-Atlantic Technology Applications Center
University of Pittsburgh
3200 Forbes Avenue
Pittsburgh, PA 15260
Ph: (412) 383-2500
Fax: (412) 383-2595
www: www.mtac.pitt.edu

Southern Technology Application Center
University of Florida, College of Engineering
Box 24, 13709 Progress Boulevard
Alachua, FL 32615
Ph: (904) 462-3913
Ph: (800) 225-0308 (outside FL)
Fax: (904) 462-3898
www: www.state.fl.us/stac/

Federal Information Exchange, Inc.
555 Quince Orchard Road, Suite 360
Gaithersburg, MD 20878
Ph: (301) 975-0103
Fax: (301) 975-0109
www: www.rams-fie.com

7.3 DoD Counseling Assistance Available

Small business firms interested in participating in the SBIR Program may seek general administrative guidance from small and disadvantaged business utilization specialists located in various Defense Contract Management activities throughout the continental United States. These specialists are available to discuss general administrative requirements to facilitate the submission of proposals and ease the entry of the small high technology business into the Department of Defense marketplace. The small and disadvantaged business utilization specialists are expressly prohibited from taking any action which would give an offeror an unfair advantage over others, such as discussing or explaining the technical requirements of the solicitation, writing or discussing technical or cost proposals, estimating cost or any other actions which are the offerors responsibility as outlined in this solicitation. (See Reference C at the end of this solicitation for a complete listing, with telephone numbers, of Small and Disadvantaged Business Utilization Specialists assigned to these activities.)

7.4 State Assistance Available

Many states have established programs to provide services to those small firms and individuals wishing to participate in the Federal SBIR Program. These services vary from state to state, but may include:

- Information and technical assistance;
- Matching funds to SBIR recipients;
- Assistance in obtaining Phase III funding.

Contact your State Government Office of Economic Development for further information.

8.0 TECHNICAL TOPICS

Section 8 contains detailed topic descriptions outlining the technical areas in which DoD Components request proposals for innovative R&D from small businesses. Topics for each participating DoD Component are listed and numbered separately. Each DoD Component Topic Section contains topic descriptions, addresses of organizations to which proposals are to be submitted, and special instructions for preparing and submitting proposals to organizations within the Component. Read and follow these instructions carefully to help avoid administrative rejection of your proposal.

<u>Component Topic Sections</u>	<u>Pages</u>
Army.....	ARMY 1-142
Navy.....	NAVY 1-40
DARPA.....	DARPA 1-22
NIMA.....	NIMA 1-3
OSD.....	OSD 1-21

Appendices A, B, C, D and E follow the Component Topic Sections. Appendix A is a Proposal Cover Sheet, Appendix B is a Project Summary form, Appendix C is an outline for the Cost Proposal, Appendix D is the Fast Track Application Form, and Appendix E is the Company Commercialization Report. A completed copy of Appendix A, Appendix B, and Appendix E, as well as a completed Cost Proposal, must be included with each proposal submitted.

Many of the topics in Section 8 contain references to technical literature or military standards, which may be accessed as follows:

- ! References with "AD" numbers are available from DTIC, by calling 800/DoD-SBIR or sending an e-mail message to sbir@dtic.dla.mil
- ! References with "MIL-STD" numbers are available from the DoD Index of Specifications and Standards (DODISS) at Internet address <http://www.dtic.mil/stinet/htgi/dodiss>
- ! Other references can be found in your local library or at locations mentioned in the reference.