

**DEFENSE LOGISTICS AGENCY (DLA)  
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM  
Proposal Submission Instructions**

All Phase II proposals must be prepared and submitted through the Department of Defense (DoD) SBIR/STTR electronic submission site: <https://sbir.defensebusiness.org>

**I. GENERAL**

Use the following address for information concerning DLA: <http://www.dla.mil/>. DLA HQ J348 Research and Development implements, administers, and manages the DLA SBIR and DLA STTR programs. Direct all related general questions to:

Natalie Seiling, DLA SBIR/STTR Program Manager  
E-mail: [natalie.seiling@dla.mil](mailto:natalie.seiling@dla.mil)  
Phone: 804-279-5120

Use of e-mail is encouraged.

**II. TECHNICAL QUESTIONS**

During the pre-release period (Dec. 11, 2015 - Jan. 10, 2016), contact the topic authors listed for each topic in the solicitation, or post your technical questions using the online SITIS Q&A System at <https://sbir.defensebusiness.org>.

To obtain answers to technical questions during the formal solicitation period (Jan. 11 – Feb. 12, 2016), all questions must be posted in the SITIS Q&A System only at <https://sbir.defensebusiness.org>.

For general inquiries or problems with the electronic submission, contact the DoD Help Desk at **1-800-348-0787** (9:00 am to 6:00 pm ET), or email to [sbirhelp@bytecubed.com](mailto:sbirhelp@bytecubed.com).

DLA's projected funding levels support between one (1) and four (4) Phase I awards and between one (1) and three (3) Phase II awards from each of these topics. DLA reserves the right to limit awards under any topic.

**III. DLA SBIR/STTR PROGRAM PRINCIPLES**

DLA is very committed to these research topic areas, although projected funding levels are extremely limited. Therefore, in order to ensure eligibility of selection, a project must offer exceptional benefits to one or more military services, a partnership with DLA, or another military service, or an OEM, or provide exceptional benefits or partnership with a private entity. As a result, DLA may fund multiple proposals in a topic area, or it may not fund any proposals in a topic area.

DLA seeks to solicit innovative, high-risk research and development proposals from the small business community. All selections shall demonstrate and involve a degree of technical risk where the technical feasibility of the proposed work has not yet been fully established.

DLA prefers market-driven companies, which can move technology into the commercial high volume market. Phase I proposals should demonstrate the feasibility of the proposed technology and the merit of a Phase II, such as a prototype or at least a proof-of-concept demonstration. Future market possibilities and demonstrated commercialization potential strongly influence both Phase I and II selections. Formal

funding commitments, Government in-kind support, and other legal arrangements (public or private), submitted as part of the Phase II proposal, are the best demonstration of commercialization potential.

#### **IV. PHASE I KEY DATES**

16.1 Solicitation (Pre-release)	Dec. 11, 2015– Jan. 10, 2016
16.1 Solicitation (Open)	Jan. 11 – Feb. 17, 2016
Phase I evaluations	Feb. – Mar. 2016
Phase I awards	August 2016

#### **V. SUBMISSION OF DLA SBIR/STTR PROPOSALS**

The DLA SBIR program, in its decision process for Phase I award selections, uses the 16.1 BAA Evaluation Criteria – Phase I from Section 6.0 PHASE I EVALUATION CRITERIA, however with a differing prioritization and additional emphasis on innovation, commercialization potential and dual commercialization pathways (private and public), which DLA considers very important for its’ mission to support all DoD branches with logistics and supplies which have a higher quality, are less expensive, and can be delivered faster. Appropriate consideration of these factors within your Phase I proposal will increase your competitiveness for selection. DLA reserves the right to limit awards under any topic. The DLA lists evaluation criteria in descending order of importance:

- **Technical Sufficiency:** The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution. (DoD 16.1 BAA section 6.0a)
- **Innovation:** DLA evaluates innovation independently from technical sufficiency. The DLA SBIR/STTR programs employ the following concepts and definitions of innovation when making project selection decisions. An invention improves some product, process, or service. Further, an invention transforms into innovation through introduction to the public. A transition path would involve the innovation moving into some sort of commercialization phase (e.g. technology to end-use development, technology to system integration, licensing into various fields of use, legally structured partnering agreements, outside investment, or sales). Although DLA seeks breakthrough technologies and processes, it will consider enabling and incremental technologies that offer the potential for increases in quality or decreases in cost or decreases in lead-time for items related to the relevant topic. Proposed technologies should support existing military systems (or their manufacturing processes) for which DLA is the procuring activity (DLA added this criteria)
- **Commercialization Potential:** The potential for commercial (Government or private sector) application and the benefits expected to accrue from this commercialization (DoD 16.1 BAA section 6.0c). In addition to the above, DLA recommends the offeror provide a meaningful commercialization plan with sufficient strategic and tactical thought to advance the technology along the full development cycle into end-use application or integration. The Phase I plan should be the basis to seek private and public funding commitments along with possible licensing, integration, or commercialization partnerships that have the relevant potential to leverage investment in the technology. The offeror would accomplish this plan in conjunction with the performance of the Phase I technical research, optimally resulting in potential co-investors and co-developers at the time of Phase II proposal submission
- **Qualifications of Key Personnel:** 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 (DoD 16.1 BAA section 6.0b). Furthermore, please include if the team contains marketing expertise and, if not, how that expertise will be brought into the effort?

The offeror must submit the entire proposal (which includes Cover Sheet, Technical Proposal, Cost Proposal, and Company Commercialization Report) electronically via the DoD SBIR/STTR Proposal Submission Site (<https://sbir.defensebusiness.org>); DLA will not accept any proposals submitted via any other medium. Do not send a hardcopy of the proposal. Hand or electronic signature on the proposal is not a requirement. If you experience problems uploading a proposal, call the DoD Help Desk **1-800-348-0787** (9:00 am to 6:00 pm EST).

Notification of Selection and non-selection letters will occur electronically via e-mail.

Proposals not conforming to the terms of this solicitation will not receive further consideration.

## **VI. FOREIGN NATIONALS**

If the offeror proposes to use a foreign national(s) [any person who is NOT a citizen or national of the United States, a lawful permanent resident, or a protected individual as defined by 8 U.S.C. 1324b(a)(3) – refer to section 3.4 of the DoD SBIR Program Solicitation 16.1 for definitions of “lawful permanent resident” and “protected individual” as key personnel, the following information should be provided: country of origin, the type of visa or work permit under which they are performing and an explanation of their anticipated level of involvement on this project. DLA may require additional information during negotiations in order to verify the foreign citizen’s eligibility to participate on a contract issued as part of this solicitation.

## **VII. PHASE I PROPOSAL PAGE LIMIT**

DLA Phase I proposals have a 20-page limit (excluding the Cost Proposal and the Company Commercialization Report). Pages in excess of the 20-page limitation will not receive any consideration for proposal (including attachments, appendices, and references).

