

PROGRAM SOLICITATION

Number 2000

Small Business Technology Transfer (STTR) Program

IMPORTANT

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

If you have questions about the Defense Department's STTR 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
STTR Program Office
Washington, DC 20301

| | |
|-------------------------|---|
| January 4, 2000: | Solicitation issued for public release |
| March 1, 2000: | DoD begins accepting proposals |
| April 12, 2000: | Deadline for receipt of proposals at the DoD Components by 3:00 p.m. local time |

IMPORTANT NEW INFORMATION ABOUT THE DOD STTR 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@teltech.com
2. **The DoD SBIR/STTR Web Site** (<http://www.acq.osd.mil/sadbu/sbir>) offers electronic access to many important resources for STTR participants, such as the initial public release of each STTR solicitation, sample STTR proposals, model STTR contracts, links to the Component STTR programs within DoD, answers to commonly-asked questions about STTR contracting, descriptive data on the STTR program, and the latest program updates.
3. **Starting with this solicitation, your STTR Proposal Cover Sheet (formerly, "Appendix A and B") and Company Commercialization Report must be submitted electronically through the Web Site www.dodsbir.net/submission**, as described in Sections 3.4.b and 3.4.n beginning March 1, 2000.
4. **DoD has adopted commercialization of SBIR/STTR technology (in military and/or private sector markets) as a critical measure of performance** for both the DoD STTR program and the companies that participate in the program. This new policy is reflected in Sections 3.4h and 3.6 of this solicitation (Commercialization Strategy); Section 3.4n (Company Commercialization Report on Prior SBIR Awards); Section 4.4 (Assessing Commercial Potential of Proposals); and Section 5.4 (Commercialization Report Updates).
5. **Under DoD's "Fast Track" policy (section 4.5), STTR projects that attract some matching cash from an outside investor for the Phase II effort have a much higher chance of Phase II award -- see www.acq.osd.mil/sadbu/sbir/fsctrack.html#results**. Fast Track projects also receive expedited processing and interim funding between Phases I and II.
6. **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 January 4, when this solicitation was publicly released, and March 1, when DoD begins accepting proposals. At other times, you may submit written questions as described in Section 1.5c.
7. **An STTR 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.
8. **A number of the Army, Navy, and Air Force topics are supported by a DoD acquisition program (e.g., New Attack Submarine, Abrams Tank),** as noted in the text of the topic. These acquisition programs are potentially important end customers for innovative new products resulting from SBIR projects. Information on how to contact these programs is posted on the DoD SBIR/STTR Web Site at www.acq.osd.mil/sadbu/sbir/acqprog/liaisons.htm.

TABLE OF CONTENTS

| | Page |
|---|-------|
| 1.0 PROGRAM DESCRIPTION | 1-3 |
| 1.1 Introduction | 1 |
| 1.2 Three Phase Program..... | 1 |
| 1.3 Proposers Eligibility and Limitation..... | 1 |
| 1.4 Conflicts of Interest | 2 |
| 1.5 Questions about STTR and Solicitation Topics..... | 2 |
| 1.6 Requests for Copies of DoD STTR Solicitation | 3 |
| 1.7 SBIR/STTR Conferences and Outreach | 3 |
| 2.0 DEFINITIONS | 4 |
| 2.1 Research or Research and Development | 4 |
| 2.2 Cooperative Research and Development | 4 |
| 2.3 Small Business Concern | 4 |
| 2.4 Research Institution | 4 |
| 2.5 Socially and Economically Disadvantaged Small Business | 4 |
| 2.6 Women-Owned Small Business | 4 |
| 2.7 Funding Agreement | 4 |
| 2.8 Subcontract | 4 |
| 2.9 Commercialization | 4 |
| 2.10 HBCU/MI..... | 4 |
| 3.0 PROPOSAL PREPARATION INSTRUCTIONS AND REQUIREMENTS | 5-8 |
| 3.1 Proposal Requirements..... | 5 |
| 3.2 Proprietary Information | 5 |
| 3.3 Limitations on Length of Proposal | 5 |
| 3.4 Phase I Proposal Format..... | 5 |
| 3.5 Bindings | 8 |
| 3.6 Phase II Proposal..... | 8 |
| 3.7 False Statements | 8 |
| 4.0 METHOD OF SELECTION AND EVALUATION CRITERIA | 9-12 |
| 4.1 Introduction | 9 |
| 4.2 Evaluation Criteria - Phase I | 9 |
| 4.3 Evaluation Criteria - Phase II | 9 |
| 4.4 Assessing Commercial Potential of Proposals..... | 10 |
| 4.5 STTR Fast Track | 10 |
| 5.0 CONTRACTUAL CONSIDERATION..... | 13-16 |
| 5.1 Awards (Phase I) | 13 |
| 5.2 Awards (Phase II)..... | 13 |
| 5.3 Phase I Report | 13 |
| 5.4 Company Commercialization Report Updates | 14 |
| 5.5 Payment Schedule | 14 |
| 5.6 Markings of Proprietary or Classified Proposal Information..... | 14 |
| 5.7 Copyrights | 15 |
| 5.8 Patents | 15 |
| 5.9 Technical Data Rights | 15 |
| 5.10 Cost Sharing | 15 |
| 5.11 Joint Ventures or Limited Partnerships | 15 |
| 5.12 Research and Analytical Work | 15 |
| 5.13 Contractor Commitments | 15 |
| 5.14 Contractor Registration | 16 |

