

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE 1 OF 10 PAGES	
2. AMENDMENT/MODIFICATION NO. 15		3. EFFECTIVE DATE 02/28/2024		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO. (If applicable)	
6. ISSUED BY DLA Contracting Services Office - Philadelphia 700 Robbins Ave. Philadelphia, PA 19111 Attn: R&D CONTRACTING TEAM		CODE SP4701		7. ADMINISTERED BY (If other than Item 6) SAME AS BLOCK 6		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)				☒ (X) ☒ BAA0001-22 9B. DATED (SEE ITEM 11) 06/13/2022 10A. MODIFICATION OF CONTRACT/ORDER NO. ☐ 10B. DATED (SEE ITEM 13)		9A. AMENDMENT OF SOLICITATION NO.	
CODE		FACILITY CODE					

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

**13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS.
IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.**

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
☐	
☐	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
☐	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
☐	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

See Continuation Pages.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR		16B. UNITED STATES OF AMERICA	
15C. DATE SIGNED		16C. DATE SIGNED	
(Signature of person authorized to sign)		(Signature of Contracting Officer)	

Emergent IV BAA0001-22, dated June 14, 2022, is hereby Amended as follows:

1. The purpose of this Statement of Work (SOW) is to announce DLA's J6 Hackathon. White Papers shall be submitted in accordance with the Emergent IV BAA0001-22 as well as the requirements of this SOW. The proposed timeline for the Hackathon submission can be found in section 6.0 Proposed Timeline.

STATEMENT OF WORK (SOW)

Research and Development Enterprise Service Activity (J68)
Generative Artificial Intelligence (Gen AI) (Hackathon)

1.0 Background

As America's combat logistics support agency, the Defense Logistics Agency (DLA) provides the Army, Marine Corps, Navy, Air Force, other federal agencies, and partner nation armed forces with a full spectrum of logistics, acquisition, and technical services. DLA sources and provides nearly all the consumable items America's military forces need to operate – from food, fuel and energy to uniforms, medical supplies, and construction material. More information about DLA is available online at <http://www.dla.mil/>.

R&D pioneers DLA's industrial base and supply chain innovation across 13 leading-edge Logistics Research (LogTech), Manufacturing Technology (ManTech), and Small Business Innovation Program (SBIP) programs to enhance Warfighter readiness. R&D's main focus areas are: Business and Digital Development Data Modernization, Supply Chain Resiliency, Additive Manufacturing, Rare Earth and Strategic Materials, Large Language Models, Digital Sustainment Platform, Digital Twin/Digital Thread, Nuclear Enterprise Sustainment Support, Greening and Sustainability, Artificial Intelligence, Generative Artificial Intelligence, and Machine Learning. The R&D program managers oversee more than 325 innovative projects including the Defense Manufacturing Technology Achievement Award-winning powerful, lightweight military batteries project under the Emergent IV BAA. R&D's mission is to develop and deliver new capabilities through applied technologies and innovative solutions to enhance warfighter sustainment.

The purpose of this Statement of Work (SOW) is to announce DLA's J6 Hackathon. The Hackathon is planned to be an interactive event which will solicit White Papers (WP) to obtain the necessary services of qualified vendors to support the DLA's missions of researching and developing, testing, and evaluating capabilities through a

simulation and modeling approach and process engineering improvements using advanced and disruptive technologies. In addition, to providing support to the R&D Strategic Integrator in prototyping, piloting, testing, evaluating, implementing, and sustaining the cloud research and development-environments.

2.0 Objective

DLA J68 understands Generative Artificial Intelligence (Gen AI) as a form of artificial intelligence that uses machine learning models to generate new content or data. It relies on statistical patterns and structures learned from training on large datasets to predict outputs in response to user inputs. Gen AI describes an emerging set of computational statistical models able to autonomously produce diverse and contextually relevant content, particularly text and imagery. Gen AI's expanding capabilities and ease of use can result in automation of time-consuming knowledge work and improved organizational efficiency when designed and applied effectively.

The Logistics R&D Emergent IV Broad Agency Announcement (BAA) area of interest H, Artificial Intelligence / Machine Learning (AI/ML) application subtopics related to Gen AI are included as listed below:

1. **Content Generation:** The capability to generate text, image, content, code, video, or audio based on some given parameters or examples.
2. **Data Manipulation:** The capability to enhance or modify existing content or data (grammar, proofreading, tone change, style of image), data augmentation, anomaly detection, or model training.
3. **Content Assistance:** The capability of leveraging conversational agents, interactive design, or retrieval of documentation.