## **VIII. OPTION MUST BE INCLUDED AS PART OF PHASE I PROPOSAL**

Phase I contracts are expected to have a period of performance (POP) of roughly six to twelve months and a maximum cost of \$100,000 for the base award. The Phase I Option, which **must** be included as part of the Phase I proposal, covers activities over a period of up to six months and should describe appropriate initial Phase II activities that may lead to the successful demonstration of a product or technology. The Phase I Option proposal must be included within the 20-page limit for the Phase I proposal. DLA may or may not exercise the Phase I Option; however, DLA will make the determination to exercise the option prior to the end of the POP stated in the Phase I contract.

The offeror will submit a firm-fixed-price-level-of-effort-term Phase I cost proposal (\$150,000 maximum) in detail online. Proposers that participate in this solicitation must complete the Phase I Cost Proposal not to exceed the maximum dollar amount of \$100,000 and a Phase I Option Cost Proposal not to exceed the maximum dollar amount of \$50,000. Phase I and Phase I Option costs must be shown separately but may be presented side by side on a single Cost Proposal. DLA recommends that the Phase I Cost Proposal include a cost estimate for travel for a final program review. Travel locations for planning purposes are as follows:

Topic:	Location:
DLA161-001	DLA HQ, Ft Belvoir, VA and DSCC, Columbus, OH
DLA161-002	NAS, North Island, CA and DSCR, Richmond, VA
DLA161-003	DLA HQ, Ft Belvoir, VA
DLA161-004	DLA HQ, Ft Belvoir, VA and DSCR, Richmond, VA

## **IX. DIRECT TO PHASE II INSTRUCTIONS**

15 U.S.C. §638 (cc), as amended by NDAA FY2012, Sec. 5106, PILOT TO ALLOW PHASE FLEXIBILITY, allows the Department of Defense to make an award to a small business concern under Phase II of the SBIR program with respect to a project, without regard to whether the small business concern was provided an award under Phase I of an SBIR program with respect to such project.

DLA is conducting a "Direct to Phase II" pilot for designated SBIR solicitations and does not guarantee the pilot will be present in future solicitations. Each eligible topic will indicate what documentation is required to determine if Phase I feasibility has been met and the technical requirements for a Direct to Phase II proposal. **Not all DLA topics are eligible for a Direct to Phase II award. Offerors must choose between submitting a Phase I proposal OR a Direct to Phase II proposal, and may not submit both for the same topic.** DLA reserves the right not to make any awards under the Direct to Phase II pilot. All other Phase II proposal instructions remain in effect.

Direct to Phase II proposals must follow the steps outlined below:

### STEP 1:

1. Offerors must create a Proposal Cover Sheet using the DoD Proposal submission site: <https://sbir.defensebusiness.org> (follow the DoD Instructions for the Cover Sheet located in section 5.4.a).
2. Offerors must submit documentation that satisfies the Phase I feasibility requirement as the last pages of the Direct to Phase II Technical Volume submission\*
  - a. Maximum page length for feasibility documentation is 75 pages. If you have references, include a reference list or works cited list as the last page of the feasibility documentation. This will count towards the page limit.
  - b. Work submitted within the feasibility documentation must have been substantially performed by the offeror and/or the principal investigator (PI). If technology in the feasibility documentation is subject to intellectual property (IP), the offeror must provide IP rights assertions. Provide a good faith representation that you either own or possess appropriate licensing rights to all other IP that will be utilized under your proposal. Additionally, proposers shall provide a short summary for each item asserted with less than unlimited rights that describes the nature of the restriction and the intended use of the intellectual property in the conduct of the proposed research. Please see section 11.5 of the DoD instructions for information regarding technical data rights.
  - c. Include a one page summary on Commercialization Potential addressing the following:
    1. Does the company contain marketing expertise and, if not, how will that expertise be brought into the company?
    2. Describe the potential for commercial (Government or private sector) application and the benefits expected to accrue from this commercialization.
  - d. **DO NOT INCLUDE** marketing material. Marketing material will **NOT** be evaluated and **WILL** be redacted.

### STEP 2:

1. Offerors must prepare a Direct to Phase II proposal using the DLA Phase II proposal instructions below.
- 2. The Phase II proposal must be submitted by 6:00 a.m. (ET), 17 Feb 2016.**

\* NOTE: Offerors are required to provide information demonstrating that the scientific and technical merit and feasibility has been established. DLA will not evaluate the offeror's related Phase II proposal if it determines that the offeror has failed to demonstrate that technical merit and feasibility has been

established or the offeror has failed to demonstrate that work submitted in the feasibility documentation was substantially performed by the offeror and/or the principal investigator (PI). Refer to the Phase I description (within the topic) to review the minimum requirements that need to be demonstrated in the feasibility documentation.

\*NOTE: All Phase II awardees should have a Defense Contract Audit Agency (DCAA) approved accounting system. It is strongly urged that an approved accounting system be in place prior to the DLA Phase II award timeframe. If you do not have a DCAA approved accounting system in place in time, it will delay / prevent Phase II contract award.

## **X. PHASE II PROPOSAL SUBMISSION**

All Phase I awardees will be notified by DLA of a time period (typically two weeks) in which the Phase II proposal is desired and source selection resources are available to meet the technical goals of the topic. This Phase II notification process shall not limit a company from submitting a Phase II proposal. The evaluation of Phase II proposals adhere to the evaluation criteria provided below.

Due to limited funding, DLA reserves the right to limit awards under any topic and only proposals considered to be of superior quality will receive funding consideration. The preferred contract types for DLA Phase II are firm-fixed-price-level-of-effort-term (FFP) or cost plus fixed fee (CPFF).

The DLA SBIR program, in its decision process for Phase II award selections, uses the same three 16.1 BAA Evaluation Criteria – Phase II from Section 8.0 PHASE II EVALUATION CRITERIA, however with a differing prioritization and additional emphasis on commercialization potential. DLA lists the evaluation criteria in descending order of importance:

- **Technical Sufficiency:** The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution (DoD 16.1 BAA section 8.0a).
- **Commercialization Potential:** The potential for commercial (Government or private sector) application and the benefits expected to accrue from this commercialization (DoD 16.1 BAA section 6.0c). In addition to the requirements of BAA section 8.0, DLA recommends that companies demonstrate the commercialization potential of their technology by attracting private-sector co-investment and support during the performance of the Phase II. The value that DLA assesses for this factor depends on the type of co-investment or support (cash or support-in-kind), the amount of matching support, and the timing of the matching support. Consider DoD 16.1 section 7.4 Commercialization Strategy.
- **Qualifications of Key Personnel:** 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 (DoD 16.1 BAA section 6.0b). Furthermore, please include if the team contains marketing expertise and, if not, how that expertise will be brought into the effort?

## **XI. OPTIONS MUST BE INCLUDED AS PART OF PHASE II PROPOSAL**

Phase II contracts are expected to have a period of performance (POP) of roughly twenty-four months and a maximum cost of \$1,000,000 for the base plus options. Phase II contracts, consisting of a Base plus two Phase II Options (**must** be included as part of the Phase II proposal), should cover the activities over the initial (base) period and should describe appropriate the Phase II activities of each Option, all of which lead to the successful demonstration of a product or technology. The Base and Option periods may each be from six to twelve months. The Phase II Options technical proposal must be included within the 40-page limit for the Phase II proposal. DLA may or may not exercise the Phase II Options; however, DLA

will make the determination to exercise the option prior to the end of the existing POP stated in the Phase II contract award.