| | | |
|------|--|------------|
| 5.15 | Additional Information..... | 16 |
| 6.0 | SUBMISSION OF PROPOSALS | 17-18 |
| 6.1 | Address..... | 17 |
| 6.2 | Deadline of Proposals..... | 17 |
| 6.3 | Notification of Proposal Receipt | 17 |
| 6.4 | Information on Proposal Status | 18 |
| 6.5 | Debriefing of Unsuccessful Offerors | 18 |
| 6.6 | Correspondence Relating to Proposals..... | 18 |
| 7.0 | SCIENTIFIC AND TECHNICAL INFORMATION ASSISTANCE | 19-20 |
| 7.1 | DoD Technical Information Services Available..... | 19 |
| 7.2 | DoD Counseling Assistance Available..... | 19 |
| 7.3 | State Assistance Available..... | 20 |
| 8.0 | TECHNICAL TOPICS..... | 21 |
| | Department of the Army..... | ARMY 1-9 |
| | Department of the Navy | NAVY 1-14 |
| | Department of the Air Force..... | AF 1-16 |
| | Defense Advanced Research Projects Agency | DARPA 1-11 |
| | Ballistic Missile Defense Organization | BMDO 1-11 |
| 9.0 | SUBMISSION FORMS AND CERTIFICATIONS | |
| | Reference A - Cost Proposal Outline | REF A |
| | Reference B - Fast Track Application Form..... | REF B |
| | Reference C - Model Agreement for the Allocation of Rights | REF C |
| | Reference D - Proposal Receipt Notification Form..... | REF D |
| | Reference E - Directory of Small Business Specialists..... | REF E |
| | Reference F - SF 298 Report Documentation Page..... | REF F |
| | Reference G - DoD Fast Track Guidance | REF G |
| | Reference H - List of Eligible FFRDCs..... | REF H |
| | Reference I - DoD SBIR/STTR Mailing List Form..... | REF I |

DOD PROGRAM SOLICITATION FOR SMALL BUSINESS TECHNOLOGY TRANSFER

1.0 PROGRAM DESCRIPTION

1.1 Introduction

The Army, Navy, Air Force, Defense Advanced Research Projects Agency (DARPA), and Ballistic Missile Defense Organization (BMDO), hereafter referred to as DoD Components, invite small business firms and research institutions to jointly submit proposals under this solicitation for the Small Business Technology Transfer (STTR) program. The STTR Program is a pilot program under which awards are made to small business concerns for cooperative research and development, conducted jointly by a small business and a research institution, through a uniform process having three phases. STTR, although modeled substantially on the Small Business Innovation Research (SBIR) Program, is a separate program and is separately financed. Subject to availability of funds, DoD Components will support high quality cooperative research and development proposals of innovative concepts to solve the listed defense-related scientific or engineering problems, especially those concepts that also have high potential for commercialization in the private sector.