As the objective of the Hackathon Event, Gen AI will encompass various key aspects in different phases. See below for the description of each phase:

- **Phase 1:** In this initial phase, the vendor is required to explain and provide a practical simulation of their data scraping methodologies and approaches. This should include insights into strategies and the potential introduction of innovative techniques. Additionally, the vendor should thoroughly showcase their Gen AI capabilities, particularly emphasizing the utilization of Large Language Models (LLM). These models should be applied for constructing a knowledge base, generating new content, enhancing existing content, and

providing

content

assistance.

- **Phase 2:** Building upon the initial phase, the exploration extends to evaluating the scalability of the Gen AI solution. This involves a comprehensive assessment of integration capabilities with diverse tools, ensuring the solution's compatibility with various cloud environments maintaining cloud agnosticism, and demonstrating proficiency to adeptly updating Gen AI model parameters. Additionally, vendors are encouraged to demonstrate their capability to seamlessly transition the Gen AI solution to the DLA cloud hosting environment.
- **Phase 3:** In this final phase, the Gen AI solution is required to leverage the knowledge and insights acquired in the previous phases. This entails incorporation of DLA approved data, utilization of preliminary use cases provided by the organizer. Vendors must not only refine and enhance the Gen AI solution but also demonstrate its' practical application in the preliminary use cases. This collaborative approach aims to contribute to a clear understanding of DLA's business and supply chain dynamics. The goal is to showcase the adaptability of the Gen AI solution to specific use cases and to contribute to a comprehensive and well – informed approach in the development and application of Gen AI models.

In summary, the overall objectives seek to identify vendors with advanced data scraping capabilities, innovative methodologies, and the potential to create impactful Gen AI solutions tailored to DLA's domains.

3.0 Service Work Areas

The vendor will support the following service work areas/tasks as detailed in section 4.0 Scope:

1. Research, Development, Testing and Implementation Strategy
2. Development Methodology
3. Use Case Implementation
4. Cybersecurity and DoD Compliance
5. Technical Requirements and Software Listing
6. Licensing and Software Distribution Independence
7. Government and Policy Compliance
8. Gen AI Methodologies and Cloud Compatibility
9. Gen AI Solution Scalability, Sustainability, and Model Maintenance Assurance
10. Data Integration, Interoperability and Management Framework

11. API Integration and Management Support
12. Gen AI Solution Transition to DLA Cloud Hosting
13. Multi-Cloud Deployment and Hosting Flexibility
14. Source Code Management and Ownership

4.0 Scope

This Statement of Work (SOW) encompasses various interconnected support functions, all integral to the requirements of DLA's Gen AI desired solution. The vendor will select specific area(s) from the listing below to respond to the SOW via the White Paper (WP) submission, in accordance with the Emergent IV BAA0001-22, which can be found via the following link: <https://sam.gov/opp/dcd2060566e2407d88a3296e2d78a968/view>.

Additionally, the vendor is required to furnish comprehensive documentation in English pertaining to the Gen AI model, tool, or algorithm associated with the solution. This documentation should include, for instance, README file, textual descriptions, diagrams, screen captures of the application, user interface, data, technical design, database concepts, interfaces with other applications, data, and application security, as well as the architecture for the solution ensuring a thorough description of the underlying Gen AI components that integrate with the vendors capabilities.

1. Research, Development, Testing, and Implementation Strategy:

- a) The solution must describe approach, spanning researching and developing, prototyping, piloting, testing, evaluating, implementing, and sustainment in cloud research and development environments.
- b) The vendor shall describe their process epics, user story(ies) identification, prioritization, planning, collaboration, refinement, implementation, testing, and implementing lessons learned.
- c) The vendor, solution must implement the use cases provided by DLA.
- d) The solution must meet the goals and objectives of the of the SOW set forth by DLA.

2. Development Methodology:

- a) The vendor will describe their understanding of Gen AI models, their process (es) and methodology(ies) for building, refining, tuning, maintaining, and implementing their models.
- b) The vendor must be able to scrape data, specifically publicly releasable / open-source data, from various data sources (e.g. websites), not simulated or synthetic data, to develop Gen AI models.