The offeror must submit the entire proposal (which conforms to the format in section XIII below) electronically via the DoD SBIR/STTR Proposal Submission Site (<https://sbir.defensebusiness.org>); DLA will not accept any proposals not submitted via this site. Do not send a hardcopy of the proposal. Hand or electronic signature on the proposal is also not a requirement. If you experience problems uploading a proposal, call the DoD Help Desk **1-800-348-0787** (8:00 am to 5:00 pm EST).

DLA recommends that the Phase II Cost Proposal include a cost estimate for travel for quarterly program reviews. Travel locations for planning purposes are as follows:

Topic:	Location:
DLA161-001	DLA HQ, Ft Belvoir, VA and DSCC, Columbus, OH
DLA161-002	NAS, North Island, CA and DSCR, Richmond, VA
DLA161-003	DLA HQ, Ft Belvoir, VA
DLA161-004	DLA HQ, Ft Belvoir, VA and DSCR, Richmond, VA

Notification of Selection and non-selection letters occurs electronically via e-mail.

Proposals not conforming to the terms of this solicitation will not receive further consideration.

## **XII. PHASE II PROPOSAL PAGE LIMIT**

DLA Phase II proposals have a 40-page limit (excluding the Cost Proposal and the Company Commercialization Report). Pages in excess of the 40-page limitation will not receive consideration during the evaluation of the proposal (including attachments, appendices, or references)

## **XIII. PROPOSAL FORMAT**

The technical proposal includes all items listed below in the order provided.

- **Proposal Cover Sheet:** Complete and submit the SBIR Proposal Cover Sheet in accordance with the instructions provided at <https://sbir.defensebusiness.org/>. The technical abstract should include a brief description of the program objective(s), a description of the effort, anticipated benefits and commercial applications of the proposed research, and a list of key words/terms. The technical abstract of each successful proposal will be submitted to the Office of the Secretary of Defense (OSD) for publication and, therefore, must not contain proprietary or classified information. The term “Component” on the Cover Sheet refers to the DLA organization requesting the Phase II proposal.
- **Table of Contents:** A table of contents should be located immediately after the Cover Sheet.
- **Glossary:** Include a glossary of acronyms and abbreviations used in the proposal.
- **Milestone Identification:** Include a program schedule with all key milestones identified. If options are proposed, the schedule should provide notional option start date and period of performance.
- **Identification and Significance of the Problem or Opportunity:** Briefly reference the specific technical problem/opportunity that will be pursued under this effort.

- **Phase II Technical Objectives:** The proposal should include an assessment of the potential commercial application for each objective.
- **Proposer-Prepared Statement of Work (SOW):** The SOW shall be a separate and distinct part of the proposal package, using a page break to divide it from the technical proposal. The proposed SOW must contain a summary description of the technical methodology and task description in broad enough detail to provide contractual flexibility. The following is the recommended format for the SOW; begin this section on a new page. **DO NOT include proprietary information in the SOW.**
  - 1.0 – Objective: This section is intended to provide a brief overview of the specialty area. It should explain why it is being pursued and the expected outcome.
  - 2.0 – Scope: This section should provide a concise description of the work to be accomplished, including the technology area to be investigated, goals, and major milestones. However, the key elements of this section are task development and deliverables, i.e., the anticipated end result and/or product of the effort. This section must also be consistent with the information in 4.0 (below).
  - 3.0 – Background: The proposer shall identify appropriate specifications, standards, and other documents applicable to the effort. This section includes any information, explanation, or constraints to understanding the requirements. It may include relationships to previous, current, and/or future operations. It may also include techniques previously found to be ineffective.
  - d) 4.0 – Task/Technical Requirements: The detailed description of the individual tasks to accomplish the work to be performed is considered to be legally binding on the proposer. Therefore, it must be developed in an orderly progression with sufficient detail to establish overall program requirements and goals. The work effort must be segregated into major tasks and identified in separately numbered paragraphs.

Each numbered major task should delineate by subtask the work to be performed. The SOW MUST contain every task to be accomplished; they must be definite, realistic, and clearly stated. Use “shall” whenever the SOW expresses a binding provision. Use “should” or “may” to express a declaration or purpose. Use “will” when no contractor requirement is involved, i.e., “... power will be supplied by the Government”.

- **Deliverables:** Include a section clearly describing the specific sample/prototype hardware/software to be delivered, as well as data deliverables, schedules, and quantities. Be aware of the possible requirement for unique item identification IAW DFARS 252.211-7003, Item Identification and Valuation, for hardware. If hardware/software will be developed but not delivered, provide an explanation. A list of the minimum required deliverables is provided in Section XVI.
- **Related Work:** Describe significant activities directly related to the proposed effort, including any previous programs conducted by the principal investigator, proposing firm, consultants, or others, and their application to the proposed project. Also list any reviewers providing comments regarding the offeror’s knowledge of the state-of-the-art in the specific approach proposed.
- **Commercialization Potential:**
  - The DoD requires a commercialization plan be submitted with the Phase II proposal, specifically addressing the following questions:

- What is the first planned product to incorporate the proposed technology?
    - Who are the probable customers, and what is the estimated market size?
    - How much money is needed to bring this technology to market and how will it be raised?
    - Does your firm have the necessary marketing expertise and, if not, how will your firm compensate?
    - Who are the probable competitors, and what price/quality advantage is anticipated by your firm?
  - The commercialization strategy plan should briefly describe the commercialization potential for the anticipated results of the proposed project, as well as plans to exploit it. Commercial potential is evidenced by:
    - The small business' record of commercializing SBIR/STTR or other research, particularly as reflected in its Company Commercialization Report. The Company Commercialization Report of prior SBIR/STTR awards may be included to satisfy this requirement.
    - The existence of private sector or non-SBIR/STTR funding sources demonstrating commitment to Phase II efforts/results.
    - The existence of Phase III follow-on commitments for the research subject.
    - The presence of other indicators of commercial technology potential, including the firm's commercialization strategy.
  - If awarded a Phase II contract, the contractor is required to periodically update the commercialization results of the Phase II project at <https://sbir.defensebusiness.org/>. These updates will be required, at completion of the Phase II effort, and subsequently when the contractor submits a new SBIR/STTR proposal to DoD. Firms not submitting a new proposal to DoD will be requested to provide updates annually after completion of the Phase II.
- **Relationship with Future Research or Research and Development (R/R&D) Efforts:**
  - State the anticipated results of the proposed approach, specifically addressing plans for Phase III, if any.
  - Discuss the significance of the Phase II effort in providing a basis for the Phase III R/R&D effort, if planned.
- **Key Personnel:** In the technical volume, identify all key personnel involved in the project. Include information directly related to education, experience, and citizenship. A technical resume for the principal investigator, including publications, if any, must also be included. Concise technical resumes for subcontractors and consultants, if any, are also useful. You must identify all non-U.S. citizens expected to be involved in the project as direct employees, subcontractors, or consultants. For these individuals, in addition to technical resumes, please provide countries of origin, type of visas or work permits under which they are performing, and explanation of their anticipated level of involvement in the project.