The STTR Program is designed to provide a strong incentive for small companies and researchers at research institutions, i.e., non-profit research institutions, contractor-operated federally funded research and development centers (FFRDCs), and universities, to work together as a team to move ideas from the research institution to the marketplace, to foster high-tech economic development, and to address the technological needs of our armed forces. (See Reference H)

Partnerships between small businesses and Historically Black Colleges or Universities (HBCUs) or Minority Institutions (MIs) are encouraged, although no special preference will be given to STTR proposals from such offerors.

The Federal STTR Program is mandated by Public Law 102-564. The basic design of the DoD STTR Program is in accordance with the Small Business Administration (SBA) STTR Policy Directive of 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 DoD and the private sector.

1.2 Three Phase Program

This program solicitation is issued pursuant to the Small Business Research and Development Enhancement Act of 1992, PL 102-564. Phase I is to determine the scientific, technical and commercial merit and feasibility of the proposed cooperative effort and the quality of performance of the small business concern with a relatively small investment before consideration of future DoD support in Phase II. Several different proposed solutions to a given topic may be funded. Proposals will be evaluated on a competitive basis giving primary consideration to the scientific and technical merit of the proposal along with its potential for commercialization. Phase I awards are typically \$60,000 to \$100,000 in size over a period not to exceed one year.

Subsequent Phase II awards will be made to firms on the basis of results of their Phase I effort and the scientific, technical merit and commercial potential of their Phase II proposal. Phase II awards are typically \$400,000 to \$500,000 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 product or process.

Under Phase III, the small business is expected to use non-federal capital to pursue private sector applications of the research or development. Also, under Phase III, federal agencies may award non-STTR funded follow-on contracts for products or processes which meet the mission needs of those agencies.

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

1.3 Proposer Eligibility and Limitation

Each proposer must qualify as a small business for research or research and development purposes as defined in Section 2.3 and certify to this on the Cover Sheet of the proposal. In addition, a minimum of 40 percent of each STTR project must be carried out by the small business concern and a minimum of 30 percent of the effort performed by the research institution, as defined in Section 2.4. The percent of work is usually measured by both direct and indirect costs; however, proposers should verify how it will be measured with their DoD contracting officer during contract negotiations.

A small business concern must negotiate a written agreement between the small business and the research institution allocating intellectual property rights and rights to carry out follow-on research, development, or commercialization (see Reference C).

At the time of award of a Phase I or Phase II contract, the small business concern must have at least one employee in a management position whose primary employment is with the small business and who is not also employed by the research institution. Primary employment means that more than one half of the employee's time is spent with the small business.

For both Phase I and Phase II, the research or research and development work must be performed by the small business concern and research institution 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 for the small business portion, 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 2.3.

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 federal law. Such proposers should contact the cognizant Ethics Counselor from the employees' Government agency for further guidance.

1.5 Questions about STTR 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:

Phone: 800-382-4634 (8AM to 8PM EST)
Fax: 800-462-4128
Email: SBIRHELP@teltech.com

The DoD SBIR/STTR Home Page offers electronic access to SBIR and STTR solicitations, answers to commonly asked questions, sample proposals, model contracts, abstracts of ongoing SBIR and STTR projects, the latest updates on the SBIR and STTR programs, 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 January 4, 2000, 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 March 1, 2000, giving proposers an opportunity to ask technical questions about specific solicitation topics by telephone.

Once DoD begins accepting proposals on March 1, 2000, telephone questions will no longer be accepted, but proposers may submit written questions through the SBIR/STTR 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 (linked from 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
NAS North Island, Box 357011
San Diego, CA 92135-7011
Phone: (619) 545-7529
Fax: (619) 545-0019
E-mail: sbir@dticam.dtic.mil
WWW: <http://dticam.dtic.mil/sttr/>

The SITIS service for this solicitation opens on or around January 20, 2000 and closes to new questions on March 31, 2000. SITIS will post all questions and answers on the Internet (see Solicitations on the DoD SBIR/STTR Home Page) from January 20, 2000 through April 12, 2000. (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 question submission.

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 STTR Solicitation

To remain on the DoD Mailing list for the SBIR and STTR solicitations, send in the Mailing List form (Reference I). 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 Home Page at <http://www.acq.osd.mil/sadbu/sbir>.

1.7 SBIR/STTR Conferences and Outreach

The DoD holds two National SBIR/STTR Conferences a year and participates in many state-organized conferences for small business. For information on these events, see our DoD SBIR/STTR 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. Systematic study and experimentation directed toward greater knowledge or understanding of the subject studied or toward applying new knowledge to meet a recognized need.

