SBIR 20.2 DEFENSE LOGISTICS AGENCY (DLA) SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM

Proposal Submission Instructions

GENERAL

The Defense Logistics Agency (DLA) implements, administers, and manages the SBIR/STTR Program as part of the Small Business Innovation Programs through DLA J68 Information Operations / Research, and Development (R&D) Division. Consult the program website at the following location: http://www.dla.mil/SmallBusiness/SmallBusinessInnovationPrograms for general information about the DLA SBIP Program and its mission. If you have any questions regarding the administration of the Program, please contact the DLA SBIR Program Manager (PM):

Denise Price email: DLASBIR2@dla.mil

TECHNICAL QUESTIONS

For questions regarding the SBIR/STTR topics during the pre-release period, contact the Topic Technical Point of Contact (TPOC) listed for each topic on the SBIR/STTR website at https://www.dodsbirsttr.mil/submissions/login prior to the close of the pre-release. To obtain answers to technical questions during the open period; submit your questions through the online SBIR/STTR Q&A System https://www.dodsbirsttr.mil/submissions/login.

For general inquiries or problems with electronic submission, contact Department of Defense (DoD) SBIR Help Desk at DoDSBIRSupport@reisystems.com or 703.214.1333 between 9:00 am and 6:00 pm ET.

PHASE I KEY DATES

20.2 BAA (Pre-release)	6 May 2020
20.2 BAA (Open period)	3 June 2020
20.2 BAA Closes	2 July 2020 (@ 8PM ET)

PROGRAM BROAD AGENCY ANNOUNCEMENT (BAA) 20.2

PHASE I GUIDELINES

DLA is committed to improving the time to award new projects. As such, all DLA Phase I topics are subject to pilot efforts intended to meet legislative goals.

A list of the topics currently eligible for proposal submission is included in the Topic Index, followed by full topic descriptions. Additional guidance is as follows:

- Proposal period of performance should not to exceed 9 months. However each topic has a specified Period of performance
- Proposal Cost Estimates are topic dependent, and each topic has a specified ceiling. However, the DLA Program Manager has the discretion to waive this limit up to $250,000. This must be pre-approved during the pre-release period. (Approval Attached in Volume V)
- Phase I proposals not to exceed the 20-page limit.
- Proposal attachments, appendices, or references are included in Volume 5.
- Notification of selection and non-selection occurs electronically via e-mail.

For detailed proposal submission guidance, refer to U.S. Department of Defense (DoD) Instructions 20.2 SBIR at: https://www.dodsbirsttr.mil/submissions/login

PHASE II GUIDELINES

Phase II eligibility is based on the following guidance:

- Phase I awardees may submit a Phase II proposal without invitation.
- Proposal period of performance not to exceed 24 months.
- Proposal Cost Estimate should not to exceed $1,000,000, however, the DLA Program Manager has the discretion to waive this limit up to $1,600,000. The Program Manager will make this determination during the course of the Phase I Project.
- Phase II proposals not to exceed the 40-page limit.
- Proposal attachments, appendices, or references are included in Volume 5.
- Cost Estimate and the Company Commercialization Report are not included in the 40-page limit.
- Commercialization Strategy Requirements:
    - Business Case highlighting benefits to the DoD/DLA.
    - Transition Strategy and Key Tasks
    - Time-Phased Transition Plan
    - Projected Transition Cost Analysis

DLA Phase II proposals must follow the detailed proposal submission guidance in the original Phase I BAA. Refer to DoD Instructions at https://sbir.defensebusiness.org/.

EVALUATION CRITERIA

Phase I see Section 6 in the OSD BAA Phase II see Section 8 in the OSD BAA

TECHNICAL AND BUSINESS ASSISTANCE (TABA)

The DLA SBIR Program does not participate in the Technical and Business Assistance (formally the Discretionary Technical Assistance Program). Contractors should not submit proposals that include Technical and Business Assistance.

DELIVERABLES / REPORTS

All DLA SBIR and STTR awardees are required to submit reports in accordance with the deliverable schedule. The recipient 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 a combination of any or all of the following deliverables:

- Plan of Action and Milestones (POAM) with sufficient detail for monthly project tracking.
- Initial Project Summary: one-page, unclassified, non-sensitive, and non-proprietary summation of the project problem statement and intended benefits (must be suitable for public viewing).
- Monthly Status Report - DLA SBIP Team will provide a format at the Post Award Conference (PAC).
- The TPOC and PM will determine a meeting schedule at the PAC. Phase I awardees can expect:
    - Mid Term Project Review (format provided at the PAC); and possibly
    - Monthly (or more frequent) Project Reviews (format provided at the PAC)
- Draft Final Report including major accomplishments, business case analysis, commercialization strategy, transition plan with timeline, and proposed path forward for Phase II.
- Final Report including major accomplishments, business case analysis, commercialization strategy and transition plan with timeline, and proposed path forward for Phase II
- Final Project Summary (one-page, unclassified, non-sensitive and non-proprietary summation of project results, non-proprietary high resolution photos or graphics intended for public viewing)
- Phase II Proposal is optional at the Phase I Awardee's discretion (as Applicable)
- Applicable Patent documentation
- Other Deliverables as defined in the Phase I Proposal

Phase II Proposals should anticipate a combination of any or all of the following deliverables:

- Plan of Action and Milestones (POAM) with sufficient detail for monthly project tracking Initial Project Summary: one-page, unclassified, non-sensitive, and non-proprietary summation of the project problem statement and intended benefits (must be suitable for public viewing)
- Monthly Status Report. A format will be provided at the PAC.
- Meeting schedule to be determined by the Technical Point of Contact (TPOC) and PM at the PAC. Phase II awardees can expect:
    - Triannual Project Review (format provided at the PAC)
    - Monthly (or more frequent) Project Reviews (format provided at the PAC)
- Draft Final Report including major accomplishments, commercialization strategy and transition plan and timeline.