When the topic area is subject to export control, these individuals, if permitted to participate, are limited to work in the public domain. Further, tasks assigned must not be capable of assimilation into an understanding of the project's overall objectives. This prevents foreign citizens from acting in key positions, such as Principal Investigator, Senior Engineer, etc. Additional information may be requested during negotiations in order to verify foreign citizens' eligibility to perform on a contract awarded under this solicitation.

- **Facilities/Equipment:** Describe instrumentation and physical facilities necessary and available to carry out the Phase II effort. Justify equipment to be purchased (detail in cost proposal). State whether proposed performance locations meet environmental laws and regulations of Federal, state, and local Governments for, but not limited to, airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials.
- **Consultants/Subcontractors:** Private companies, consultants, or universities may be involved in the project. All should be described in detail and included in the cost proposal. **In accordance with the Small Business Administration (SBA) SBIR Policy Directive, a minimum of 50% of the R/R&D must be performed by the proposing firm, unless otherwise approved in writing by the Contracting Officer.** Signed copies of all consultant or subcontractor letters of intent must be attached to the proposal. These letters should briefly state the contribution or expertise being provided. Include a SOW and detailed cost proposal. Include information regarding consultant or subcontractor unique qualifications. Subcontract copies and supporting documents do not count against the Phase II page limit. Identify any subcontract/consultant foreign citizens per (13) above.
- **Prior, Current, or Pending Support of Similar Proposals or Awards:** WARNING: While it is permissible, with proper 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. Any potential for this situation must be disclosed to the solicitation agency(ies) before award. If a proposal submitted in response to this solicitation is substantially the same as another proposal previously, currently, or in process of being funded by another Federal agency/DoD Component or the same DoD Component, the company must so indicate on the Cover Sheet and provide the following:
  - The name and address of the Federal agency(ies) or DoD Component(s) to which proposals were or will be submitted, or from which an awarded is expected or has been received;
  - The date of proposal submission or date of award;
  - The title of the proposal;
  - Name and title of the principal investigator for each proposal submitted or award received; and
  - Title, number, and date of solicitation(s) under which the proposal was or will be submitted, or under which an award is expected or has been received.
  - If award was received, provide the contract number.
  - Specify the applicable topics for each SBIR proposal submitted or award received.

**NOTE:** If this does not apply, state in the proposal, “No prior, current, or pending support for proposed work.” Complete the attached SBIR/STTR Environment, Safety, and Occupational Health (ESOH) Questionnaire and include it with the proposal. This form does not count toward the 50-page limitation.

- **Cost Proposal:** A detailed cost proposal must be submitted. Cost proposal information will be treated as proprietary. Proposed costs must be provided by both individual cost element and contractor fiscal year (FY) in sufficient detail to determine the basis for estimates, as well as the purpose, necessity, and reasonableness of each. This information will expedite award of the resulting contract if the proposal is selected for award. Generally, cost plus fixed fee (CPFF) contracts are appropriate for Phase II awards. Phase II contracts may include profit (fixed price) or fee (cost type).

To receive a cost-type contract, a determination by the Government of a firm's accounting system adequacy is required. This determination considers the acceptability of a firm's accounting system for accumulating and billing costs under a cost-type contract. The outcome is based on a review performed by the Defense Contract Audit Agency (DCAA), with final approval provided by the Defense Contract Management Agency (DCMA). Please refer to DCAA's website, <http://www.dcaa.mil>, where specific information may be found under the "Guidance" drop down menu. Select "Information for Contractors," which will open DCAA Manual No. 7641.90. This manual is designed to assist contractors in understanding requirements applicable to the contract audit process. Enclosure 2, "Pre-award Surveys of Prospective Contractor Accounting Systems" contains information regarding DCAA's activity to determine accounting system adequacy. While only a warranted Government Contracting Officer may request a pre-award accounting system survey, this information assists firms in preparing for this activity. All Phase II proposals should indicate whether an accounting system review was previously performed by DCAA and, if so, the contact information for the auditor. Without a Government-approved accounting system, award may be delayed or prevented. Any questions regarding this matter should be discussed with the AF Phase II Contracting Officer.

Cost proposal attachments do not count toward Phase II proposal page limitations. The cost proposal includes:

- Direct Labor: Identify key personnel by labor category. Number of hours, actual hourly rates, labor overhead, and/or fringe benefits per contractor FY is also required.
- Direct Materials: Costs for materials, parts, and supplies must be justified and supported. Provide an itemized list of types, quantities, prices, and, where appropriate, purpose. If computer or software purchases are planned, detailed information such as manufacturer, price quotes, proposed use, and support for the need will be required.
- Other Direct Costs: This includes specialized services such as machining or milling, special test/analysis, and costs for temporary use/lease of specialized facilities/ equipment. Provide usage (hours) expected, rates, and sources, as well as brief discussion concerning the purpose and justification. Proposals including leased hardware must include an adequate lease versus purchase rationale. Special tooling/test equipment/material costs are acceptable but will be carefully reviewed to determine the need/appropriateness of the work proposed. The Contracting Officer must decide whether these purchases are advantageous to the Government and are directly related to the proposed effort. Title to property furnished by the Government will be vested with the AF unless determined to be more cost-effective for transfer to the contractor. The Government's intention is not to directly fund purchase of general purpose equipment.
- Subcontracts: Subcontract costs must be supported with copies of the subcontract agreements. Agreement documents must adequately describe the work to be performed and basis for cost. The agreement document should include a SOW, assigned personnel, hours and rates, materials (if any), and proposed travel (if any). A letter from the subcontractor agreeing to perform a task or tasks at a fixed price is not considered sufficient. The proposed total of all consultant fees, facility leases or usage fees, and other subcontract or purchase agreements may not exceed one-half of the total contract price or cost, unless otherwise approved in writing by the Contracting Officer.
  - IAW FAR 15.404-1, price analysis, including reasonableness, realism, and completeness, of the proposed subcontractor costs by the prime is required. If based on comparison with prior efforts, identify the basis upon which the prior prices were determined to be reasonable. If price analysis techniques are inadequate or the FAR requires submission of subcontractor cost or pricing data, provide a cost analysis IAW FAR 15.404-1(c). Cost analysis includes, but is not limited to, consideration of materials, labor, travel, other direct costs, and proposed