2.2 Cooperative Research and Development. For the purposes of the STTR Program this means research and development conducted jointly by a small business concern and a research institution in which not less than 40 percent of the work is performed by the small business concern, and not less than 30 percent of the work is performed by the research institution. The percent of work is usually measured by both direct and indirect costs; however, proposers should verify how it will be measured with their DoD contracting officer during contract negotiations.

2.3 Small Business Concern. 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 121.106. Business concerns include, but are not limited to, any individual, partnership, corporation, joint venture, association or cooperative.

2.4 Research Institution. Any organization that is:

a. A university.

b. A nonprofit institution as defined in section 4(5) of the Stevenson-Wydler Technology Innovation Act of 1980.

c. A contractor-operated federally funded research and development center, as identified by the National Science Foundation in accordance with the government-wide Federal Acquisition Regulation issued in accordance with section 35(c)(1) of the Office of Federal Procurement

Policy Act. (See Ref. H for a list of eligible FFRDCs.)

2.5 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 disadvantaged.

2.6 Women-Owned Small Business. A small business concern 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.

2.7 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 STTR awards.*

2.8 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.

2.9 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.

2.10 HBCU/MI. A list of the Historically Black Colleges and Universities (HBCU) and Minority Institutions (MI) is available through DTIC at 800-363-7247.

3.0 PROPOSAL PREPARATION INSTRUCTIONS AND REQUIREMENTS

3.1 Proposal Requirements

A proposal to any DoD Component under the STTR 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, technical or commercial 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. 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 and research institution team have the capability to implement the technical approach, i.e. have or can obtain people and equipment suitable to the task.

It should be recognized that while the STTR Program requires a small business and a research institution to undertake a project cooperatively, the Federal contract is with the small business. The small business, and not the research institution, is to provide satisfactory evidence that it will exercise management direction and control of the performance of the STTR funding agreement. Regardless of the proportion of the work or funding of each of the performers under the contract, the small business is to be primary contractor with overall responsibility for its performance.

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

- ? Read and follow all instructions contained in this solicitation.
- ? Use the technical information services from DTIC and other information assistance organizations (Section 7.1 - 7.3).
- ? Mark proprietary information as instructed in Section 5.6.
- ? Limit your proposal to 25 pages (excluding company commercialization report).
- ? Prepare an agreement between the small business and research institution, to be finalized no later than 15 days after the small business receives notification that it has been selected for a Phase I award (see Section 3.4.o and Reference A).
- ? Use a type size no smaller than 12 pitch or 11 point.
- ? Register your firm on the DoD Electronic Submission Web Site (<http://www.dodsbir.net/submission>) and, as instructed on the Web Site, prepare a Proposal Cover Sheet and Company Commercialization Report to be included in your proposal.

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, (no type smaller than 11 point or 12 pitch on standard 8 1/2" X 11" paper with one (1) inch margins, 6 lines per inch), *including Proposal Cover Sheet, Project Summary, 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) will not be considered for review or award.

3.4 Phase I Proposal Format

a. Page numbering. Number all pages of your proposal consecutively.

b. Proposal Cover Sheet Register your firm on the password-protected DoD Electronic Submission Web Site (<http://www.dodsbir.net/submission>). As instructed on the Web Site, prepare a Proposal Cover Sheet, including a brief technical abstract of the proposed R&D project and a discussion of anticipated benefits and potential commercial applications. If your proposal is selected for award, the technical abstract and discussion of anticipated benefits will be publicly released on the Internet; therefore, do not include proprietary or classified information in these sections. Print out a hard copy of the Proposal Cover Sheet from the Web Site and include it, with the appropriate signatures, as the first two pages of your proposal. Also include a photocopy of the signed Proposal Cover Sheet in the additional copies of the proposal that you submit per Section 6.0 of this solicitation. If your firm does not yet have access to the Internet, contact the DoD SBIR/STTR Help Desk (800/382-4634) for assistance.