- Final Report including major accomplishments, commercialization strategy and transition plan and timeline.
- Final Project Summary (one-page, unclassified, non-sensitive and non-proprietary summation of project results, non-proprietary high resolution photos or graphics intended for public viewing)
- Applicable Patent documentation.
- Other Deliverables as defined in the Phase II Proposal.

DEFENSE LOGISTICS AGENCY

DEFENSE LOGISTICS AGENCY SBIR 20.2 Topic Index

DLA202-001 TITLE: Engaging the Manufacturing Industrial Base in Support of DLA's Critical Supply Chains

RT&L FOCUS AREA(S): Nuclear, General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Air Platform, Materials, Nuclear Technology, Weapons

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with section 3.5 of the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Build Small Business Manufacturer (SBM) base qualified and ready to improve DLA product availability, provide competition for reduced lead time and cost, and address lifecycle performance issues. Through participation in DLA SBIR, SBMs will have an opportunity to collaborate with DLA Weapons System Program Managers (WSPMs) and our customer Engineering Support Activities (ESAs) to develop innovative solutions to DLA's most critical supply chain requirements. The intent of the topic is to develop SBMs who will economically produce NSNs with historically low demand utilizing innovative technologies resulting in reduced lead time and cost with enhanced life cycle performance. In the end, the SBM benefits from the experience by qualifying as a source of supply as well as from the business relationships and experience to further expand their product lines and readiness to fulfill DLA procurement requirements.

DESCRIPTION: Competitive applicants will have reviewed the parts list provided on DLA Small Business Innovation Program (SBIP) site, (Reference 4) as well as the technical data in the cFolders of DLA DiBBs, (Reference 3). Proposals can evolve in one of four ways depending on the availability of technical data and NSNs for reverse engineering as follows. Information on competitive status, RPPOB, and tech data availability will be provided on the website, Reference 4:

a. Fully Competitive (1G) NSNs where a full technical data package is available in cFolders. The SBM proposal should reflect timeline, statement of work and costs associated with the manufacturing and qualification of a representative article.
b. Other than 1G NSNs where a full Technical Data Package (TDP) is available in cFolders. The SBM proposal should reflect timeline, statement of work, and costs associated with producing a Source Approval Request (SAR). The scope and procedures associated with development of a SAR package are provided in Reference 1.
c. Repair Parts Purchase or Borrow (RPPOB) is for other than 1G NSNs where partial or no technical data is available in cFolders. NSNs can be procured or borrowed through this program for the purposes of reverse engineering. The instructions for RPPOB can be found on the websites, Reference 5. The SBM proposal should reflect timeline, statement of work and costs associated with the procuring the part and reverse engineering of the NSN. Depending on complexity, producing both the TDP and SAR package may be included in Phase I.
d. Reverse Engineering (RE) without RPPOB is when the NSN will be provided as Government Furnished Material (GFM) if available from the ESA or one of our Service customers. In this case, contact the TPOC to discuss the availability of the NSN prior to starting the proposal. The SBM proposal should reflect timeline, statement of work and costs associated with the reverse engineering of the NSN and depending on complexity producing a TDP and SAR package in Phase I.

Specific parts may require minor deviations in the process dependent on the Engineering Support Activity (ESA) preferences and requirements. Those deviations will be addressed post award.

Participating small businesses must have an organic manufacturing capability and a Commercial and Government Entity (CAGE) code and be Joint Certification Program (JCP) certified in order to access technical data if available.

Refer to "link 2" below for further information on JCP certification. Additionally, small businesses will need to create a DLA's Internet Bid Board System (DIBBS) account to view all data and requirements in C Folders.

Refer to "links 3 and 4" below for further information on DIBBS and C Folders. All available documents and drawings are located in the C Folder location "SBIR202A". If the data is incomplete, or not available, the effort will require reverse engineering.

PHASE I: The goal of phase I is for the SBM to qualify as a source of supply for DLA NSNs to improve DLA product availability, provide competition for reduced lead time and cost, and address lifecycle performance issues. In this phase, manufacturers will request TDP/SAR approval from the applicable Engineering Support Activity (ESA), if required, for the NSNs. At the Post Award Conference, the awardee will have the opportunity to collaborate with program, weapon system, and/or engineering experts on the technical execution and statement of work provided in their proposal. There are exceptions for more complex parts and the proposal should provide the rationale.

ITAR: The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), which controls the export and import of defense-related material and services. Offerors must disclose any proposed use of foreign nationals, their country of origin, and what tasks each would accomplish in the statement of work in accordance with section 5.4.c.(8) of the Announcement.
JOINT CERTIFICATION PROGRAM (JCP): Applicants will be required to obtain JCP Certification in order to view technical data. The lead time to complete JCP certification may be significant. Do this first if you do not already have a JCP certificate.

MULTIPLE NATIONAL STOCK NUMBERS (NSNs) PER PROPOSAL: Applicant may submit multiple NSNs on an individual proposal. However, do not combine multiple parts on the same proposal from multiple weapon systems. The information on NSNs and corresponding weapons system can be found DLA Small Business Innovation Program (SBIP) site link, Reference 4.

PERIOD OF PERFORMANCE: The phase one period of performance is not to exceed 9 months. However, the project schedule should plan to complete the TDP and SAR in the first six months. The last three months needs to be reserved for lead time for TDP and SAR approval and or representative article manufacturing and qualification.

PRE-RELEASE COMMUNICATION: During the pre-release period (6 May 2020 – 3 June 2020) it is highly recommended that applicants communicate with the Technical Points of Contacts (TPOCs) provided in this topic. Best method of scheduling the dialogue is via e-mail.