- profit rates.
  - **Consultants:** For each consultant, provide a separate agreement letter briefly stating the service to be provided, hours required, and hourly rate and include a short, concise resume.
  - **Travel:** Each Phase II effort, at a minimum, should include a kickoff or interim meeting. Travel costs must be justified as related to the needs of the effort. Include destinations, the number of trips, number of travelers per trip, airfare, per diem, lodging, ground transportation, etc. Information regarding per diem and lodging rates may be found in the Joint Travel Regulation (JTR), Volume 2, [www.defensetravel.dod.mil](http://www.defensetravel.dod.mil).
  - **Indirect Costs:** Indicate the basis of the proposed rates, e.g., budgeted/actual rates per FY, etc. The proposal should identify the specific rates used and allocation bases to which they are applied. Do not propose composite rates; proposed rates and applications per FY throughout the anticipated performance period should be provided.
  - **Cost Share:** While permitted, cost sharing is not required and will not be used as an evaluation factor. The cost share portion of contracts may not provide for fee.
  - **DD Form 2345:** For proposals submitted under export-controlled topics (either International Traffic in Arms (ITAR) and Export Administration Regulations (EAR)), a copy of the certified DD Form 2345, Militarily Critical Technical Data Agreement, or evidence of application submission must be included. The form, instructions, and FAQs may be found at the United States/Canada Joint Certification Program website, <http://www.dlis.dla.mil/jcp/>. Approval of the DD Form 2345 will be verified if proposal is chosen for award.
- **Company Commercialization Report:** All Phase II proposals must contain a “Commercialization Report of Prior SBIR Awards”. This report should be submitted as an attachment or enclosure and will not be counted against the 50-page limitation. The online Company Commercialization Report may be used to fulfill this requirement. As instructed in paragraph 11.2 of the DoD Solicitation, prepare the report using the password-protected DoD SBIR electronic submission site, <https://sbir.defensebusiness.org/>.

#### **XIV. FAST TRACK**

DLA does not utilize the Fast Track process.

#### **XV. PHASE I DELIVERABLES / REPORTS**

All DLA SBIR and STTR awardees are required to submit reports in accordance with the Contract Data Requirements List – CDRL and any applicable Contract Line Item Number (CLIN) of the Phase I contract. The Awardee must provide all Reports to the individuals identified in Exhibit A of the contract. Milestones: Each phase of the project will be milestone driven. The Principal Investigator will propose milestones prior to starting any phase of the project.

**Phase I proposals** should anticipate the following deliverables.

##### **Deliverables:**

- Major milestone schedule and decision tree for project
- Initial Project Summary (one-page, unclassified, non-sensitive, and non-proprietary summation of Phase I problem statement and benefit that is intended for public viewing)
- Monthly reports, may be in the format of a slide deck and teleconference
  - Identify major problems and actions necessary or taken to resolve them

- Phase I Special Technical Summary (may be in the form of a slide deck, after a significant achievement, event, or meeting)
  - Identify major problems and actions necessary or taken to resolve them
- Final Report including major accomplishments and proposed path forward
- Final Project Summary (one-page, unclassified, non-sensitive, and non-proprietary summation of Phase I results that is intended for public viewing)

## **XVI. PHASE II and “DIRECT TO PHASE II” DELIVERABLES / REPORTS**

Phase II proposals should anticipate the deliverables listed above with the addition of the following:

- Major milestone schedule and decision tree for project
- Initial Project Summary (one-page, unclassified, non-sensitive, and non-proprietary summation of Phase II problem statement and benefit that is intended for public viewing)
- Quarterly In-Progress reviews in the format of a slide deck and teleconference
  - Identify major problems and actions necessary or taken to resolve them
- Phase II Special Technical Summary (may be in the form of a slide deck, after a significant achievement, event, or meeting)
- Monthly reports, may be in the format of a slide deck and teleconference
  - Identify major problems and actions necessary or taken to resolve them
- Final Report including major accomplishments and proposed path forward
- Final Project Summary (one-page, unclassified, non-sensitive, and non-proprietary summation of Phase II results that is intended for public viewing)

## **XVII. EXTERNAL CERTIFICATION AUTHORITY (ECA)**

Effective for the 12.3 SBIR and 12.C STTR solicitations and thereafter, DoD mission partners under contract with DLA who are not eligible to receive a Common Access Card (CAC) are required to obtain a digital certificate from an approved External Certification Authority (ECA) vendor within 90 days of contract award. DoD Instruction 8520.02 (Public Key Infrastructure (PKI) and Public Key (PK) Enabling, May 24, 2011)) requires DoD mission partners to use certificates issued by the DoD ECA program or a DoD-approved Public Key Infrastructure (PKI) when interacting with the DoD in unclassified domains.

NOTE: Offerors must include, in the ODC line, the proposed purchase cost of each ECA in order to receive reimbursement for the cost of ECAs. Reimbursement is limited to a maximum of three ECAs per company. Offerors should consider purchasing the ECA subscription to cover the entire Phase II period of performance, to include the option year. Offerors will only receive reimbursement for ECA costs once per subscription. Offerors that previously obtained a DoD-approved ECA may not receive reimbursement under any potential SBIR/STTR Phase II contract. Likewise, offerors having received reimbursement for ECAs obtained, as a requirement under an active SBIR/STTR Phase II contract, may not receive reimbursement again for the same ECA purchase under any subsequent government contract.

## **XVIII. SMALL BUSINESS CERTIFICATIONS**

15 U.S.C. §638(cc), as amended by NDAA FY12 Sec. 5143. Reducing Vulnerability of SBIR and STTR Programs to Fraud, Waste, and Abuse, requires each applicant for and small business concern that receives funding under the SBIR program or the STTR program shall certify whether the applicant or small business concern is in compliance with the laws relating to the SBIR program and the STTR program and the conduct guidelines established under the SBIR Policy Directive and the STTR Policy Directive.

## **XIX. SECURITY REQUIREMENTS**

If a proposed effort is classified or classified information is involved, the offeror must have, or obtain, a security clearance in accordance with the Industry Security Manual for Safeguarding Classified Information (DOD 5220.22M).

## **XX. PAYMENT SCHEDULE**

Payment will be made in accordance with General Provisions FAR 523.216-7, Allowable Cost and Payments.

## **XXI. PUBLICATION APPROVAL (PUBLIC RELEASE)**

National Security Decision Directive (NSDD) 189 established the national policy for controlling the flow of scientific, technical, and engineering information produced in federally funded fundamental research at colleges, universities, and laboratories. The directive defines fundamental research as follows:

"Fundamental research' means basic and applied research in science and engineering, the results of which ordinarily are published and shared broadly within the scientific community, as distinguished from proprietary research and from industrial development, design, production, and product utilization, the results of which ordinarily are restricted for proprietary or national security reasons."

It is DLA's goal to eliminate pre-publication review and other restrictions on fundamental research except in those exceptional cases when it is in the best interest of national security.

## **XXII. 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.

## **XXIII. PATENTS**

Small business concerns 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 U.S. 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.

