DEFENSE LOGISTICS AGENCY (DLA)
SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM
SBIR FY12.2 Proposal Submission Instructions

Information about DLA can be found at http://www.dla.mil/. The DLA SBIR program is implemented, administered and managed by DLA HQ J335 Research and Development. General questions should be directed to:

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Use of e-mail is encouraged.

During the pre-release period (April 24 – May 23, 2012) contact the topic authors listed for each topic in the solicitation. To obtain answers to technical questions during the formal Solicitation period (May 24 – June 27, 2012), visit http://www.dodsbir.net/sitis. For general inquiries or problems with the electronic submission, contact the DoD Help Desk at 1-866-724-7457 (8:00 am to 5:00 pm ET).

DLA's projected funding levels support between one (1) and ten (10) Phase I awards and between one (1) and four (4) Phase II awards from these two (2) topics. DLA reserves the right to limit awards under any topic.

DLA SBIR PROGRAM PRINCIPLES

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 for a prototype or at least a proof-of- concept demonstration. Phase II selections will be strongly influenced on future market possibilities and commercialization potential demonstrated. The demonstration of commercialization potential is best evidenced by Phase II funding commitments, public or private, submitted as part of the Phase II proposal.

SUBMISSION OF DLA SBIR PROPOSALS

The DLA SBIR program, in its decision process for Phase I award selections, uses the 12.2 BAA Evaluation Criteria – Phase I from Section 4.2 and 4.4, however with a differing prioritization and additional emphasis on both innovation and commercialization potential. The DLA evaluation criteria are listed in descending order of importance:

a. technical sufficiency
b. innovation will be evaluated independently from technical sufficiency. The DLA SBIR program employs the following principles of innovation. An invention improves some product, process or service. And further, an invention transforms into innovation when introduced to the public, or commercialized. DLA seeks technologies and processes that offer a breakthrough in the cost, quality or lead time of the relevant topic population of items and that DLA procures that population for the military services.
c. commercialization potential. In addition to the requirements of BAA paragraph 4.2c and 4.4, DLA recommends that offeror's provide a plan to seek private and/or public funding commitments along with possible commercialization partnerships that have the relevant potential to invest in the technology. This plan would be accomplished during the Phase I research and optimally result in potential co-investors at the time of Phase II proposal submission
d. qualifications of the proposed principal/key investigators, supporting staff and consultants

The entire proposal (which includes Cover Sheets, Technical Proposal, Cost Proposal, and Company Commercialization Report) must be submitted electronically via the DoD SBIR/STTR Proposal Submission Site (http://www.dodsbir.net/submission); DLA WILL NOT accept any proposals which are not submitted via this site. Do not send a hardcopy of the proposal. Hand or electronic signature on the proposal is also NOT required. If you experience problems uploading a proposal, call the DoD Help Desk 1-866-724-7457 (8:00 am to 5:00 pm EST). Selection and non-selection letters will be sent electronically via e-mail.

Proposals not conforming to the terms of this solicitation will not be considered.

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 2.15 of the DoD SBIR Program Solicitation 12.2 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. You may be asked to provide additional information during negotiations in order to verify the foreign citizen's eligibility to participate on a contract issued as a result of this solicitation.

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 be considered in the evaluation of the proposal (including attachments, appendices, or references, but excluding the Cost Proposal and Company Commercialization Report).

OPTION MUST BE INCLUDED AS PART OF PHASE I PROPOSAL

Phase I contracts are expected to have a period of performance of roughly nine to twelve months and a maximum cost of $100,000. 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. Only Phase I companies invited to submit a Phase II proposal will be eligible to exercise the Phase I Option. DLA may or may not exercise the Phase I Option but the decision will be made prior to the end of the period of performance stated in the Phase I contract.

A firm-fixed-price-level-of-effort-term Phase I cost proposal ($150,000 maximum) must be submitted 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. It is recommended 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:
DLA122-001	Defense Supply Center Richmond, VA
DLA122-002	Fort Belvoir, VA

PHASE I KEY DATES

12.2 Solicitation Pre-release	April 24 – May 23, 2012
12.2 Solicitation Open	May 24 – June 27, 2012
Phase I evaluations	July 2012
Phase I awards	December 2012

PHASE II PROPOSAL SUBMISSION

Phase II proposals may be submitted at any time after the effective date of the Phase I award. DLA may invite Phase I performers to submit a Phase II proposal, not to exceed $1,000,000, based upon the success of the Phase I contract to meet the technical goals of the topic. This Phase II proposal invitation process shall not limit a company from submitting a Phase II proposal. Phase II proposals will be evaluated in accordance with 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 be funded. The preferred contract types for DLA Phase II are firm-fixed-price-level-of-effort-term or cost plus fixed fee.