PROJECT COST: Not to eceed $100k without TPOC Approval. Discuss during Pre-Release period
TABA: TABA in not authorized for this topic.

PHASE II: Phase II – 24 Months $1.6M
The Phase II proposal is optional for the Phase I awardee. Phase II selections are based on Phase I performance, SBM innovation and engineering capability and the availability of appropriate

requirements. Typically t goal of Phase II is to expand the number of NSNs and/or to build capability to expand capacity to better fulfill DLA requirements.

PHASE III DUAL USE APPLICATIONS: No specific funding is associated with Phase III. Progress made in PHASE I and PHASE II should result in the manufacturer's qualification as an approved source of supply enabling participation in future DLA procurement actions. Phase III for this project is defined by relevant procurement awards.

COMMERCIALIZATION: The SBM will pursue commercialization of the various technologies and processes developed in prior phases through participation in future DLA procurement actions on items identified but not limited to this BAA.

REFERENCES:
1. DLA Aviation SAR Package instructions. DLA Small Business Resources: http://www.dla.mil/Aviation/Business/IndustryResources/SBO.aspx
2. JCP Certification: https://public.logisticsinformationservice.dla.mil/PublicHome/jcp
3. Access the web address for DIBBS at https://www.dibbs.bsm.dla.mil , then select the "Tech Data" Tab and Log into c-Folders. This requires an additional password. Filter for solicitation "SBIR202A"
4. DLA Small Business Innovation Programs web site: http://www.dla.mil/SmallBusiness/SmallBusinessInnovationPrograms
5. DLA Aviation Repair Parts Purchase or Borrow (RPPOB) Program: https://www.dla.mil/Aviation/Offers/Services/AviationEngineering/Engineering/ValueEng.aspx

KEYWORDS: Nuclear Enterprise Support (NESO), Source Approval, Reverse Engineering

TPOC-1: Rhonda Blum
Phone: 614-692-5167
Email: rhonda.blum@dla.mil

TPOC-2: Denise Price
Phone: 571-767-0111
Email: denise.price@dla.mil

DLA202-002 TITLE: Secure Computing Autonomous Network (SCAN)

RT&L FOCUS AREA(S): Cybersecurity
TECHNOLOGY AREA(S): Information Systems

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with section 3.5 of the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Develop, demonstrate, and field a private distributed platform that can continuously identify, assess, report, and mitigate threats, vulnerabilities, and disruptions to DLA's network-connected devices. The platform should be scalable with low bandwidth and compute resource requirements. It should also be capable of running asynchronously within isolated environments outside of network connectivity.

DESCRIPTION: DLA requires a cyber-detection platform that comprehensively addresses supply chain security challenges, evolves as new threats emerge, and endures the test of time to provide uninterrupted support to the warfighter.

The platform should provide distributed command-and-control of cyber threats, including the ability to rapidly stop effects and restore normal operations. The platform must not harm the underlying network infrastructure or host systems. The platform architecture should be system-agnostic and provide distributed aggregation and storage of all relevant cybersecurity data, allowing for real-time analysis of any network.

The platform should passively monitor system data for problem trends and behaviors, and then issue warnings to the operators of more significant systemic faults. The platform should automatically update its risk index to address emerging threats. The platform should classify device-related errors, and have behavior-based or anomaly-based detection of threats that may otherwise go undetected.

In all cases, the platform may be required to function under a variety of scenarios within isolated environments that do not support robust learning models. This lack of connectivity to models makes the common approach to cyber detection less effective. An alternative approach is to focus on coupling machine learning (ML) with distributed ledger technologies (DLT) to provide indexed integrity of system interactions.

The ability to interface with simulation environments is also of interest.

PHASE I: Phase I – 6 Months $100K
The below actions would be required in order to successfully accomplish Phase I:

- At a minimum, a workable concept for a Secure Computing Autonomous Network (SCAN) prototype that addresses the basic requirements of the stated objective above.
- Develop a distributed platform that can conduct automated scans of various data streams to learn, predict, and mitigate future disturbances, abnormal trends, and problems.
- Develop and prove feasibility of a Concept of Operation (CONOP) for the use of the platform. Develop a preliminary design to implement the CONOP.

- Address all viable overall platform design options with respective specifications on software modularity, hardware requirements for computational power and capacity, system/sensor agnosticism, and dissemination of information products requested by the user community.

PHASE II: Phase II – 24 Months $1.6M
Update the CONOP and develop the detailed design and prototype for the cyber-threat mitigation platform. Detail how the platform enables tactical analysts to detect and mitigate threats and restore operations. Demonstrate all major prototype features in a representative environment. The environment should also include hybrid cloud scenarios where the platform must maintain a shared repository across system enclaves for tactical users to pull and share products, as required.

Develop a transition plan that identifies the scope, effort, and resources required to extend the prototype platform to additional analysis methods or data streams; and development of an out-of-network capability for offline threat detection.

Deliver a Data Disclosure Package (DDP) that includes at a minimum: form, fit, function, operation, maintenance, installation and training data, procedures and information plus the data necessary or related to overall physical, functional, interface, and performance characteristics; corrections or changes to Government-furnished data or software; and data or software that the Government has previously received unlimited rights to or that is otherwise lawfully available to the Government.

PHASE III DUAL USE APPLICATIONS: Work with the DLA to implement the platform as described in the Phase II transition plan at a designated DLA lab. Participate in a Preliminary Design Review (PDR) event. Install on a DLA-designated staging environment for system performance testing.

Ensure sufficient cybersecurity and software assurance requirements are met in accordance with DFARS Clause 252.204–7012, NIST Special Publication 800–171, NIST Special Publication 800–53, and NIST Special Publication 800–37. All RMF requirements must be met to enable platform deployment on DLA systems.