Technical Data Rights in technical data, including software, developed under the terms of any contract resulting from proposals submitted in response to a DoD SBIR/STTR Solicitation generally remain with the contractor, except that the Government obtains a royalty-free license to use such technical data only for government purposes during the period commencing with contract award and ending five years after completion of the project under which the data were generated. Upon expiration of the five-year restrictive license, the Government has unlimited rights in the SBIR/STTR data. During the license period, the Government may not release or disclose SBIR/STTR data to any person other than its support services contractors, except:

1. For evolutionary purposes
2. As expressly permitted by the contractor
3. A use, release, or disclosure that is necessary for emergency repair or overhaul of items operated by the Government. See
4. 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."

## **DLA SBIR 16.1 Topic Index**

DLA161-001	Manufacturing Improvements for DLA Lithium Batteries
DLA161-002	Aircraft Alternative Braking System for Reduced Cost of Sustainment
DLA161-003	Economically Recovering Rare Earth Materials
DLA161-004	Advanced Technologies for Smart Connected Logistics

## DLA SBIR 16.1 Topic Descriptions

DLA161-001      TITLE: Manufacturing Improvements for DLA Lithium Batteries

TECHNOLOGY AREA(S): Air Platform, Electronics, Ground/Sea Vehicles, Materials/Processes, Weapons

OBJECTIVE: This topic is eligible for the DLA Direct to Phase II Pilot Program. Please see the DLA instructions for additional information. To be eligible, offerors are required to provide information demonstrating the scientific and technical merit and feasibility of a Phase I project. DLA will not evaluate the offeror's related Phase II proposal where it determines that the offeror has failed to demonstrate the scientific and technical merit and feasibility of the Phase I project. Offerors must choose between submitting a Phase I proposal OR a Direct to Phase II proposal, and may not submit both for the same topic.

DLA seeks to provide responsive, best value supplies; in a manner, that consistently meets our customer's needs. DLA continually investigates diverse technologies for manufacturing improvements which would lead to the highest level of performance and cost efficiency in battery products supporting fielded weapon systems with a future impact on both commercial technology and government applications. DLA seeks manufacturing improvements for affordability and production capacity for the following lithium batteries: BA-5790 NSN 6135-016201306; BB-2590 NSN 6140-014904316, 6140-016339444 or NSN 6140-015533527; PRC-154 Radio Battery NSN 6140-016049912; PRC-148 Radio Battery NSN 6140-014871153; PRC-152 Battery NSN 6140-015487566; PLM-4 Battery NSN 6140-015093743. Modeling and simulation are encouraged, but not required, to guide the development of improvements in battery manufacturing processes. All these areas provide potential avenues toward achieving breakthrough advances.

Proposed efforts funded under this topic must encompass specific battery manufacturing technology resulting in a unit cost reduction and improvement of battery product availability. It is preferred that technologies do not alter the form fit and function of the battery. Research and development efforts selected under this topic shall demonstrate and involve a degree of risk where the technical feasibility of the proposed work has yet to demonstrate a fully established maturity.

Further, proposed efforts must align between Technology Readiness Level (TRL) 3 and 6 to receive funding consideration. The definition of TRL 3 is -- analytical and experimental critical function and/or characteristic proof of concept, and TRL 6 is -- system/subsystem model or prototype demonstration in a relevant environment.

DESCRIPTION: DLA seeks to develop manufacturing solutions that improve the industrial capability to deliver specific lithium batteries (see NSN list) to the Warfighter in a ready to use state with lower cost and lead-time. These solutions must apply innovations to improve the production of lithium batteries and reduce costs associated with the battery manufacturing process.

These solutions must result in an improvement in the affordability of specific lithium battery products to DLA and its customers. The proposals must include an economic analysis of the expected market impact of the technology proposed. This topic seeks a substantial reduction of unit cost metrics and battery product availability. Incremental advancements will receive very little consideration. DLA seeks only projects the private sector considers too risky for ordinary capital investment.

PHASE I: Combine innovative approaches for modification and or functionalization of current and future battery manufacturing for specific DLA NSNs. Incorporate material within the project to evaluate concept for proof-of-principle, and demonstration of the proof of principle in a controlled manufacturing environment. Demonstration will successfully detect and presumptively identify a manufacturing cost savings, a reduced lead-time, and an increase of the item's availability.

PHASE II: Develop applicable and feasible demonstrations of the manufacturing improvements for the approach described, and demonstrate a degree of commercial viability. Validate the feasibility of the innovative battery

manufacturing process by demonstrating implementation in the production, testing, and integration of items for DLA. Validation would include, but not be limited to, prototype fabrication or low-rate initial production and demonstration of item operation in a representative system. A partnership with a current or potential supplier to DLA is highly desirable. Identify any commercial benefit or application opportunities of the innovation. The development of innovative processes should proceed with the intent to readily transition to production in support of DLA and its supply chains.

PHASE III DUAL USE APPLICATIONS: Technology transition via successful demonstration of a new process technology. This demonstration must show near-term application to one or more Department of Defense systems, subsystems, or components. This demonstration must also verify the potential for enhancement of quality, reliability, performance and/or reduction of unit cost or total ownership cost of the proposed subject. Proposed efforts, if directly related to manufacturing process innovation, must be judged to be at a Manufacturing Readiness Level (MRL) of less than 6 -- capability to produce a prototype system or subsystem in a production relevant environment -- but greater than 2 -- manufacturing concepts identified -- to receive funding consideration.

Private Sector Commercial Potential: Battery manufacturing technologies have a direct applicability to all defense system technologies. Battery manufacturing processes and related technology and support systems have wide applicability to the defense industry including air, ground, sea, and weapons technologies. There is relevance to the private sector industries as well as civilian sector. Many of the technologies under this topic would be directly applicable to other DoD agencies, NASA, and any commercial manufacturing venue. Advanced manufacturing technologies for batteries would directly improve production in the commercial sector resulting in reduced cost and improved productivity.

#### REFERENCES:

1. MIL-PRF-32271
2. MIL-PRF-32052
3. MIL-PRF-32383

KEYWORDS: Battery manufacturing, battery, technology insertion, automation, lithium, batteries, agile manufacturing, computer integrated manufacturing, integrated product and process design, intelligent manufacturing, just in time, lean manufacturing, lean production, machine optimization, manufacturing capacity, manufacturing cost, manufacturing efficiency, manufacturing quality, model based manufacturing, predictive modeling, process control, process design, process diagnostics, process planning, product design, product specifications, production control, quality assurance, real time inspection, sustainable manufacturing

DLA161-002      TITLE: Aircraft Alternative Braking System for Reduced Cost of Sustainment

TECHNOLOGY AREA(S): Air Platform, Materials/Processes, Space Platforms

OBJECTIVE: The Defense Logistics Agency (DLA) seeks to provide responsive, best value supplies consistently to our customers. DLA continually investigates diverse technologies for manufacturing which would lead to the highest level of innovation in the discrete-parts support of fielded weapon systems (many of which were designed in the 1960's, 1970's and 1980's) with a future impact on both commercial technology and government applications. As such, advanced technology demonstrations for affordability and advanced industrial practices to demonstrate the combination of improved discrete-parts manufacturing and improved business methods are of interest. All these areas of manufacturing technologies provide potential avenues toward achieving breakthrough advances. Proposed efforts funded under this topic may encompass any specific discrete-parts manufacturing technology at any level resulting in a unit cost reduction. Research and Development efforts selected under this topic shall demonstrate and involve a degree of risk where the technical feasibility of the proposed work has not been fully established. Further, proposed efforts must be judged to be at a Technology Readiness Level of less than 6 -- system/subsystem model or prototype demonstration in a relevant environment -- but greater than 3 -- analytical and experimental critical

function and/or characteristic proof of concept -- to receive funding consideration.

