

**Tactical Behaviors for Autonomous Maneuver
Collaborative Research Program
(TBAM-CRP)
Cycle 2 Funding Opportunity Announcement**

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FUNDING OPPORTUNITY OVERVIEW

1. Federal Awarding Agency Name

Combat Capabilities Development Command (CCDC)
U.S. Army Research Laboratory
2800 Powder Mill Road
Adelphi, MD 20783-1197

Issuing Acquisition Office:

U.S. Army Contracting Command – Aberdeen Proving Ground, Research Triangle
Park (RTP) Division

800 Park Office Drive
Suite #4229
Research Triangle Park, NC 27709

2. Research Opportunity Title:

Tactical Behaviors for Autonomous Maneuver Collaborative Research Program (TBAM-CRP)

3. Announcement Type: Cycle 2 Update to W911NF-22-S-0011

4. Funding Opportunity Number: W911NF-22-S-0011

5. Catalog of Federal Domestic Assistance (CFDA) Number(s):

12.630 - "Basic, Applied, and Advanced Research in Science and Engineering"

6. TBAM-CRP Website: <https://www.arl.army.mil/business/collaborative-alliances/current-cras/tbam-crp/>

7. Opportunity Webinar: Will be held online via Teams. at 1500 EDT on 22 March 2024 at the following link: https://dod.teams.microsoft.us/l/meetup-join/19%3adod%3ameeting_5fa41fe6fa874484b473d8a6ba7921c6%40thread.v2/0?context=%7b%22Tid%22%3a%22fae6d70f-954b-4811-92b6-0530d6f84c43%22%2c%22Oid%22%3a%22e9f6fc39-8f22-44e5-8bd0-64f0cde32305%22%2c%22IsBroadcastMeeting%22%3atrue%7d

8. Submission of Questions: usarmy.adelphi.devcom-arl.mbx.tbam-crp-questions@army.mil

9. Key Dates:

The following is a summary of the events and dates associated with this Cycle under the overall TBAM-CRP Funding Opportunity Announcement (FOA):

EVENT	ESTIMATED DATE/TIMEFRAME
Opportunity released	14 March 2024
Opportunity Webinar	22 March 2024, 1500, EDT
Deadline for Questions on Funding Opportunity (see email address above for question submission method)	27 March 2024

Proposals Due for Cycle 1
Notification to Recipients
Cycle 2 program start

24 April 2024,
June 2024
1 October 2024

Tactical Behaviors for Autonomous Maneuver Collaborative Research Program (TBAM-CRP)

A. PROGRAM DESCRIPTION

- **Purpose:** Future Army forces will be called upon to operate and maneuver in multi-domain operations (MDO), against a modern and capable peer adversary. The battlefield of the future may impose additional constraints on maneuver forces such as disruption in communication as well as positioning services. To field a highly capable fighting force in this future battlefield, novel tactics and doctrines leveraging nascent technologies in robotics and autonomous systems (RAS) will need to be developed. Teams of RAS will serve an increasingly critical role in the future force to deliver situational awareness, defend key locations or positions, or take point in dynamic and hazardous situations. Resilience to disruptions, failures, or unexpected scenarios, is a key quality for teams of RAS to operate alongside other future Army forces. The US Army Combat Capabilities Development Command (DEVCOM) Army Research Laboratory (ARL) is focused on developing fundamental understanding and informing the art-of-the-possible for warfighter concepts through research to greatly improve the scope of mission capabilities of teams of RAS, develop robust and resilient approaches to plan under extreme conditions of uncertainty, to learn coordinated strategies for groups of agents to achieve a common objective, all within a complex maneuver environment including adversaries. The Tactical Behaviors for Autonomous Maneuver Collaborative Research Program (TBAM-CRP) is focused on developing and experimentally evaluating coordinated and individual behaviors for small groups of autonomous agents to learn doctrinal as well as novel tactics for maneuvering in military relevant environments. The TBAM-CRP will leverage developments in other internal and extramural programs as well as identify new research directions to find novel solutions to these maneuver problems in analogical simulations representing complex realistic terrain.