Provide an updated DDP that must include at a minimum: any updates to the Phase II DDP, installation, and maintenance procedures; demonstrated compliance with RMF requirements and qualification testing results; and authority to operate certifications for DLA system use.

Prior to fielding, provide onsite training of the platform design, operation, maintenance, and interfaces. Provide documentation and support materials to transfer the platform to DLA SMEs.

PHASE III DUAL USE APPLICATIONS: This platform has dual-use commercial or military applications in any complex system that either uses sensors to detect abnormalities or synthesizes multiple unrelated data streams for failure analysis or fault localization of its underlying sub-systems.

REFERENCES:
1. DoD Enterprise DevSecOps Reference Design, August 2019.
https://dodcio.defense.gov/Portals/0/Documents/DoD%20Enterprise%20DevSecOps%20Reference%20Design%20v1.0_Public%20Release.pdf?ver=2019–09–26–115824–583
2. It Takes an Average 38 Days to Patch a Vulnerability, Kelly Sheridan, Dark Reading, August 2018.
https://www.darkreading.com/cloud/it-takes-an-average–38-days-to-patch-a-vulnerability/d/d-id/1332638
3. Cyber-security Framework for Multi-Cloud Environment, Taslet Security, September 2018.
https://medium.com/taslet-security/cyber-security-framework-for-multi-cloud-environment-e7d35fd32bd6

4. Zero Trust: Beyond Access Controls, Rob MacDonald, HelpNetSecurity, January 2020. https://www.helpnetsecurity.com/2020/01/23/zero-trust-approach-cybersecurity/

KEYWORDS: Anomaly Detection, Behavior-Based Detection, Block chain, Classification, Computer Network Traffic Analysis, Cryptography, Cybersecurity, Data Analysis, Data Provenance, Decentralized Logging, Logistics Platforms, Machine Learning, Networking, Network Intrusion Detection, Pattern Matching, Supply Chain Risk Management, SCRM, System Of Systems

TPOC-1: John Luvera
Phone: 571-767-0404
Email: giovanni.luvera@dla.mil

TPOC-2: Denise Price
Phone: 571-767-0111
Email: denise.price@dla.mil

DLA202-003 TITLE: Pharmaceutical Supply Chain Vulnerability

RT&L FOCUS AREA(S): Biotechnology, & General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Bio Medical

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with section 3.5 of the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Develop a reliable tool to determine the country of origin of active ingredients, raw materials, excipients, and final products of pharmaceutical used in the United States. This tool will be used to analyze and mitigate vulnerabilities that may pose a security risk to the United States.

DESCRIPTION: Defense Logistics Agency (DLA) Troop Support (TS) Customer Pharmacy Operations Center (CPOC) topic of interest is research focused on the supply chain of medications for the Department of Defense. The security of the pharmaceutical supply chain directly influences war and peacetime healthcare of approximately 2.2 million warfighters, their families, and retirees. A verifiable reference to identify the country of origin for active pharmaceutical ingredients (API) is not readily available to the Customer Pharmacy Operations Center (CPOC). The production of quality API from a sustainable and secure source is a factor in the availability of medications. Another factor, the consolidation of generic manufacturers and a move to a global supply chain have decreased the number of facilities capable of manufacturing quality pharmaceuticals; thus, reducing capacity and quantities of pharmaceutical produced from diversified sources. These vulnerabilities are a concern for the safety and security of the United States. There are reports that a few nations may control the production of 80% to 90% of the raw materials used in pharmaceuticals. These countries have complex political and contentious trade relationships with the United States, which could threaten the pharmaceutical supply chain in the future. Adding to the complexity of the situation, pharmaceutical manufacturers consider the source of their API/final product manufacture to be trade secrets and not adequately tracked by the Food and Drug Administration (FDA) for the purposes of DoD pharmaceutical acquisition.

PHASE I: Phase I – 6 Months $100K
The research and development goals of Phase I should provide a comprehensive analysis of the pharmaceutical supply chain, from creation to completion, in real time. This analysis should identify and track the product from sourcing of the API until the final product is assigned a National Drug Code (NDC). The expectation of Phase I is to develop a concise set of data points that can identify the country of origin for key raw materials, excipients used to synthesize the medicines, and the site of final formulation. This data will be the foundation for the prototype tool developed in Phase II.

PHASE II: Phase II – 24 Months $1.6M
Based on the research and development results, this information will be incorporated into daily operations and strategic planning to adequately analyze and formulate mitigation strategies for potential security risks. The intent is to have a tool that easily and quickly maps the supply chain of raw materials to identify vulnerabilities throughout the pharmaceutical supply chain. In addition, sourcing and flow of materials should allow educated predictions to determine the risk to the supply chain during a time of high demand or in response to a contingency, such as a military conflict, outbreak, earthquake, hurricane, or any other natural disaster. Note, this data highly correlates with Trade Agreements Act (TAA)

compliance, but its applications would extend beyond simply tracking the Country of Origin (COO) for the purposes of the TAA compliance.

The expectation of the Phase II effort is to have a Prototype tool that easily and quickly maps the supply chain of raw materials to identify vulnerabilities throughout the pharmaceutical supply chain.

PHASE III DUAL USE APPLICATIONS: The successful offeror should expect to maintain this tool in sustainment for 5 years. This will occur in the form of a follow-on Phase III contract initiated by the Customer Pharmacy Ops Center (CPOC).

COMMERCIALIZATION: The progression of information would stream throughout the whole of government based on memorandum of understandings and relationships with the DLA Troop Support. Examples, but not limited to, are Force Health Protection, Readiness, and the Defense Health Agency.