Through the signature of the Corporate Official of the small business concern and the signature of the appropriate official of the research institution on the Proposal Cover Sheet, the small business concern AND the research institution certify jointly that:

- (1) The proposing firm meets the definition of small business concern found in section 2.3, the proposing institution meets the definition of research institution found in section 2.4, and the proposed STTR project meets the definition of cooperative research and development as defined in section 2.2, and
- (2) Regardless of the proportion of the proposed project to be performed by each party, the small business concern will be the primary party that will exercise management direction and control of the performance of the STTR award.
- (3) At the time of award, the small business concern will have at least one employee in a management position whose primary employment is with the small business and who is not also employed by the research institution.

If the research institution is a contractor-operated Federally funded research and development center, the appropriate official signing for the contractor-operated Federally funded research and development center certifies additionally that it:

- (4) Is free from organizational conflicts of interests relative to the STTR program;
- (5) Did not use privileged information gained through work performed for an STTR agency or private access to STTR agency personnel in the development of this STTR proposal; and
- (6) Used outside peer review as appropriate, to evaluate the proposed project and its performance therein.

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. 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 STTR research into a product or non-R&D service with widespread commercial use in private sector and/or military markets. Provide specific information on the market need the technology will address and the size of the market. Also include a schedule showing the quantitative commercialization results from this SBIR project that your company expects to achieve and when (i.e., amount of additional investment, sales revenue, etc. – see items a through g in Section 5.4).

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 Reference A) 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. Subcontractors/Consultants. All subcontractors, including the research institution partner, must be identified and described according to the guidelines in Reference A. The STTR program may only make awards to small businesses; therefore, the research institution must have a subcontracting arrangement with the small business. More than one subcontractor is allowed; however, the small business must perform at least 40% of the effort and the research institution listed on Proposal Cover Sheet must perform at least 30% of the work. Subcontractor costs must be detailed at the same level as prime contractor costs in accordance with Reference A (in regards to labor, travel, equipment, etc.). If consultants are involved, such

involvement should be described in detail and identified in Reference A.

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 the Proposal Cover Sheet 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 STTR 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 Reference A for the Phase I effort only. Some items of Reference A 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 proposal.

When a proposer is selected for award, the proposer should be prepared to submit further documentation to its DoD contracting officer to substantiate costs (e.g., a brief explanation of cost estimates for equipment, materials, and consultants or subcontractors).

n. Company Commercialization Report on Prior STTR and SBIR awards. If your firm is submitting a Phase I or Phase II proposal, it is required to prepare a Company Commercialization Report through the password-protected DoD Electronic Submission Web Site (<http://www.dodsbir.net/submission>) As instructed on the Web Site, list in the Report the quantitative commercialization results of your firm's prior Phase II projects, including the items listed in section 5.4a through g of this solicitation (sales revenue, additional investment, etc.). The Web Site will then compare these results to the historical averages for the DoD SBIR/STTR Program. Once your firm has completed the Report on the Web Site, print out a hard copy of the Report, sign and date it, and attach it to the back of your proposal.

Your firm may also, at its option, attach to the back of the Report additional, explanatory material (no more than five pages) relating to the firm's record of commercializing its prior SBIR or STTR projects, such as: commercialization successes (in government and/or private sector markets) that are not fully captured in the quantitative results (e.g. commercialization resulting from your firm's prior Phase I projects); any mitigating factors that could account for low commercialization; and recent changes in the firm's organization or personnel designed to increase the firm's commercialization success. The Company Commercialization Report and additional explanatory material (if any) will not be counted toward the 25-page limit for Phase I proposals.

A Report showing that a firm has received no prior Phase II awards will not affect the firm's ability to obtain an STTR award. Firms that do not yet have access to the Internet should contact the DoD SBIR/STTR Help Desk (800/382-4634) for assistance.

o. Agreement between the Small Business and Research Institution. The small business must negotiate a written agreement with the research institution allocating intellectual property rights and rights, if any, to carry out follow-on research, development, or commercialization. The agreement must be finalized and signed by both parties no later than 15 days after the small business receives notification that it has been selected for a Phase I STTR award. The small business must submit this agreement to the awarding agency on request and certify in all proposals that the agreement is satisfactory to the small business. The agreement should, as a minimum, state:

- (1) Specifically the degree of responsibility and ownership of any product, process, or other invention or innovation resulting from the cooperative research. The degree of responsibility shall include responsibility for expenses and liability, and the degree of ownership shall also include the specific rights to revenues and profits.
- (2) Which party may obtain U.S. or foreign patents or otherwise protect any inventions resulting from the cooperative research.
- (3) Which party has the right to any continuation of research including non-STTR follow-on awards.