DESCRIPTION: DLA seeks drastically lower unit costs of discrete-parts support through manufacturing revolutions that also have applicability to low and high volume production from DoD and commercial sales. This will result in an improvement in the affordability of these innovations to DLA and its customers and the development of cost effective methods to sustain existing defense systems while potentially impacting the next generation of defense systems. The proposals must include and will be judged, in part, on an economic analysis of the expected market impact of the technology proposed. This topic seeks a revolution in the reduction of unit cost metrics. Incremental advancements will receive very little consideration. DLA seeks herein only projects that are too risky for ordinary capital investment by the private sector.

Specifically, there are new brake technologies matriculating in industry that could apply to existing and future aircraft platforms. These technologies have potential to revolutionize the aviation braking technology. Today's wheel braking systems rely almost exclusively on friction brakes to convert an aircraft's kinetic energy at landing into heat energy. Traditional brakes require large investments in high cost spares to replace worn friction components. They require significant engineering resources to manage heat dissipation to avoid material degradation. Friction brakes require time to cool after landing, which restricts fleet operating tempos. Cooling is needed to avoid brake or refueling fires, to minimize risk of ground crew injuries, and to recover full braking performance prior to next flight. The primary goal of developing this new technology is to:

- Maintain or improve brake performance as compared to existing brake technology
- Reduce or eliminate replacement of friction-based consumable braking components thereby providing DoD significant spare procurement saving
- Improve thermal performance of the braking system as compared to existing technology.

PHASE I: Determine, insofar as possible, the scientific, technical and commercial feasibility of the new brake technology that meets the above stated goals via analysis. From these tasks develop a preliminary set of system requirements that include a performance envelope, system weights, component volume envelopes, energy conversion, transfer and storage rates, and operating environments. Identify specific operational and performance gaps between the new brake technology and its functionality and usage. Conduct a preliminary cost benefit analysis for the new technology to estimate return on investment from both military and commercial incorporation. If project is down selected to Phase II, develop a statement of work to meet detailed Phase II requirements and objectives.

PHASE II: Develop applicable and feasible prototype demonstrations for the approach described, and demonstrate a degree of commercial viability. Validate the feasibility of the brake to perform against the requirements generated in Phase I, and evaluate the demonstrated component sizes to fit realistically in an aircraft envelope. Validation would include, but not be limited to, system simulations, operation in test-beds, or operation in a demonstration system. Evaluate and identify feasible solutions to performance gaps for the brake to be used on aircraft. Identify an appropriate Navy aircraft, update the system requirements, and develop preliminary interface requirements so the new technology can be integrated with the selected aircraft's airframe and systems. Interface requirements specifically include, but are not limited to, brake torque outputs within the structural capabilities of the airframe and landing gear, physical envelope requirements for the brake to fit on the aircraft's main landing gear axle inside its main landing gear wheel, brake command input signal versus brake generated torque for integration with selected aircraft's brake control (and antiskid) system, brake system electrical power requirements within the aircraft's electrical system capacity and the brake control system's capacity. If successful, a potential follow-on effort (Phase II modification) would qualify this new technology brake by laboratory dynamometer testing with the selected aircraft's wheel and tire. Laboratory hardware-in-the-loop tests would qualify the new brake technology for use within the existing aircraft's brake control system. Additionally, the new brake technology will need to be laboratory qualified to specific airframe requirements for environmental, vibration, and EMI standards. From this, qualified prototype hardware would be provided for installation on a Navy aircraft for ground/flight testing.

PHASE III DUAL USE APPLICATIONS: Technology transition via successful demonstration of a new process technology. This demonstration should show near-term application to one or more Department of Defense systems, subsystems or components. This demonstration should also verify the potential for enhancement of quality, reliability, performance and/or reduction of unit cost or total ownership cost of the proposed subject. To that end, the new technology brake system, specifically its prototype hardware from Phase II, would be installed on an aircraft

for which the new brake system was qualified and tested to an approved NAVAIR test plan.

Private Sector Commercial Potential: The disadvantages of friction-based braking systems are common across all types of vehicles and machines that use them. Parts wear and must be replaced, generated heat must be managed, performance drops during repeated use, and risk of burns and fires required brake cooling times. Aviation brakes are unique in their need to convert massive levels of energy into heat in a very short time span within a small, lightweight volume at very discrete time intervals. This is true whether the aircraft is military, commercial, cargo or civil. The new technology proposed will eliminate wear of high cost friction pads and disks and thus eliminate spare procurements of these parts. Fewer brake parts end up in landfills. With no generated heat aircraft availability increases due to shorter turn-around times and better component reliability. Personnel safety is increased. New materials can be introduced. Brake performance becomes more predictable. These benefits would be gained by every aircraft using new technology brakes, and may be seen by any vehicle using them as well.

KEYWORDS: Brakes, braking systems, friction, friction brakes, electromechanical brakes, electric brakes, brake spares, green technology, environmentally friendly brakes, energy management, brake control, regenerative brakes, aviation brakes, aircraft brakes, worn brakes, brake heat, brake energy, Navy brakes

DLA161-003      TITLE: Economically Recovering Rare Earth Materials

TECHNOLOGY AREA(S): Air Platform, Ground/Sea Vehicles, Materials/Processes, Weapons

OBJECTIVE: The Defense Logistics Agency (DLA) seeks to provide responsive, best value supplies consistently to our customers. DLA continually investigates diverse technologies for manufacturing which would lead to the highest level of innovation in the discrete-parts support of fielded weapon systems (many of which were designed in the 1960's, 1970's and 1980's) with a future impact on both commercial technology and government applications. As such, advanced technology demonstrations for affordability and advanced industrial practices to demonstrate the combination of improved discrete-parts manufacturing and improved business methods are of interest. All these areas of manufacturing technologies provide potential avenues toward achieving breakthrough advances. Proposed efforts funded under this topic may encompass any specific discrete-parts or materials manufacturing or processing technology at any level resulting in a unit cost reduction. Research and Development efforts selected under this topic shall demonstrate and involve a degree of risk where the technical feasibility of the proposed work has not been fully established. Further, proposed efforts must be judged to be at a Technology Readiness Level of less than 6 -- system/subsystem model or prototype demonstration in a relevant environment -- but greater than 3 -- analytical and experimental critical function and/or characteristic proof of concept -- to receive funding consideration.