The DLA SBIR program, in its decision process for Phase II award selections, uses the three 12.2 BAA Evaluation Criteria – Phase II from Section 4.3 and 4.4, however with a differing prioritization and additional emphasis on commercialization potential. The DLA evaluation criteria are listed in descending order of importance:

a. technical sufficiency
b. commercialization potential. In addition to the requirements of BAA paragraph 4.3c and 4.4, 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.
c. qualifications of the proposed principal/key investigators, supporting staff and consultants

The entire Phase II proposal (which includes Cover Sheets, Technical Proposal, Cost Proposal, and Company Commercialization Report) must be submitted electronically via the DoD SBIR/STTR Proposal Submission Site (http://www.dodsbir.net/submission); DLA WILL NOT accept any proposals which are not submitted via this site. Do not send a hardcopy of the proposal. Hand or electronic signature on the proposal is also NOT required. If you experience problems uploading a proposal, call the DoD Help Desk 1-866-724-7457 (8:00 am to 5:00 pm EST). Selection and non-selection letters will be sent electronically via e-mail.

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 be considered in the evaluation of the proposal (including attachments, appendices, or references, but excluding the Cost Proposal and Company Commercialization Report).

FAST TRACK

DLA does not utilize Fast Track.

PHASE II ENHANCEMENT POLICY

DLA does not utilize a Phase II enhancement process.

PHASE I SUMMARY REPORTS

All Phase I award winners must submit a Phase I Final Summary Report at the end of their Phase I project. The Phase I summary report is an unclassified, non-sensitive, and non-proprietary summation of Phase I results that is intended for public viewing on the DLA web site. A summary report should not exceed 700 words, and should include the technology description and anticipated applications / benefits for government and or private sector use. It should require minimal work from the contractor because most of this information is required in the final technical report. This requirement for both a summary report and a final report will also apply to any subsequent Phase II contract.

DLA SUBMISSION OF FINAL REPORTS

All final reports will be submitted in accordance with the Contract Data Requirements List (CDRL) as specified in the contract.

DLA SBIR 12.2 Topic Index

DLA SBIR 12.2 Topic Descriptions

DLA-001 TITLE: Advanced Forging Manufacturing Innovations

TECHNOLOGY AREAS: Air Platform, Ground/Sea Vehicles, Materials/Processes, Weapons

OBJECTIVE: The Defense Logistics Agency (DLA) seeks to provide responsive, best value parts consistently to our customers, including forged parts which are made when metal is pressed or hammered under great pressure. DLA continually investigates diverse technologies for manufacturing forgings which would lead to the highest level of innovation in the support of fielded weapon systems 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 innovative forging manufacturing processes and business methods are of interest. All these areas of forging manufacturing provide potential avenues toward achieving breakthrough advances. Proposed efforts funded under this topic may encompass any specific forging 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 forged spare parts support through manufacturing revolutions that also have applicability to low or high volume production from 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.

PHASE I: Determine, insofar as possible, the scientific, technical and commercial feasibility of the idea. Include, where appropriate, a process technology roadmap for implementing promising approaches for near term insertion in support of Department of Defense (DoD) systems, subsystems or component production.

PHASE II: Develop applicable and feasible prototype demonstrations for the approach described, and demonstrate a degree of commercial viability. Validate the feasibility of the innovative forging manufacturing 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 any 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: 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: Forging manufacturing innovations have a direct applicability to many defense system technologies. New forging technologies, processes, and systems have wide applicability to the defense industry including air, ground, sea, and weapons technologies. There is leverage into the 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 many commercial manufacturing venues. Forging Manufacturing Innovations would directly improve production in the commercial sector resulting in reduced cost and improved productivity.

REFERENCES:
1. Altan, Taylan, Ngaile, Gracious and Shen, Gangshu eds., Cold and Hot Forging: Fundamentals and Applications. Materials Park: ASM International, 2005.

2. Semiatin, S.L., ed., Metalworking: Bulk Forming. Vol. 14A of Metals Handbook. Metals Park: ASM International, 2005.

KEYWORDS: Adaptive control, agile manufacturing, artificial intelligence, axisymmetric forging, backward extrusion, benign manufacturing, board hammer, closed die forging, coining, cold forging, cold heading, computer aided design, computer aided engineering, computer aided manufacturing, computer aided process planning, computer integrated manufacturing, counterblow forging, cross forging, die lubricant, drop hammer, extrusion, flat die forging, forgeability, forging, forging dies, forging machine, forging roll, form rolling, gravity hammer, green manufacturing, hammer forging, hand forging, heading, hollow forging, hot-die forging, hot forging, hot inspection, hot upset forging, hydraulic hammer, hydraulic press, impact extrusion, impression die forging, industrial safety, integrated product and process design, intelligent manufacturing, inventory systems, isothermal forging, just in time, lean manufacturing, lean production, logistics systems, machine controls, machine optimization, machine preventive maintenance, machinery manufacturing accuracy, mandrel forging, manufacturing capacity, manufacturing cost, manufacturing efficiency, manufacturing equipment, manufacturing quality, manufacturing skills, manufacturing software, manufacturing systems, manufacturing workforce, mechanical press, mechanical upsetter, model based manufacturing, near net shape forging, non destructive testing, open die forging, powder forging, precision forging, predictive modeling, press forging, process control, process design, process diagnostics, process planning, product design, product specifications, production control, profile rolling, purchasing, quality assurance, quality systems, real time inspection, reliability assessment, remanufacturing, statistical process control, steam hammer, supply chain, sustainable manufacturing, swaging, system simulation, tooling, upset forging, warm forging, worker safety, workforce assignment, workforce skills