The Tactical Behaviors for Autonomous Maneuver Collaborative Research Program (TBAM-CRP) will consist of a series of sprint efforts executed with annual program reviews. Each topic will be focused on addressing a different set of scientific areas which will support the research aims of an associated ARL researcher from a related internal essential research program (ERP) or mission-funded program.

The TBAM-CRP has been developed in coordination with other related ARL-funded collaborative efforts¹ and shares a common vision of highly collaborative academia-industry-government partnerships; however, it will be executed with a program model adapted from the Scalable, Adaptive, and Resilient Autonomy (SARA), which established a new paradigm for collaborative research. Some key properties of this new approach are described below:

- TBAM-CRP sprint topics will be offered on a two-year cycle. Proposals will be solicited for up to a maximum of four years, including a two-year pilot effort followed by up to two one-year optional extensions, where the option(s) may be awarded based upon progress assessed during annual reviews. The FOA will be amended annually to identify a specific problem statement and

¹ Descriptions of ARL collaborative alliances can be found at <https://www.arl.army.mil/business/collaborative-alliances/>

scope for that specific cycle. The topics for each cycle will be chosen to address the long-term program goal.

- Five new topics (Cycles 1-5) are expected in FY22, 24, 26, 28, and 30. Each topic will be carefully chosen based on the previous accomplishments in the prior cycle(s), the development of new technologies and capabilities in the broader research and development communities, and the Army's evolving needs for future capabilities.
- For each topic, funding will be provided to those Recipients selected under a cooperative agreement (CA).
- Enhanced Research Program funding from ARL or Other Government Agencies (OGAs) may become available during a cycle which provides a mechanism for growth and enhancement within the TBAM-CRP. A proposal should not include any discussion of the Enhanced Research Program. Recipients receiving a CA will be notified and provided details if the opportunity for Enhanced Research Program funding becomes available during their award period of performance.
- There is no limitation on the place of performance, although on-site collaboration at ARL facilities and with ARL researchers as well as with other Recipients are encouraged. Research outcomes in this program must, at the very least, be demonstrated in sophisticated simulations of relevant environments. Together with ARL collaborators, these results may be adapted for higher TRL experimentation on surrogate platforms at ARL test facilities such as the Robotics Research Collaboration Campus (R2C2) at Graces Quarters, Aberdeen Proving Ground, Maryland.
- Recipients will be furnished with access to the ARL Autonomy Stack software suite as well as all relevant simulation tools and multi-agent learning support.
- Recipients will be provided with information about the current state of the Autonomous Systems Enterprise (ASE) with an overview of developments in the associated collaborative research alliances including Distributed and Collaborative Intelligent Systems and Technology (DCIST), Scalable, Adaptive, and Resilient Autonomy (SARA), as well as internal ARL essential research programs including the AI for Maneuver and Mobility (AIMM), Emerging Overmatch Technologies (EOT), and Versatile Tactical Power and Propulsion (VICTOR), and new ASE programs which may begin during the period-of-performance. Capabilities demonstrated in simulation should reflect significant appropriate developments. This midpoint review is expected to take place as a mini symposium where Recipients can share results with one another along with the ARL community to foster further collaboration.
- At the end of the second year, a capstone demonstration will take place in a set of simulated relevant environments, either those environment scenarios provided by the Government and other program performers, or optionally of a specific environment developed by the Recipient to exhibit their developed capability. Any system level capability demonstration that can be made with the internal ARL collaborator or description of capability development and program contribution can also be made at this time. These system demonstrations are expected to coincide to foster further integration and adoption with related internal research programs as well as partner organizations

from within the DEVCOM, other Army and DoD service branches and agencies, in addition to other government agencies.

Proposals that follow the requirements of the FOA will be evaluated in accordance with merit-based, competitive procedures. These procedures will include evaluation factors and an adjectival and color rating system. A review team, consisting of a qualified group of Government scientists and managers will evaluate the compliant proposals and provide the results of that evaluation to the decision-maker for the Government. Relevant internal research program materials approved for public release and contact information will be provided to potential proposers during introductory presentations to help facilitate identification of collaboration between proposers and individual ARL researchers or internal research programs. Additional connections to ARL programs can be identified during the proposal review process.