See Reference C for a guideline or model for such an agreement.

The Federal government will not normally be party to any agreement between the small business concern and the research institution. Nothing in the agreement is to conflict with any provisions setting forth the respective rights of the United States and the small business with respect to intellectual property rights and with respect to any right to carry out follow-on research. All agreements between the small business and the research institution cooperating in the STTR projects, or any business plans reflecting agreements and responsibilities between the parties during the performance of Phase I or II, or for the commercialization of the resulting technology, shall reflect the controlling position of the small business.

3.5 Bindings

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

3.6 Phase II Proposal

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 proposal must contain a Proposal Cover Sheet and a Company Commercialization Report (see section 3.4 b and n). 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 the 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?

The commercialization strategy must also include a schedule showing the quantitative commercialization results from the Phase II project that your company expects to report in its Company Commercialization Report Updates one year after the start of Phase II, at the completion of Phase II, and after the completion of Phase II (i.e., amount of additional investment, sales revenue, etc. – see items a through g in section 5.4).

Additional instructions regarding Phase II proposal preparation and submission will be provided or made available 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 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 will be assessed using the following criteria:

- a. The proposer's commercialization strategy (see Sections 3.4h and 3.6) and, as discussed in that strategy: (1) any commitments of additional investment in the technology during Phase II from the private sector, DoD prime contractors, non-SBIR/STTR DoD programs, or other sources, and (2) any Phase III follow-on funding commitments; and
- b. The proposer's record of commercializing its prior SBIR and STTR projects, as shown in its Company Commercialization Report (see Section 3.4n). If the “Commercialization Achievement Index” shown on the first page of the Report is at the 5th percentile or

below, the proposer will receive no more than half of the evaluation points available under evaluation criterion c in Sections 4.2 and 4.3 (“potential for commercialization”), unless the SBIR program manager for the DoD Component receiving the proposal (Army, Navy, Air Force, etc.) recommends, in writing, that an exception be made for that proposer, and the contracting officer approves the exception.

A Company Commercialization Report showing that the proposing firm has no prior Phase II awards will not affect the firm’s ability to win an award. Such a firm’s proposal will be evaluated for commercial potential based on its commercialization strategy in item a, above.

4.5 STTR Fast Track

a. In General. The DoD STTR program has implemented a streamlined Fast Track process for STTR projects that attract matching cash from an outside investor for the Phase II STTR effort (as well as for the interim effort between Phases I and II). The purpose is to focus STTR 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 G), 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 STTR 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.

All DoD Components administer the Fast Track according to the procedures in this section, except for BMDO. BMDO administers slightly different procedures that have been approved by the Under Secretary of Defense for Acquisition and Technology – see the BMDO proposal instructions in Section 8 of this solicitation.

b. How To Qualify for the STTR Fast Track. To qualify for the STTR Fast Track, a company must submit a Fast Track application at least 60 days prior to completion of its Phase I project, 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 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 Reference B. On the application form, the company and its outside investor must:
 - (a) State that the outside investor will match both interim and Phase II STTR funding, in cash, contingent on the company’s selection for Phase II award, as described on the form at Reference B. The matching rates needed to qualify for the Fast Track are as follows:
 - For companies that have never received a Phase II SBIR or STTR award from DoD or any other federal agency, the minimum matching rate is 25 cents for every STTR dollar. (For Example, if such a company receives interim and Phase II STTR funding that totals \$500,000, it must obtain matching funds from the investor of \$125,000.)
 - For all other companies, the minimum matching rate is 1 dollar for every STTR dollar. (For example, if such a company receives interim and Phase II STTR funding that totals \$500,000, it must obtain matching funds from the investor of \$500,000.)
 - (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 G).
- (2) A letter from the outside investor to the company, containing:
 - (a) A commitment to match both interim and Phase II STTR funding, in cash, contingent on the company’s selection for Phase II award, as discussed on the form at Reference B.
 - (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 STTR 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 STTR technology, and of the ability of the company to bring this technology to market.
- (3) A concise statement of work for the interim STTR 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 STTR 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 no later than 30 days prior to completion 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).
- (2) Must submit its Phase I final report by the deadline specified in its Phase I contract, but not later than 30 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 STTR 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 STTR 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 STTR 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 STTR funding of \$30,000 to \$50,000, commencing approximately at the end of Phase I. Note: Consistent with DoD policy, the vast majority of projects that qualify for the Fast Track should receive interim STTR 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 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 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.