DESCRIPTION: Many products contain rare earth elements, such as permanent magnets, cell phones, hearing aids, wind turbines, and catalytic converters. There is very limited domestic production of these rare earth materials and therefore a risk of foreign reliance. Developing an economically viable process for recovering rare earth materials from these items, or recycling the items themselves, could facilitate the establishment of a viable, competitive domestic supply chain. DLA R&D seeks to prove the viability of a recycling or reclamation process and facilitate commercialization of that process. R&D tasks include identifying sources of scrap and developing process for extracting and re-processing the rare earth metals from permanent magnets or motors.

PHASE I: Determine, insofar as possible, the scientific, technical and commercial feasibility of the idea. Include a plan to demonstrate the innovative discrete-parts manufacturing process and address implementation approaches for near term insertion into the manufacture of Department of Defense (DoD) systems, subsystems, components or parts.

PHASE II: Develop applicable and feasible process demonstration for the approach described, and demonstrate a degree of commercial viability. Validate the feasibility of the innovative process by demonstrating its use in the production, testing and integration of items for DLA. Validation would include, but not be limited to, prototype quantities, data analysis, laboratory tests, system simulations, operation in test-beds, or operation in a demonstration system. A partnership with a current or potential supplier to DLA, OEM, or other suitable partner is highly desirable. Identify commercial benefit or application opportunities of the innovation. Innovative processes should be

developed with the intent to readily transition to production in support of DLA and its supply chains.

**PHASE III DUAL USE APPLICATIONS:** Technology transition via successful demonstration of a new process technology. This demonstration should show near-term application to one or more Department of Defense systems, subsystems or components. This demonstration should also verify the potential for enhancement of quality, reliability, performance and/or reduction of unit cost or total ownership cost of the proposed subject.

**Private Sector Commercial Potential:** Material manufacturing improvements, including development of domestic manufacturing capabilities, have a direct applicability to all defense system technologies. Material manufacturing technologies, processes, and systems have wide applicability to the defense industry including air, ground, sea, and weapons technologies. Competitive material manufacturing improvements should have leverage into private sector industries as well as civilian sector relevance. Many of the technologies under this topic would be directly applicable to other DoD agencies, NASA, and any commercial manufacturing venue. Advanced technologies for material manufacturing would directly improve production in the commercial sector resulting in reduced cost and improved productivity.

**REFERENCES:**

1. <https://www.dodmantech.com/>
2. 2015 Strategic and Critical Materials Report on Stockpile Requirements
3. National Defense Authorization Act For Fiscal Year 2014

**KEYWORDS:** Lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium, scandium, oxide reduction, permanent magnets, catalysts, wind turbines, motor, recycling, reclamation, domestic, supply chain.

DLA161-004      TITLE: Advanced Technologies for Smart Connected Logistics

**TECHNOLOGY AREA(S):** Air Platform, Ground/Sea Vehicles, Materials/Processes, Weapons

**OBJECTIVE:** This topic is eligible for the DLA Direct to Phase II Pilot Program. Please see the DLA instructions for additional information. To be eligible, offerors are required to provide information demonstrating the scientific and technical merit and feasibility of a Phase I project. DLA will not evaluate the offeror's related Phase II proposal where it determines that the offeror has failed to demonstrate the scientific and technical merit and feasibility of the Phase I project. Offerors must choose between submitting a Phase I proposal OR a Direct to Phase II proposal, and may not submit both for the same topic.

DLA seeks to provide responsive, best value supplies; in a manner, that consistently meets our customer's needs. DLA continually investigates diverse technologies for sustainment improvements which would lead to the highest level of performance and cost efficiency in products supporting fielded weapon systems with a future impact on both commercial technology and government applications. DLA seeks improvements for affordability and logistics capacity for the following:

The Internet of Things (IoT) is often viewed as a network of linked devices. Each device is a smart, connected product characterized by its "awareness" of its state and is able to communicate with other important 'things' in its environment. Connectivity amplifies the awareness and enables the device to be connected to many other devices and sources of data. DLA seeks connecting devices and user/systems to the data necessary to provide "cradle to grave" logistical sustainment; for example, the technology to acquire and organize the vast amount of data that will be supplied by these devices. The data must be transformed so it is coherent, relevant, and actionable by humans and Machine-to-Machine or System-to-System interfaces. To accomplish this, DLA expects a standard or open source protocol solution. The data acquired from IoT devices will be independent from the constraints of the device suppliers or any singular data aggregator.

Proposed efforts funded under this topic must encompass specific technology resulting in cost reduction and improvement of product availability. Research and development efforts selected under this topic shall demonstrate and involve a degree of risk where the technical feasibility of the proposed work has yet to demonstrate a fully established maturity.

Further, proposed efforts must align between Technology Readiness Level (TRL) 3 and 6 to receive funding consideration. The definition of TRL 3 is -- analytical and experimental critical function and/or characteristic proof of concept, and TRL 6 is -- system/subsystem model or prototype demonstration in a relevant environment.

DESCRIPTION: DLA seeks to develop technology solutions that improve the industrial capability to deliver specific parts to the Warfighter in a ready to use state with lower cost and lead-time. These solutions must apply innovations to improve the identification, availability and costs associated with the DoD logistics technical data process.

These solutions must result in an improvement in the affordability of specific products to DLA and its customers. The proposals must include an economic analysis of the expected market impact of the technology proposed. This topic seeks a substantial reduction of cost metrics and product availability. Incremental advancements will receive very little consideration. DLA seeks only projects the private sector considers too risky for ordinary capital investment.

PHASE I: Determine, insofar as possible, the scientific, technical and commercial feasibility of the idea. Include a plan to demonstrate the innovative process and address implementation approaches for near term insertion into the Department of Defense (DoD) logistics systems or subsystems.

PHASE II: Develop applicable and feasible demonstrations for the approach described, and demonstrate a degree of commercial viability. Validate the feasibility of the innovative process by demonstrating its use in the production, testing and integration of items for DLA. Validation would include, but not be limited to, system simulations, operation in test-beds, or operation in a demonstration system. A partnership with a current or potential supplier to DLA is highly desirable. Identify commercial benefit or application opportunities of the innovation. Innovative processes should be developed with the intent to readily transition to production in support of DLA and its supply chains.

PHASE III DUAL USE APPLICATIONS: Technology transition via successful demonstration of a new process technology. This demonstration should show near-term application to one or more Department of Defense logistics systems or subsystems. This demonstration should also verify the potential for enhancement of quality, reliability, performance and/or reduction of costs or total ownership cost of the proposed subject.

Private Sector Commercial Potential: Smart Connected Logistics technology improvements have a direct applicability to all defense systems. Smart Connected Logistics technologies, processes, and systems have wide applicability to the defense industry including air, ground, sea, and weapons technologies. Competitive Smart Connected Logistics improvements shall have leverage into private sector industries as well as civilian sector relevance. Many of the technologies under this topic would be directly applicable to other DoD agencies, NASA, and any commercial manufacturing venue. Advanced technologies for Smart Connected Logistics would directly improve logistics operations in the commercial sector resulting in reduced cost and improved productivity.

REFERENCES: None provided.

KEYWORDS: Semantic, ontologies, open source, Internet, Machine to Machine, Digital Thread