Eligible applicants under this FOA include institutions of higher education, nonprofit organizations, and for-profit organizations (i.e., large and small businesses) for scientific research in the knowledge domains outlined throughout this Funding Opportunity. Federally Funded Research and Development Centers (FFRDCs) are subject to applicable direct competition limitations and cannot propose to this solicitation in any capacity unless they meet the following conditions. (1) FFRDCs must clearly demonstrate that the proposed work is not otherwise available from the private sector. (2) FFRDCs must provide a letter, on official letterhead from their sponsoring organization, that (a) cites the specific authority establishing their eligibility to propose to Government solicitations and compete with industry, and (b) certifies the FFRDC's compliance with the associated FFRDC sponsor agreement's terms and conditions. These conditions are a requirement for FFRDCs proposing to be awardees or subawardees.

The TBAM-CRP program is designed to research and develop key capabilities for use in existing and future DEVCOM ARL internal and extramural research programs. Key aspects which differentiate this topic from existing internal and external research programs include a specific focus on:

- Exploiting terrain and cover to operate in non-permissive complex environments.
- Framing scenarios provided in sprint announcements to ground diverse research approaches to address a unique Army-relevant problem.
- Operating scenarios in the context of capable adversaries which are counter-maneuvering rather than operating without opposition.
- The need to synchronize motion and other effects across a team instead of a focus on individual platforms.
- Recognition of evolving and dynamic phases of operation and the need for transition between tactical behaviors across a team instead of static and simple scenarios.
- Changing roles within team based on phase of operation, terrain / other semantics, as well as scenario changes such as due to attrition or resource / power availability rather than well-defined and fixed relationships or capabilities.

Cycle 2 Sprint Topic: Coordinated maneuver against adversaries.

In the future, Army robots and autonomous systems (RAS) will operate in non-permissive unstructured environments. Operating in these environments requires solutions to problems that are not typically addressed in the commercial sector. These RAS will be required to maneuver through complex terrains including urban scenarios incorporating prepared surfaces as well as off-road traversal, in unstructured scenarios with natural obstacles such as forests, jungles, deserts, and undulating terrain with watershed features such as river crossing, as well as in rural settings with boundary fences, walls, and sparse structures. In each of these scenarios, contact with potential adversarial positions is a constant concern – in some situations this contact should be avoided through use of terrain features and cover; in other missions the adversary positions should be met with a posture of tactical overmatch through coordinated maneuver - the synchronized actions of a distributed system.

The operational scenario for Cycle 2 is entitled “Preparation for Contact”. In this scenario, the team of autonomous agents is maneuvering in a non-permissive environment where contact is expected. An unidentified/ unknown entity or group has just been detected by the team; this element may be unaware of our team, or it may be counter-maneuvering in preparation for contact. The goal for this cycle is to make and execute decisions for the team which achieve an operational advantage in the short time remaining before contact is engaged.

The notion of “achieving an operational advantage” is meant to be sufficiently general to admit a diverse set of interpretations. One obvious example of achieving an operational advantage would be to maneuver to a tactically superior position, such as where its agents are positioned to maximize the availability of protective cover while observing or confronting the adversary position.

Other types of advantages could include informational knowledge - the team must improve their informational state by identifying and classifying remaining unseen components of the adversary by leveraging contextual cues about the surrounding terrain. This information can be used to estimate the adversary’s capabilities, which can inform future decisions. The composition, disposition, and intent of the contacted element could also be ambiguous: in this situation controlling the flow of information is critical for the team as it may not be able to act until more is known.

Proposals to address this scenario could consider this contact to exist over different spatial and time scales as appropriate and may have been approached or reached from a position of advantage, parity, or disadvantage. The posture of the team should also be responsive to the uncertainty, risk, and operating conditions or constraints of the mission. For example, adversaries may be detected indirectly on the other side of a visibility line via another asset or electronic monitoring. This is a position of advantage, where a disparity of knowledge exists between the team and its opponents. Here, time can be taken to carefully collect information about the disposition and capability of the adversary.