DLA-002 TITLE: Advanced Battery Technologies and Manufacturing Process Improvements

TECHNOLOGY AREAS: Air Platform, Ground/Sea Vehicles, Materials/Processes, Electronics

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 battery products supporting 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 battery manufacturing and operation, as well as improved business methods are of interest. 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 may encompass any specific battery manufacturing technology resulting in a unit cost reduction and improvement of battery 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 not been fully established.

Further, proposed efforts must be judged to be at a Technology Readiness Level (TRL) 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 to develop manufacturing and logistics solutions that improve the industrial capability to deliver batteries to the Warfighter in a ready to use state with better shelf life, increased safety, and lower cost and lead time. These solutions may apply innovations to improve standardization in the battery supply chain and reduce the environmental impact of battery manufacturing and disposal. This topic seeks solutions in one or more of the following technical thrust areas:

- Diminishing Manufacturing Sources and Material Shortages (DMSMS)
- Supply Chain Logistics
- Battery Maintenance
- Reducing Acquisition Costs
- Surge and Sustainment
- Shelf Life
- Technology Transition/Insertion
- Automation

• Lithium Battery Safety

These solutions will also result in an improvement in the affordability of improved battery products and services to DLA and its customers, sustainment of existing defense systems, and 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 and battery product availability. Incremental advancements will receive very little consideration. DLA seeks herein only projects that are too risky for ordinary capital investment by the private sector.

PHASE I: Determine, insofar as possible, the scientific, technical and commercial feasibility of the idea. Include, where appropriate, a process technology roadmap for implementing promising approaches for near term insertion in support of Department of Defense (DoD) systems, subsystems or component production.

PHASE II: Develop applicable and feasible prototype demonstrations for the approach described, and demonstrate a degree of commercial viability. Validate the feasibility of the innovative battery technologies and its manufacturing process by demonstrating implementation 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 any 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: 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. 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 technologies and battery manufacturing improvements have a direct applicability to all defense system technologies. Battery technologies, their 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 technologies for batteries and their manufacturing would directly improve production in the commercial sector resulting in reduced cost and improved productivity.

REFERENCES:
1. DLA Battery Network (BATTNET)

2. Joint Power Sources Technical Working Group

3. GAO-11-113, Dec 2010, Report to Congressional Committees, “Opportunities Exist to Improve DOD’s Oversight of Power Source Investments”

4. NDIA Military Power Sources Committee

KEYWORDS: Manufacturing, battery, battery technologies, supply chain, distribution, safety, availability, affordability, life cycle cost, rechargeable, lithium SO2, lithium MnO2, zinc MnO2, lead acid, nickel cadmium, nickel metal hydride, lithium ion, lithium polymer, Diminishing Manufacturing Sources and Material Shortages, DMSMS, logistics, battery maintenance, surge, sustainment, shelf life, technology transition, technology Insertion, automation, lithium battery safety, Li/CFx, alkaline, lithium, non-rechargeable, manganese dioxide, lithium carbon monofluoride, ANSI C18, MIL-B-18, MIL-PRF-32052, power source, MIL-PRF-32271, MIL-PRF-32143, MIL-PRF-49471, MIL-PRF-49450, batteries, communications, electronics, electronic materials, electrolyte, anode, cathode, separator material, battery cell, BB2590, MIL-PRF-8565, lead acid, adaptive control, agile manufacturing, artificial intelligence, computer aided design, computer aided engineering, computer aided manufacturing, computer aided process planning, computer integrated manufacturing, industrial safety, integrated product and process design, intelligent manufacturing, inventory systems, just in time, lean manufacturing, lean production, logistics systems,

machine controls, machine optimization, machine preventive maintenance, machinery manufacturing accuracy, manufacturing capacity, manufacturing cost, manufacturing efficiency, manufacturing equipment, manufacturing quality, manufacturing skills, manufacturing software, manufacturing systems, manufacturing workforce, model based manufacturing, non destructive testing, predictive modeling, process control, process design, process diagnostics, process planning, product design, product specifications, production control, purchasing, quality assurance, quality systems, real time inspection, reliability assessment, remanufacturing, statistical process control, supply chain, sustainable manufacturing, system simulation, tooling, worker safety, workforce assignment, workforce skills