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 October 12, 2000. The name of those firms selected for awards will be announced. *The DoD Components anticipate making 50 Phase I awards from this solicitation.*

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 one year (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. The firm fixed price or cost plus fixed fee type contract will be used for all Phase II projects. *Note: The firm fixed price, level-of-effort contract is the preferred type for Phase II (see sample on our DoD SBIR/STTR Web Site at <http://www.acq.osd.mil/sadbu/sbir/contract.html>), except in the Air Force, where cost plus fixed fee is the preferred type.*

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 \$500,000 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 SF 298 is provided in Reference F of this solicitation.) 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 STTR contract for topic [insert solicitation topic number]". The abstract must identify the purpose of the work and briefly describe the work carried out, the findings 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 "STTR 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, at the same time, submit ONE ADDITIONAL COPY of each report directly to DTIC (unless instructed otherwise by the sponsoring DoD activity in the Phase I contract):

ATTN: DTIC-OCA
Defense Technical Information Center
8725 John J Kingman Road, Suite 0944
Ft. Belvoir, VA 22060-6218.

If the report is classified, the sponsoring DoD activity will provide special submission instructions. *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, classified and unclassified, developed under STTR contract, per DoD Directive 3200.1* (<http://web7.whs.osd.mil/dodiss/directives/dir2.html>)

5.4 Company Commercialization Report Updates

If, after completion of Phase I, the contractor is awarded a Phase II contract, the contractor shall be required to electronically update its Company Commercialization Report (discussed in Section 3.4n) on a periodic basis, to report the following commercialization results of this Phase II project:

- a. Sales revenue from new products and non-R&D services resulting from the Phase II technology;
- b. Additional investment from sources other than the federal SBIR/STTR program in activities that further the development and/or commercialization of the Phase II technology;
- c. The portion of additional investment representing clear and verifiable investment in the future commercialization of the technology (i.e., "hard investment");
- d. Whether the Phase II technology has been used in a fielded DoD system or acquisition program and, if so, which system or program;
- e. The number of patents resulting from the contractor's participation in the SBIR/STTR program;
- f. Growth in number of firm employees; and
- g. Whether the firm has completed an initial public offering of stock (IPO) resulting, in part, from the Phase II project.

These updates on the project will be required one year after the start of Phase II, at the completion of Phase II, and subsequently when the contractor submits a new SBIR or STTR proposal to DoD. Firms that do not submit a new proposal to DoD will be asked to provide updates on an annual basis after the completion of Phase II.

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 the Proposal Cover Sheet. 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 Proposal Cover Sheet (Section 3.4b) is completed:

"For any purpose other than to evaluate the proposal, this data referenced below, 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 funding agreement. 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 on the pages of the proposal listed on the line below"

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 Sheet of this proposal."

If all 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 acknowledgement 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 STTR data. During the license period, the government may not release or disclose STTR 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 2.3 of this solicitation.

5.12 Research and Analytical Work

For Phase I and II, a minimum of 40 percent of the research and/or analytical effort must be performed by the proposing firm and a minimum of 30 percent performed by the research institution unless otherwise approved in writing by the contracting officer. The percentage of work is usually measured by both direct and indirect costs; however, proposers 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 STTR funding agreement, purchase only American-made items whenever possible.

5.14 Contractor Registration [NEW]

Before DoD can award a contract to a successful proposer under this solicitation, the proposer must be registered in the DoD Central Contractor Registration database. To register, see <http://www.ccr2000.com/> or call 1-888-227-2423.

5.15 Additional Information

a.General. This Program Solicitation is intended for information purposes and reflects current planning. If there

is any inconsistency between the information contained herein and the terms of any resulting STTR contract, the terms of the contract are controlling.

b. Small Business Data. Before award of an STTR 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 STTR Program is not a substitute for existing unsolicited proposal mechanisms. Unsolicited proposals will not be accepted under the STTR 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: EACH PROPOSAL MUST CONTAIN A COMPLETED PROPOSAL COVER SHEET AND COMPANY COMMERCIALIZATION REPORT (see Section 3.4b and n).