In any scale, the information collected, and maneuver performed by the autonomous team will be at the cost of potentially furnishing the adversary with information. In this way, protected information about our team must be risked gathering information about the adversary. For example, to gather information via direct observation, any line-of-sight sensor which is positioned to collect this information would necessarily be observable by the adversary to some extent. In the condition of making observations across an inter-visibility line or occluding feature, such as peeking over a ridgeline, may provide the adversary with a great deal of information. Carefully controlling how the adversary can interpret this information may be the only choice in this case – how can the adversary be limited from estimating the size of our team or their planned mission?

The TBAM-CRP Cycle 2 Sprint proposals should plan to incorporate and build upon GFE software (see section on Government furnished equipment (GFE) and software, on page 7) and may optionally refer to and build upon the academically published results developed in prior sprint cycles, which included research efforts across the following topics:

- Coordinated multi-agent traversals utilizing dynamic bounding overwatch [1] [2] [3] [4] [5].
- Fast computation of viewsheds from distributional observer position estimates [3].
- Controllers which maximize the use of cover and concealment from viewshed calculations [6] [7] [8].
- Planners which reason over “non-Markovian” observation functions, considering the trade-off between being seen again from one possible observer position rather than being exposed to an additional observer position [9].
- Controllers to enable teams to move in defined formations while maneuvering around obstacles [6] [8] [10].
- Navigation in unstructured offroad terrain [11] [12]
- Game-theoretic reasoning to obscure mission details from an observer [13] [14] [15].

Metrics:

Recipients will be expected to demonstrate their solutions in relevant simulations as well as to participate in the deployment of their solutions onto ARL’s systems/ programs. At these experimental events, Recipients will conduct coordinated autonomous tactical maneuvers in complex terrain with adversaries per the assumptions above and their performance will be evaluated against criteria such as:

- Detection by adversaries (duration of detection/observation or how many times were they visible from an observing position).
- Speed to complete maneuver task (i.e., reach objective under constraints) as compared to a manned or tele-operated system.
- Response to degraded operation (i.e., how many (or what proportion of) platforms can be disabled with less than x% disruption to other performance metrics).
- Difficulty of proposed scenario / number and capability of adversaries / complexity of terrain and structure.
- Diversity of simulated scenarios in unstructured environments such as jungle or sparse and dense forest as well as more structured environments such as urban and rural, as described above.

Government furnished equipment (GFE) and software:

To allow for diverse and unexpected proposals, the use of the following GFE is optional, but may enable better integration with ARL research programs for systems demonstrations:

ARL Autonomy Architecture:

The autonomy architecture is based on packages and components implemented with the Robotic Operating System (ROS)² to enable reproducibility and modularity. Reproducibility derives from package meta-data (ROS package.xml) and build system (catkin-tools). We consider modularity at two scales: both individual algorithms/nodes and clusters of nodes that provide capability. The architecture depends on the TF library and adheres to the ROS Enhancement Protocol. Central to the world model and representations of the architecture is the adoption of pose-graph-based solutions to the simultaneous localization and mapping (SLAM) problem for GPS-denied or degraded localization. That is, representations of the world consume a list of frame correction (e.g., map to odometry) to process observations in a consistent frame (e.g., map). Finally, we assume a federated world model - the location and communication of data is in the hands of the system designer.