REFERENCES:
1. Federal Acquisition Regulation (FAR) 52.225-5, Trade Agreements.
https://www.acquisition.gov/content/52225-5-trade-agreements#i1053648
2. Defense Health Agency Procedural Instruction Number 6025.31. December 20, 2019.
3. Defense Logistics Agency: DLA Troop Support Medical.
https://www.dla.mil/TroopSupport/Medical.aspx

KEYWORDS: Pharmaceuticals, API, active pharmaceutical ingredients, Country of Origin, Trade Agreements Act, TAA, Security

TPOC-1: Matt Cowen
Phone: 215-737-9176
Email: matt.cowan@dla.mil

TPOC-2: Denise Price
Phone: 571-767-0111
Email: denise.price@dla.mil

DLA202-004 TITLE: Deployable Assembly / Kitting Platform for Unitized Group Rations

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Materials

OBJECTIVE: Develop and/or promote solutions for an assembly/kitting system that is self-contained and can be quickly deployed and operational with a short period of time.

DESCRIPTION: Defense Logistics Agency (DLA) Troop Support (TS) Subsistence topic of interest is research focused on identifying and/or developing a mobile assembly platform to assemble Unitized Group Rations (UGRs) or other kits to supplement or temporarily replace current production at other fixed locations. This research project shall involve:

- Establishing an equipment list to execute the complete assembly function; i.e., carton sealers, roller conveyors, etc.
- Developing the most efficient assembly line configuration to maximize production output
- Researching the container size necessary to store and ship the equipment
- A power system that can either run on its own or use an outside generator
- A loading and unloading system to assist with moving the equipment into and out of the storage/shipping container
- Establishing a maintenance cycle for the equipment
- Ensuring that equipment can be off-loaded and the kitting process started within six hours.

PHASE I: Phase I – 6 Months $100K
The research and development goals of Phase I are to provide eligible Small Business firms the opportunity to successfully demonstrate the viability of a deployable assembly/kitting platform for UGRs. A Concept of Operations (CONOPs) will be created by the vendor for the storage, deployment, and assembly of UGRs. A sample list of UGR components can be found at the following link: https://www.dla.mil/TroopSupport/Subsistence/Operational-rations/ugrhs

The vendor will not be responsible for procuring component items. The CONOPs for this project should include, but not be limited to the lifecycle of the deployable platform; from establishing the equipment list and researching and identifying storage/shipping containers to the off-loading of equipment and the set-up of the assembly line within six hours. The deliverables for this project will include a final report to include a cost breakdown for this initiative.

PHASE II: Phase II – 24 Months $1.6M
Based on the research and development results and the CONOPs developed during PHASE I, the research and development goals of PHASE II will emphasize the form, function, and assembly of the UGRs. The CONOPs will take place within CONUS as mutually agreed upon between TS Subsistence and the vendor. As of now, the vendor will not be required to purchase component items for Phase II.

PHASE III DUAL USE APPLICATIONS: Based on the research and development results and the CONOPs developed during PHASE I, the research and development goals of PHASE II will emphasize the form, function, and assembly of the UGRs. The CONOPs will take place within CONUS as mutually agreed upon between TS Subsistence and the vendor. As of now, the vendor will not be required to purchase component items for Phase II.

COMMERCIALIZATION: The vendor will pursue commercialization of the various processes and technologies associated with the mobile platform assembly of UGRs in prior phases as well as potential commercial sales of any parts or other items.

REFERENCES:
1. DoD Manual1338.10, DoD Food Service Manual;
http://www.dtic.mil/whs/directives/corres/pdf/133810m.pdf
2. TB MED 530/NAVMED P-5010-1/AFMAN 48-147_IP, "Tri-Service Food Code," October 7, 2013;
http://www.med.navy.mil/directives/Pub/5010-1.pdf
3. Defense Logistics Agency: DLA Troop Support Subsistence.
https://www.dla.mil/TroopSupport/Subsistence.aspx

KEYWORDS: Assembly, Kitting, Unitized Group Rations

TPOC-1: Gloria Edwards
Phone: 703-767-1674
Email: Gloria.edwards@dla.mil

TPOC-2: Denise Price
Phone: 571-767-0112
Email: denise.price@dla.mil

DLA202-005 TITLE: Automation-Robotics in Dining Facilities

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Materials

OBJECTIVE: Develop and/or promote solutions for automation within military dining facilities. Conduct research on equipment capable of assisting with the preparation, processing, and/or cooking of food. This research seeks to identify and test solutions to improve efficiency and will permit the Services to better allocate labor resources within military dining facilities.

DESCRIPTION: Defense Logistics Agency (DLA) Troop Support (TS) Subsistence topic of interest is research focused on the use of automation-robotics in dining facilities. This research shall cover the areas involving the preparation, processing, and cooking of food. Specific areas of interest include:

- Identify equipment which can be utilized to perform back-of-the-house tasks that prepare food for service
- Once identified, provide the characteristics/capabilities of the equipment and any locations where the equipment is being used.
- If your firm is currently developing this type of equipment, provide the function the equipment will be executing and any timeframe for commercial testing and production.

PHASE I: Phase I – 6 Months $100K
The research and development goals of Phase I are to provide Small Business eligible Research and Development firms the opportunity to successfully demonstrate how automation can be utilized in military dining facilities to reduce costs and increase efficiency. A concept of operations (CONOPs) or a process will be created by the vendor to show how the equipment can be utilized within the dining facilities. The deliverables for this project will include a final report to include a cost breakdown of the equipment to include, but not necessarily limited to, product cost, shipping, installation, training, parts kits, etc.

PHASE II: Phase II – 24 Months $1.6M
Based on the research and development results and the CONOPs developed during PHASE I, the research and development goals of PHASE II will emphasize the actual use of the equipment within a military dining facility at a location mutually agreed upon between DLA Troop Support Subsistence and the vendor.

PHASE III DUAL USE APPLICATIONS: Dual Use Applications: At this time, no specific funding is associated with PHASE III. Progress documented from PHASE I and PHASE II should result in a vendor's qualification as an approved source for food re-utilization enabling participation in future procurements.