3. Use Case Implementation:

- a) The vendor must provide recommendations to enhance Government insights through improvements in data collection.

4. Technical Requirements and Software Listing:

- a) The vendor must provide a listing of software that the application or solution requires in order to function, including embedded software. Example software categories include Operating System, Database, Web Server, etc.

5. Cybersecurity and DoD Compliance:

- a) The vendor must describe how the solution will accomplish or enable data privacy and security.
- b) The vendor must describe how the solution will comply with DoD cybersecurity, can be secured in a DoD environment, and show awareness for specific requirements (i.e., FEDRamp certified).
- c) The vendor must ensure appropriate Cybersecurity/IA for all IT program/projects, especially during research and development, prototyping, piloting, testing, evaluating, implementing, and sustaining the cloud research and development environments.

6. Licensing and Software Distribution Independence:

- a) The rights attached to the solution must not depend on the program being part of a particular software distribution.
- b) The licensed software cannot place restrictions on other software that is distributed with it.

7. Government and Policy Compliance:

- a) The vendor will demonstrate and describe an understanding of DLA and relevant DLA policy, the process, data sources, and technology used (i.e. data scraping) by which the information was extracted or collected for the DLA description.
- b) The vendor must provide recommendations to enhance Government insights on ensuring the application or solution complies with Federal and DoD AI Ethical Principles.
- c) The vendor will describe an understanding of DevSecOps, Agile, other methodologies and processes used for development and maintenance of their application or solution.
- d) The vendor must describe how the application or solution will comply with DoD and DLA policy, and implement Identity, Credential, Access Management (ICAM)/Zero-Trust (ZT) in addition Role Based Access Control (RBAC), Attribute Based Access Control (ABAC).
- e) The vendor explains how their solution complies with the Section 508 accessibility requirements. If the solution does not currently comply, the vendor must understand that this compliance is required in order to progress to

later stages of the Gen AI project. The vendor affirms that its' Electronic Information Technology (EIT) supplies and services are accessible as outlined in the law, the standard, and FAR Subpart 39.2. Vendors shall complete the current revision of the Voluntary Product Accessible Template (VPAT) Rev 508 at <https://www.itic.org/policy/accessibility/vpat>.

8. Gen AI Methodologies and Cloud Compatibility:

- a) The vendor shall explain their Gen AI methodologies.
- b) The solution must be capable of being hosted in Google Labs and be flexible to be hosted in other cloud environments provided or supported by sponsor (i.e., AWS, Commercial Technology Maintenance Activity, etc.).
- c) The vendor will demonstrate how solution utilizes DoD approved toolsets in multi-cloud and Commercial off-the Shelf (COTS) products.
- d) The solution must be capable of automating synthesis of supply networks from informal documents and data, identify key manufacturing steps, detect when these steps can be repurposed, and automate discovery of patches in the supply network.
- e) The solution must be capable of performing manufacturing steps and analyze large supplier data in DoD systems using large language models to parse and learn ontology and process flow for manufacturing of multiple systems.
- f) The vendor will demonstrate how solution will utilize subgraph isomorphism computations for computing replaceable steps in production.
- g) The solution must be capable of building a novel supply network system that will be able to discover latent capabilities and capacities for production of critical items.
- h) The vendor will describe how the solution will identify alternate suppliers/supply chains and additional capabilities within the domestic Industrial base.
- i) The solution must be capable of translating natural language to formal languages without any training for a formal tool using corresponding formal verification methods.
- j) The solution must be capable of detecting consistency and ambiguity errors in the large language model response to avoid hallucinations of large language models.
- k) The solution must be capable of decomposing the problem into subproblems for abstraction insights using large language models and formal tools.
- l) The solution must be capable of using formalized queries with formal tools that accept specific domain specification languages learned by large language models.

9. Gen AI Solution Scalability, Sustainability, and Model Maintenance Assurance:

- a) The vendor must describe how the solution can scale to support DLA (or a large agency) and transition to full operational capacity and production, covering all phases including start-up/launch, ramp-up/expansion, steady-state operations, and project transition.
- b) The solution must be made available free of charge and without any restriction for testing and evaluation during the Hackathon event.
- c) The vendor must be able to support and maintain models associated with deployed Gen AI use cases.