ARL Ground Autonomy Software Stack:

The existing ARL autonomy software stack provides an implementation of the architecture described above and will be provided as GFE to Recipients. It consists of four major capabilities:

1. Perception pipeline: Take sensor data, e.g., RGB images and point clouds, and process to symbolic observations. Components include object detection, per-pixel image classification, object position/pose estimation based on LIDAR, etc.
2. Simultaneous Localization and Mapping (SLAM): Using sensor data and perception pipeline products, formulate SLAM problem as a pose-graph optimization and solve. Includes components for point cloud alignment (ICP), pose-graph optimization (GTSAM), caching/data-association/fusion of symbolic object measurements, renderers of terrain classes/occupancy grids/point clouds.
3. Metric Planning and Execution: Use metric model of the world to achieve metric goals, e.g., waypoint navigation. Includes components for global planning (e.g., lattice-based motion planning), local planning (e.g., trajectory optimization), and an executor to sequence planning and control.
4. Symbolic Planning: Use symbolic model of the world to achieve symbolic goals, e.g., going near a particular object. Underlying symbolic planning architecture is based on behavior trees. Includes components for mission planning (e.g., the Planning and Acting using Behavior Trees), mission execution, sample behaviors that interface with mission planning/execution and the metric planning/execution layer (e.g., going to an object).

ARL Simulation Testbed(s):

ARL's simulation environment utilizes the Unity game engine using a custom interface to pass data between ROS and the simulation engine. This simulator works as a "software in the loop (SITL)" in that it simulates sensors and actuators, with the autonomy software stack interfacing in the same way as it would on a physical robot. It utilizes a rigid body physics simulation for basic dynamics and collision modeling.

ARL will provide initial simulation scenarios such as a village, a roadway crossing with complex forested terrain transitions and changing contexts, and a rural agricultural area. Performers are encouraged to contribute additional scenarios within the simulator which showcase their specific capabilities and share them with other performers where possible. ARL will also contribute additional scenarios during the

² The autonomy architecture is being transitioned to ROS2 as of the time of the preparation of this document. Most major components are expected to be complete prior to the start of TBAM Cycle 2.

period of performance and may develop or adapt scenarios which are withheld for the purpose of testing and evaluation.

Implemented sensors include cameras, LiDARs, IMUs and wheel encoders. Actuators include wheels and motors. The Clearpath Jackal, Husky, and Warthog platforms are integrated with ARL sensor payloads and autonomy stacks into the simulation environment. Performers are allowed to contribute additional platforms, configurations, or other networked sensors as needed to support their development and exhibit their capabilities. Any performer contributed component should be reasonably expected to be realizable in hardware at the current or near future level of technology.

Proposal Intent: It is the intent of this FOA to solicit the most creative, innovative, and flexible approaches to the ultimate goal of generating and exploiting research to solve pressing research gaps and issues impacting both the military and commercial sectors. This FOA seeks Proposals which will result in the award of multiple CAs. Proposals will be solicited for innovative solutions that will advance the state-of-art and enable new novel tactical behaviors for teams of autonomous systems. Research from these proposals should result in experiments demonstrating the art-of-the-possible to inform future warfighter concepts and augment the Army RAS code and technology base.

- For each cycle, funding will be provided to selected Recipients under a cooperative agreement (CA). The current cycle period of performance will be a 24-month pilot effort and up to two 12-month optional extensions. The period of performance is expected to begin in August 2024 but may be shifted as late as 1Q25 based upon funding availability.
- Total number of Recipients and funding per Recipient will vary from year to year at the discretion of the Government and based on available funding. ARL reserves the right to negotiate with an Applicant to re-scope their proposal technical focus, period of performance, and associated costs to maximize the available program funding, balance of research topics across the program, and overall impact to the program.
- The success of this multidisciplinary effort will require meaningful collaborative partnerships between government, academia, and industry to advance the science. Proposals must address the intellectual property (IP) approach, how the approach will foster collaboration with ARL and other TBAM-CRP Recipients, and how the proposed solution will further advance the state-of-art of open source or ARL/government owned autonomy solutions.
- The research proposed and performed must comply with the definition for Budget Activity 1 research as outlined in the DoD Financial Management Regulation (FMR), Volume 2B, Chapter 5. Budget Activity 1 is for basic research. See DoD 7000.14-R for additional details.
- All funding is expected to be expended within the cycle period of performance. Available funding will vary from cycle to cycle; for Cycle #2, a total of \$2.1M per year is expected. Additional Enhanced Research Program funding from ARL or Other Government Agencies (OGAs) may become available during a cycle. Multiple awards are expected to be funded out of the Cycle #2. Proposals are expected to be bid at a cost commensurate with the level of effort. Awards will be made based on the impact to advancing the state-of-the-art. ARL reserves the right to adjust the balance of research based on merit of proposals received and potential impact to the overall program and advancing the state-of-the-art. ARL also reserves the right to

negotiate with an Applicant to re-scope their proposal and associated costs to maximize available program funding.