COMMERCIALIZATION: The vendor will pursue commercialization of the various processes and technologies associated with the re-utilization of expired food products as well as petroleum-based packaging developed in prior phases as well as potential commercial sales of any parts or other items.

REFERENCES:
1. DoD Manual1338.10, DoD Food Service Manual;
http://www.dtic.mil/whs/directives/corres/pdf/133810m.pdf
2. TB MED 530/NAVMED P-5010-1/AFMAN 48-147_IP, "Tri-Service Food Code," October 7, 2013;
http://www.med.navy.mil/directives/Pub/5010-1.pdf
3. 3. Defense Logistics Agency: DLA Troop Support Subsistence.
https://www.dla.mil/TroopSupport/Subsistence.aspx

KEYWORDS: Automation, Robotics, Military Dining Facilities

TPOC-1: Gloria Edwards
Phone: 703-767-1675
Email: Gloria.edwards@dla.mil

TPOC-2: Denise Price
Phone: 571-767-0113
Email: denise.price@dla.mil

DLA202-006 TITLE: Re-Purposing of Expired Food Items and Petroleum-Based Packaging for Disposal

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Materials

OBJECTIVE: Develop and/or promote solutions to the disposal or destruction of expired food products and packaging. This research seeks to identify and test environmentally safe solutions to re-purpose these items into usable products thereby eliminating/saving disposal costs.

DESCRIPTION: Defense Logistics Agency (DLA) Troop Support (TS) Subsistence topic of interest is research focused on the re-purposing of expired food products in the Continental United States (CONUS) as well as Outside the Continental United States (OCONUS) where waste reduction and disposal costs in certain countries are becoming a major problem. This research project shall involve commercial industry practices that:

- Support environmentally safe disposal of expired food items
- Increases the re-purposing of food items for other uses
- Reduces the US environmental footprint in OCONUS by decreasing greenhouse gases that arise from food waste buried in landfills
- Examines the petroleum-based packaging accompanying food that is being disposed of in landfills or other methods for re-purposing into other usable products. Additionally, identify equipment that removes and processes the packaging from these products.
- Identifies additional options of dealing with food waste and packaging
- Identifies equipment that not only can re-purpose food products for environmentally safe use but also can remove packaging to potentially save labor costs.

PHASE I: Phase I – 6 Months $100K
The research and development goals of Phase I are to provide Small Business eligible Research and Development firms the opportunity to successfully demonstrate how expired food can be processed in a way that is safe for the environment and reduces costs to DLA. A Concept of Operations (CONOPs) or process will be created by the vendor for the re-utilization of expired food products. The CONOPs or process should include how the product will be either disposed of environmentally or re-purposed for another use that is also sensitive to the environment. In addition to the food products, CONOPs should include removing and recycling packaging so that disposal in landfills is avoided. The deliverables for this project will include a final report to include a cost breakdown of courses of action

PHASE II: Phase II – 24 Months $1.6M
Based on the research and development results and the CONOPs developed during PHASE I, the research and development goals of PHASE II will emphasize the execution of the disposal and/or re-utilization in accordance with the CONOPs. The CONOPs will be in place within CONUS with an emphasis on OCONUS locations as mutually agreed upon between TS Subsistence and the vendor.

PHASE III DUAL USE APPLICATIONS: Dual Use Applications: At this time, no specific funding is associated with PHASE III. Progress documented from PHASE I and PHASE II should result in a vendor's qualification as an approved source for food re-utilization enabling participation in future procurements.

COMMERCIALIZATION: The vendor will pursue commercialization of the various processes and technologies associated with the re-utilization of expired food products as well as petroleum-based packaging developed in prior phases as well as potential commercial sales of any parts or other items.

REFERENCES:
1. DoD Manual1338.10, DoD Food Service Manual;
http://www.dtic.mil/whs/directives/corres/pdf/133810m.pdf
2. TB MED 530/NAVMED P-5010-1/AFMAN 48-147_IP, "Tri-Service Food Code," October 7, 2013;
http://www.med.navy.mil/directives/Pub/5010-1.pdf
3. Defense Logistics Agency: DLA Troop Support Subsistence.
https://www.dla.mil/TroopSupport/Subsistence.aspx

KEYWORDS: Re-engineering, Food re-use, Food Packaging

TPOC-1: Gloria Edwards
Phone: 703-767-1676
Email: Gloria.edwards@dla.mil

TPOC-2: Denise Price
Phone: 571-767-0114
Email: denise.price@dla.mil

DLA202-007 TITLE: Enhancing the E-Waste Recycling technology to recover Rare Earths and Precious Metals from Industrial and Defense Waste Streams

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Materials

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 (TRL) 6 or less, but greater than TRL 3 to receive funding consideration.

TRL 3. (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept)
TRL 6. (System/Subsystem Model or Prototype Demonstration in a Relevant Environment)

DESCRIPTION: DLA R&D is looking for a domestic capability that demonstrates a new novel Rare Earths and Precious Metal recovery and recycling technology from defense or industrial waste feedstock. Various rare earths and precious metals are used in Defense weapon systems, and there is limited domestic production of these materials and therefore a risk of foreign reliance. Developing an economically viable, environmentally friendly process for enhancing the recycling of electronic waste scrap from the existing waste feedstock could facilitate the establishment of a viable, competitive domestic supply chain.

R&D tasks include identifying feedstock sources in the existing domestic supply chain and developing processes for recycling the electronic waste that demonstrates a significant cost advantage versus standard processing. The process should be amenable to the scale of operation required in electronic waste recycling, and will improve the economics of recovering the rare earths and precious metals for electronic reuse, rather than recovery as downgraded materials for lower value uses.