6.1 Address

Each proposal or modification thereof shall be submitted in sealed envelopes or packages addressed to the DoD Component address which is identified for the specific topic in that Component's subsection of Section 8.0 of 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 face 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 3:00 p.m. local time, April 12, 2000. 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 April 5, 2000;

(b) it was sent by mail or hand-carried (including delivery by a commercial carrier) and it is determined by the Government that the late receipt was due primarily to Government mishandling after receipt at the Government installation; or

(c) it was sent by U.S. Postal Service Express Mail Next Day Service-Post Office to Addressee, not later than 5:00 p.m. at the place of mailing on April 10, 2000.

Note: There are no other provisions for late receipt of

proposals under this solicitation.

The only acceptable evidence to establish the date of mailing of a late proposal sent either by registered or certified mail is the U. S. Postal Service postmark on the envelope or wrapper and on the original receipt from the U.S. Postal Service. Both postmarks must show a legible date or the proposal shall be processed as if mailed late. "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 by employees of the U. S. Postal Service on the date of mailing. Therefore, offerors or respondents should request the postal clerk to place a legible hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper. Acceptable evidence to establish the time of receipt at the Government installation includes the time/date stamp of the installation on the proposal wrapper, other documentary evidence of receipt maintained by the installation, or oral testimony or statements of Government personnel. The only acceptable evidence to establish the date of mailing of a late proposal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. Therefore, offerors should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and the envelope or wrapper.

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 D) 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 STTR 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 STTR participants in proposal preparation, bid decisions, product development, marketing and networking. The following services are available at no cost. See the DTIC SBIR/STTR web site (<http://www.dtic.mil/dtic/sbir>) for additional information.

1. **Public STINET**, DTIC's online technical database, is on the web site. STTR participants are encouraged to search the database for documents in their areas of interest.
2. **TRAIL** (<http://www.dtic.mil/trail>) an e-mail document alert service available to SBIR/STTR participants, provides listings biweekly of new DTIC accessions matching the recipient's interest.
3. **Free Reports**: A firm may receive a total of ten hard copy technical reports at no cost from DTIC during an SBIR/STTR solicitation period. Additional reports and services may be charged to a credit card or deposit account.
4. **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 (<http://www.dtic.mil>). 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 pre-arrangement), DTIC at the location most convenient to you. Written communication should be made to the Ft. Belvoir address.

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

ATTN: DTIC-BRNB

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

ATTN: DTIC-BRND
DTIC Midwestern Regional Office
Bldg. 196, Area B
2261 Monahan Way
Wright-Patterson AFB, OH 45433-7022
Ph: (937) 255-7905
Fax: (937) 656-7002
Email: dayton@dtic.mil

ATTN: DTIC-BRNL
DTIC Western Regional Office
Bldg. 80
2420 Vela Way, Suite 1467
El Segundo, CA 90245-4659
Ph: (310) 363-8980
Fax: (310) 363-8972
Email: **Error! Bookmark not defined.**

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

7.2 DoD Counseling Assistance Available

Small business firms interested in participating in the STTR 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 E at the end of this solicitation for a complete listing, with telephone numbers, of Small and

Disadvantaged Business Utilization Specialists assigned to these activities.)

7.3 State Assistance Available

Many states have established programs to provide services to those small firms and individuals wishing to participate in the Federal STTR Program. These services

vary from state to state, but may include:

- Information and technical assistance;
- Matching funds to STTR 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. A number of Army, Navy and Air Force topics either are authored by a DoD acquisition program (e.g., New Attack Submarine, Abrams Tank) or are of significant interest to such a program, as noted in the text of the topic. These acquisition programs are potentially important end customers for innovative new products resulting from SBIR projects. Information on how to contact these programs is posted on the Web Site (<http://www.acq.osd.mil/sadbu/sbir/acqprog/liaisons.htm>).

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 1-9 |
| Navy..... | NAVY 1-14 |
| Air Force..... | AF 1-16 |
| Defense Advanced Research Projects Agency..... | DARPA 1-11 |
| Ballistic Missile Defense Organization..... | BMDO 1-11 |

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.mil
- ? References with "MIL-STD" numbers are available from the Department of Defense Single Stock Point for Military Specifications, Standards and Related Publications 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.