Collaboration: The Tactical Behaviors CRP addresses a critical objective within a broader Army goal to advance the state-of-art in autonomous vehicle multi-agent tactical maneuver in complex and realistic contested environments with adversaries. This program has been developed in coordination with other related ARL-funded collaborative efforts (see descriptions of ARL collaborative alliances at <https://www.arl.army.mil/business/collaborative-alliances/>) and shares a common vision of highly collaborative academia-industry-government partnerships. However, with the rapid pace of technology development TBAM-CRP will implement a novel, synergistic approach/structure. Cycles will be explicitly structured to foster the greatest degree of collaboration and knowledge sharing to optimally leverage or combine findings from each effort awarded under each cycle and directly tie with internal ARL research programs. This will happen through mandatory biweekly collaboration meetings with ARL internal researchers/ technical POC, as well as joint research presentations across all Recipients at kick-off and on an annual basis, in annual simulation evaluations, in addition to demonstration of derived higher TRL experimentation in conjunction with ARL research programs facilitated through ARL internal researchers. This structure is intended to achieve the overall goals of the TBAM-CRP program more effectively and efficiently by preventing unnecessary duplication or silos of information, findings, technology or other relevant outcomes from ARL investment (internal and external). In other words, the success of TBAM-CRP requires a multidisciplinary, collaborative effort that synergistically views every new funded effort as a network of research or “building block” to grow and support an ecosystem of high-quality, innovative researchers actively sharing knowledge and collaboratively addressing scientific gaps critical to the Department of Defense. Given this novel approach, Government researchers and program managers will be taking a more active role to support rapid integration of findings and cohesion within the research ecosystem. Research results of each Awardee and that of ARL staff under the TBAM-CRP are expected to build on in a coordinated, collaborative, and cumulative manner to significantly advance the state-of-art and in tactical maneuver technologies.

B. FEDERAL AWARD INFORMATION

Multiple CAs may be awarded from this FOA. The Applicants selected for award will be notified by the Grants Officer or his/her designee telephonically or via email. The CA award is not official until the Applicant has received the award signed by the Grants Officer.

CAs for Institutions of Higher Education and nonprofit organizations are primarily governed by the following:

- Federal statutes
- Federal regulations
- 2 CFR Part 200, as modified and supplemented by DoD's interim implementation found at 2 CFR Part 1103

CAs for For-Profit Recipients are primarily governed by the following:

- Federal statutes
- Federal regulations
- 32 CFR Part 34

The following websites may be accessed to obtain an electronic copy of the governing regulations and guidance:

- FAR, DFARS, and AFARS: <https://www.acquisition.gov/content/regulations> Code of Federal Regulations: <http://www.ecfr.gov>
- DoD Research and Development General Terms and Conditions September 2021
- ACC-APG-RTP Division Assistance, Research General Terms and Conditions dated DECEMBER 2020: <https://www.arl.army.mil/wp-content/uploads/2021/01/RTP-Agency-Specific-Requirement-DEC-2020.pdf>

Anticipated Core Funding Cycles:

Proposal	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Cycle 1	X	X								
Cycle 2			X	X	*	*				
Cycle 3					X	X	*	*		
Cycle 4							X	X	*	*
Cycle 5									X	x

*if option period(s) are exercised

All funding is expected to be expended within the cycle period of performance. Available funding will vary from cycle to cycle; for Cycle #2 seedlings, a total of \$2.1M is expected per year. Additional Enhanced Research Program funding from ARL or Other Government Agencies (OGAs) may become available during a cycle. Multiple awards are expected to be funded out of the Cycle #2 total amount of \$2.1M per year. Proposals are expected to be bid at a cost commensurate with the level of effort to include potential option periods. Proposals should include technical approach and cost for the initial pilot/base period of 2 years as well as potential option periods.