PHASE I: Phase I – 6 Months $100K
Determine, insofar as possible, the scientific, technical, and commercial feasibility of the concept. 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: Phase II – 24 Months $1.6M
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://seas.yale.edu/news-events/news/recycling-rare-earth-metals-e-waste
2. https://www.thebalancesmb.com/electronic-devices-source-of-metals-for-recyclers-2877986

KEYWORDS:

TPOC-1: Kevin Jones
Phone: 571-767-1909
Email: Kevin.J.Jones@dla.mil

TPOC-2: Vaibhav Jain
Phone: 571-767-8839
Email: Jain.vaibhav@dla.mil

DLA202-008 TITLE: Cerium-Aluminum (Ce-Al) alloys for military casting

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Materials

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 (TRL) 6 or less, but greater than TRL 3 to receive funding consideration.

TRL 3. (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept)
TRL 6. (System/Subsystem Model or Prototype Demonstration in a Relevant Environment)

DESCRIPTION: The Department of Defense (DoD) is interested in implementing advanced Cerium-Aluminum alloy castings in defense applications. Cerium-Aluminum (Ce-Al) alloys are lightweight, corrosion-resistant, and exceptionally stable at high temperatures. Additionally, Ce-Al show potential for casting near net shapes without the need for costly heat treatment. For Phase I, DoD is seeking a small metallurgical or foundry company to work with an existing DoD contractor of their choosing to redesign and demonstrate a Cr-Al casting as a substitute for traditional aluminum or magnesium alloy castings. The potential phase II effort would be to qualify the demonstrated Ce-Al component into a defense system. DoD requires that the source of cerium for this project be mined from a National Technology and Industrial Base (NTIB) source. The NTIB is defined by U.S. law under 10 U.S.C. 2500 as the persons and organizations that are engaged in research, development, production, integration, services, or information technology activities conducted within the United States, the United Kingdom of Great Britain and Northern Ireland, Australia, and Canada.

PHASE I: Phase I – 6 Months $100K
Determine, insofar as possible, the scientific, technical, and commercial feasibility of the concept. 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: Phase II – 24 Months $1.6M
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.intechopen.com/books/aluminium-alloys-and-composites/composites-and-alloys-based-on-the-al-ce-system
2. https://pubs.rsc.org/en/content/articlelanding/2017/MH/C7MH00391A#!divAbstract

KEYWORDS:

TPOC-1: Brian Gabriel
Phone: 571-372-3662
Email: brian.m.gabriel4.civ@mail.mil

TPOC-2: Vaibhav Jain
Phone: 571-767-8840
Email: Jain.vaibhav@dla.mil

DLA202-009 TITLE: Commercial Applications for Recycled Thermal Barrier Coatings

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Materials

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 (TRL) 6 or less, but greater than TRL 3 to receive funding consideration.

TRL 3. (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept)
TRL 6. (System/Subsystem Model or Prototype Demonstration in a Relevant Environment)

DESCRIPTION: The Department of Defense (DoD) is looking for a domestic capability that demonstrates the ability to recycle waste from thermal barrier coatings and find commercial applications of the recycled material. Thermal barrier coating (TBC) and environmental barrier coating (EBC) materials are among the most critical advanced materials utilized in aviation applications. Modern commercial and military aircraft rely on these materials to provide thermal protection for aircraft engine components, allowing the engines to operate at higher temperatures and increased efficiencies while also protecting against the damaging effects of various environmental factors present during operation. Many of the most prevalent TBCs and EBCs presently employed in military aircraft engine coatings contain rare earth zirconate and silicate materials. However, many of the rare earth and zirconium raw materials necessary for the production of these TBC and EBC materials are not readily available from domestic sources. The need to maintain secure supply chains for these raw materials creates an imperative for alternate raw materials sources to be developed. Developing an economically viable process for enhancing the production of existing recycling processes could facilitate the establishment of a viable, competitive domestic supply chain of TBC and EBC coatings for the aerospace industry. Economical reclamation and reuse of thermal barrier coating waste could result in improved supply security and lower costs of these crucial raw material.

PHASE I: Phase I – 6 Months $100K
Determine, insofar as possible, the scientific, technical, and commercial feasibility of the concept. 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: Phase II – 24 Months $1.6M
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:

TPOC-1: Vaibhav Jain
Phone: 571-767-8841
Email: Jain.vaibhav@dla.mil

DLA202-010 TITLE: Optimizing Lithium-Ion (Li-Ion) Battery Recycling Technology to Recover Cobalt and Nickel from Industrial and Defense Waste Streams

RT&L FOCUS AREA(S): General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Materials

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 (TRL) 6 or less, but greater than TRL 3 to receive funding consideration.

TRL 3. (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept)
TRL 6. (System/Subsystem Model or Prototype Demonstration in a Relevant Environment)

DESCRIPTION: DLA R&D is looking for a domestic capability that demonstrates a new innovative lithium-ion battery recycling technology, for recovering nickel and cobalt from recovered batteries, which stem from defense or industrial waste streams. Li-Ion batteries are used in Defense weapon systems, these batteries contain cobalt and nickel; there is limited domestic production of these materials and therefore a risk of foreign reliance. Developing an economically viable, environmentally friendly process for enhancing the recycling of Li-Ion batteries from the existing waste feedstock could facilitate the establishment of a viable, competitive domestic supply chain.

R&D tasks include identifying feedstock sources in the existing domestic supply chain and developing processes for recycling the Li-Ion batteries, that demonstrates a significant cost advantage versus standard processing. The process should be amenable to the scale of operation required in Li-Ion battery recycling, and will improve the economics of recovering the Nickel and Cobalt for DoD reuse, rather than recovery as downgraded materials for lower value uses.