10. Data Integration, Interoperability and Management Framework:

- a) Vendors must describe how and the type of databases and storage (i.e., data warehouse, data lakes, hubs, mess, etc.) the application will interface or support.
- b) The solution must use the Government Furnished Data.
- c) The vendor must describe how the application can leverage, interface, and/or integrate with other data analytic, Gen AI tools, and platforms.
- d) The solution must include documentation of all data sources used.
- e) The solution must include a description of how the it can be updated with additional data from other agencies across DLA.
- f) The vendor must provide the sources of all data obtained and/or used.
- g) The vendor must identify any Personal Identifiable Information (PII) data that is obtained.
- h) The vendor will demonstrate how the solution will integrate and analyze different data sets in the DLA environment to improve existing model or develop new models.
- i) The vendor must describe how the solution can leverage, interface, and/or integrate with other data analytic, Gen AI tools, and platforms.
- j) The solution must include a description of how it can be updated with additional data from other agencies across DLA.

11. API Integration and Management Support:

- a) The vendor must describe how the solution can leverage an API Management Platform (i.e., Mulesoft, etc.).
- b) The solution may integrate Software Development Kit (SDKs) and Application Programming Interface (APIs), provided the participant is authorized to use.

12. Gen AI Solution Transition to DLA Cloud Hosting:

- a) The application must be able to support the transition of Gen AI solution to DLA cloud hosting environment and adoption of Gen AI.
- b) The solution must run on one of the following:

- i. A web browser (mobile or desktop)
- ii. A desktop computer (windows PC)

13. Multi-Cloud Deployment and Hosting Flexibility:

- a) The solution must be capable of being hosted in Google Labs and be flexible to be hosted in other cloud environments provided or supported by sponsor (i.e., AWS, Azure, Commercial Technology Maintenance Activity, etc.).
- b) The vendor must describe how the solution can be deployed or interface in a multi-cloud environment.
- c) The solution must be developed using Gen AI tools available on the sponsor's hosting environment.

14. Source Code Management and Ownership:

- a) If the solution runs on proprietary or third-party software, the sponsor or administrator reserves the right, at their sole discretion, to require the participant to provide the source code.

Due to the BAA0001-22 instructions, submitters are not required to include all work areas in the White Paper submission (since White Papers are limited to 6 pages); however, for those requested to submit a Technical and Cost Proposals, all of the above work areas are required to be included within the proposal.

5.0 Demonstration of Gen AI Capabilities

It is DLA's high priority to protect vendors' capabilities; therefore, the BAA is structured to protect each vendor's ideas and information from being stolen or shared with competitors or third parties.

When the vendor's White Paper is accepted and approved to move forward, DLA may request a Technical Proposal to move to the next phase. All Technical Proposals will be reviewed by the Technical Evaluation Team (TET), those vendors that move forward will be requested to conduct a demonstration. The vendor will be given one (1) week to prepare for the demonstration. All demonstrations will be conducted utilizing the same Use Case which will be provided by DLA. The demonstration to the TET will be in person and the agenda will be as follows:

- 1. Power Point presentation describing how the vendor will accomplish the project and key features of their capabilities described in Amendment 15 – 10 minutes
- 2. Demonstration of the Gen AI capabilities – 20 minutes
- 3. Q&A (from DLA to the vendor)– 10 minutes

Once all demonstrations have been completed, the TET will discuss the original White Paper, proposal and notes/summaries from the capabilities' demonstration. At the point that a selection is made by the TET the Contracting Officer (KO) will contact the vendor to inform them of the selection. Those that are not selected will also be notified by the KO. All contact from DLA will come from the KO.

6.0 Proposed Timeline

The general proposed timeline for the Hackathon submission, evaluation and selection process is as follows:

- a) Release of Amendment 15 – **February 28, 2024**
- b) Open for White Paper responses – Three Weeks there after release of Amendment 15 - **White Paper responses due March 20, 2024**
- c) Technical Evaluation Team to review White Papers – Two week after the window of responses is closed
- d) Vendor requested to submit Technical proposals – One week
- e) Technical Evaluation Team to review Technical Proposal and provide notice to vendor of demonstration – One Week
- f) The Technical Evaluation Team will produce final reviews and provide vendor final selection – Two weeks

2. All other Terms and Conditions remain unchanged.