Award Instrument: This Funding Opportunity is expected to result in the award of multiple cooperative agreements (CA) during each Cycle as defined at 31 U.S.C. 6305 for the execution of the program. The CA is used to enter into a relationship:

- The principal purpose of which is to transfer a thing of value to the Recipient to carry out a public purpose of support or stimulation authorized by a law or the United States, rather than to acquire property or services for the Federal Government's direct benefit or use.
- Substantial involvement is expected between the Federal Government and the Recipient when carrying out the activity contemplated by the CA.
- No fee or profit is allowed.

Structure of Award: The CAs will consist of a proposal structured as a 24-month pilot base period of performance and up to two possible 12-month optional extensions which may be exercised based upon demonstrated progress at an annual review.

Proposal Submission: The application process consists of proposal submissions from applicants for each Cycle under this FOA. Applicants should note there are page limitations and other requirements associated with the submission process. Submissions in connection with this FOA are due by the date and time specified below. FOA amendments for future topics will include the submission requirements for those submissions. The Government's decision to award a CA will be based upon the proposal evaluation results.

Period of Performance: The CA Awards made as a result of this FOA will provide for a base period of performance of 24 months with up to two options continuing for an additional 12 months each for a maximum of a four year period of performance. ARL reserves the right to negotiate with an Applicant to re-scope their proposal or optional proposal technical focus, period of performance, and associated costs to maximize the available program funding, balance of research topics across the program, and overall impact to the program.

Place of Performance: There is no limitation on the place of performance although on-site collaboration at ARL facilities and with ARL researchers as well as with other Recipients is encouraged. It is mandatory that all Recipients present research progress at annual program review events.

Funding: This FOA is issued subject to the availability of funds. ARL has submitted the requisite documents to request funding for the period covered by the program. However, Applicants are reminded this request is subject to Presidential, Congressional and Departmental approval. Funding levels specified in this FOA are estimated funding levels and are for proposal preparation purposes only; actual funding levels of the CAs will be updated annually as part of the federal appropriation process.

Profit/Fee: Profit/fee is not permitted under the CA.

Cost Sharing: Cost sharing is not required under this FOA.

Opportunity Webinar: ARL will host an opportunity webinar on (see Event timeline above). A link to the webinar will be posted on the TBAM-CRP website at:
<https://www.arl.army.mil/business/collaborative-alliances/current-cras/tbam-crp/>

Contact Information: Outside of questions posed at the Opportunity Webinar, all questions or comments concerning this FOA must be submitted to the Government to usarmy.adelphi.devcom-arl.mbx.tbam-crp-questions@army.mil. Comments or questions submitted should be concise and to the point. In addition, the relevant part and paragraph of the FOA to which a comment or question pertains must be referenced. Responses to non-proprietary questions received will be posted to the announcement in grants.gov and on the TBAM-CRP website under the "General Information/Questions & Answers" section for the benefit of all interested parties. All clearly identified and marked proprietary questions submitted will be responded to via an individual email response, not posted to the TBAM-CRP website. Applicants are encouraged to submit questions as early as possible. The deadline for submission of questions which will be answered under this FOA is listed in Event timeline above. Any answers provided to questions do not change the requirements of this FOA. Future amendments to this FOA, including new cycle topics, will be issued via an amended FOA posted in grants.gov.

Important National Security Statement: This announcement requires that all current and pending research support, as defined by Section 223 of the FY21 National Defense Authorization Act must be disclosed annually, for all covered individuals identified in the proposal. Such disclosure will be updated annually during the performance of any research project selected for funding, and whenever covered individuals are added or identified as performing under the project.

Any decision to accept a proposal for funding under this announcement will include full reliance on the applicant's statements. Failure to report fully and completely all sources of project support and outside

positions and affiliations may be considered a material statement within the meaning of the federal False Claims Act and constitute a violation of law.