PHASE I: Phase I – 6 Months $100K
Determine, insofar as possible, the scientific, technical, and commercial feasibility of the concept. 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: Phase II – 24 Months $1.6M
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.nickelinstitute.org/about-nickel/nickel-in-batteries/
2. https://vtechworks.lib.vt.edu/handle/10919/92800

KEYWORDS:

TPOC-1: Kevin Jones
Phone: 571-767-1909
Email: Kevin.J.Jones@dla.mil

TPOC-2: Vaibhav Jain
Phone: 571-767-8842
Email: Jain.vaibhav@dla.mil

DLA202-011 TITLE: Novel Approaches for Detection of and Protection from Emerging Viral Pandemics

RT&L FOCUS AREA(S): Biotechnology, & General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Bio Medical

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with section 3.5 of the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Develop and promote novel approaches for the detection, identification, and differentiation of viral pathogens, contamination prevention, and protection from viral infections, such as COVID-19.

DESCRIPTION: Defense Logistics Agency (DLA) Research and Development topics of interest are research focused on complex catastrophic pandemic events, such as COVID-19. This requirement consists of providing materials that block transmission of viral pathogens on various surfaces such as clothing, Meals-Ready-To-Eat (MREs), bottled water, parts, and other mediums of transmission of viral pathogens. Solutions need to be easy to use, rapidly deployable, with low logistics burden for military logisticians, clinics, medical treatment facilities, and forward deployed military and civilian personnel.

PHASE I: Phase I – 6 Months $100K
The research and development goals of Phase I are to provide Small Business eligible Research and Development firms the opportunity to demonstrate a scalable, adaptable, rapid response platform capable of producing methods for the detection, identification, differentiation of viral pathogens, and protection from infections from viral pandemics. Phase I requires a written diagnostic/therapeutic model with preliminary results on the viability of the proposed solution.

PHASE II: Phase II – 24 Months $1.6M
Based on the preliminary findings from Phase I, and in coordination with DLA and industry manufacturers, the Phase II expectation is to develop a prototype solution. This solution must be easy to use with minimal burden on logistics and must demonstrate the effective prevention of transmission of viral pathogens through contact, particularly from contaminated surfaces. The envisioned platform would cut response time significantly in order to stay within the window of relevance for containing contamination, preventing infection, and mitigating an outbreak.

PHASE III DUAL USE APPLICATIONS: PHASE III: Dual Use Applications: At this point, no specific funding is associated with Phase III. Progress made in Phase I and Phase II should result in the use of domestic and international health care markets for in vitro diagnostics and prophylactic uses. COMMERCIALIZATION: The manufacturer will pursue commercialization of various identification of, protection, and mitigation from viral pathogens, such as COVID-19 and develop potential commercial sales of manufactured chemical materials.

KEYWORDS: Covid-19, infections disease, in vitro diagnostic, point of care, biological warfare agent, biomarkers, anti-viral, MERS, SARS, coronavirus

TPOC-1: Dr. Imes Chiu
Phone: 571-527-8776
Email: imes.chiu@dla.mil

TPOC-2: Vaibhav Jain
Phone: 571-767-8842
Email: Jain.vaibhav@dla.mil

DLA202-012 TITLE: Learning From the Coronavirus: An Economic Assessment on the Effects of Pandemics on the Supply and Demand for Strategic & Critical Materials in the Defense Industrial Base.

RT&L FOCUS AREA(S): Biotechnology, & General Warfighting Requirements (GWR)
TECHNOLOGY AREA(S): Bio Medical

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 (TRL) 6 or less, but greater than TRL 3 to receive funding consideration.

TRL 3. (Analytical and Experimental Critical Function and/or Characteristic Proof of Concept)
TRL 6. (System/Subsystem Model or Prototype Demonstration in a Relevant Environment)

DESCRIPTION: The Department of Defense (DoD) is interested in funding a retrospective economic assessment on the effects of pandemics with special emphasis on the coronavirus outbreak on raw material markets and active pharmaceutical ingredients (API) for the Defense Industrial base Department of Defense respectively. The epidemic's uncertainty is expected to abruptly disrupt supply and demand across the defense industrial base. U.S. business activity in February fell to its lowest level in more than six years due to the epidemic. Further, Economists have struggled to project the full ramifications of this epidemic due to the uncertainty of consumer and firm behavior. For Phase I, the Department is seeking a US based company to design an economic study that will provide a full literature review on pandemics and their corresponding economic effects in the Defense Industrial Base where appropriate, characterize challenges and gaps of existing assessments, design a methodological approach to the aforementioned objective, make a set of recommendations within the current legal framework to mitigate these effects, and report findings.

PHASE I: Phase I – 6 Months $100K
Determine, insofar as possible, the economic ramifications of pandemics on the Defense Industrial base and the Department of Defense, Undertake a literature review, summarize relevant information, identify a methodology and area of potential contribution, identify data sources and quantitative approach.

PHASE II: Phase II – 24 Months $1.6M
Develop and identify data sources for the applicable quantitative approach identified in Phase I. Compare conclusions to identified literature in phase I. Provide assessment on the effectiveness of economic policy initiatives on maintaining the DIB and DoD and make a set of recommendations to the Department on mitigation strategies within current legal framework as codified in the code of federal regulations (CFR). Present research to peers and other economic associations.

PHASE III DUAL USE APPLICATIONS: Develop a repeatable quantitative approach for the Department of Defense to identify the effects that pandemics have on the Defense Industrial base and the Department of Defense. Demonstrate 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, and performance.

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4. https://hbr.org/2020/02/how-coronavirus-could-impact-the-global-supply-chain-by-mid-march

KEYWORDS:

TPOC-1: Braden Harker
Phone: 571- 767-6478
Email: braden.harker@dla.mil

TPOC-2: Vaibhav Jain
Phone: 571-767-8842
Email: Jain.vaibhav@dla.mil