The funding agency will conduct a pre-award security review of any proposal selected for funding and may impose additional security requirements on a resulting award, based on that review. Additional award requirements, where applicable, may include requirements for personnel or facility security clearances, additional background reporting on participants, including students and post graduate researchers, and/or imposition of citizenship requirements on participants. Applicants are advised that any significant national security risk identified may be a basis for the rejection of an otherwise awardable proposal.

C. ELIGIBILITY INFORMATION

1. Eligible Applicants

It is our goal for the program to include a diverse group of Applicants with varied long-term interests. Applicants may be institutions of higher education, for-profit, or non-profit organizations. Federally Funded Research and Development Centers (FFRDC) may propose in accordance with the instructions provided in this FOA. Proposals may consist of teams from any combination of organizations (e.g., prime and sub-awardees), but this is not a requirement for award and award will only be made to a single entity.

2. Cost Sharing or Matching

Cost sharing is not required under this FOA.

D. APPLICATION AND SUBMISSION INFORMATION

The application process consists of a single Proposal stage. Applicants will receive feedback regarding their proposal ONLY IF IT IS SELECTED FOR AWARD, in order to improve the proposal and ensure alignment of the proposed research with Government goals. Applicants with non-selected proposals will be notified of their non-selection but will not receive feedback.

1. Address to Request Application Package

This FOA may be accessed from the following: Grants.gov (www.grants.gov). Amendments, if any, to this FOA will be posted to these websites when they occur. Interested parties are encouraged to periodically check these websites for updates and amendments.

2. Content and Format of Application Submission

The following information is for those wishing to respond to the FOA:

Grants.gov Application Submission and Receipt Procedures

This section provides the application submission and receipt instructions for DoD program applications. Please read the following instructions carefully and completely.

DoD is participating in the Grants.gov initiative to provide the grant community with a single site to find and apply for grant funding opportunities. For this funding opportunity, DoD requires applicants to submit their applications online through Grants.gov. This funding opportunity may be found on Grants.gov by going to the Grants.gov Search Grants screen and entering the funding opportunity number for this FOA, W911NF-22-S-0011, in the Funding Opportunity search box. You can also search for the CFDA Number 12.630.

How to Register to Apply through Grants.gov

Instructions: Read the instructions below about registering to apply for DoD funds. Applicants should read the registration instructions carefully and prepare the information requested before beginning the registration process. Reviewing and assembling the required information before beginning the registration process will alleviate last-minute searches for required information.

Organizations must have a active System for Award Management (SAM) registration and Grants.gov account to apply for grants. Creating a Grants.gov account can be completed online in minutes, but SAM registrations may take additional time. Therefore, an organization's registration should be done in sufficient time to ensure it does not impact the entity's ability to meet required application submission deadlines.

Register with SAM: All organizations applying online through Grants.gov must register with the System for Award Management (SAM). Failure to register with SAM will prevent your organization from applying through Grants.gov. SAM registration must be renewed annually. For more detailed instructions for registering with SAM, refer to:

<https://www.grants.gov/web/grants/applicants/organization-registration/step-2-register-with-sam.html>

Create a Grants.gov Account: The next step is to register an account with Grants.gov. Follow the on-screen instructions or refer to the detailed instructions here:

<https://www.grants.gov/web/grants/applicants/registration.html>

Add a Profile to a Grants.gov Account: A profile in Grants.gov corresponds to a single applicant organization the user represents (i.e., an applicant) or an individual applicant. If you work for or consult with multiple organizations and have a profile for each, you may log in to one Grants.gov account to access all of your grant applications. To add an organizational profile to your Grants.gov account, enter the UEI Number for the organization in the UEI field while adding a profile. For more detailed instructions about creating a profile on Grants.gov, refer to:

<https://www.grants.gov/web/grants/applicants/registration/add-profile.htm>

EBiz POC Authorized Profile Roles: After you register with Grants.gov and create an Organization Applicant Profile, the organization applicant's request for Grants.gov roles and access is sent to the EBiz POC. The EBiz POC will then log in to Grants.gov and authorize the appropriate roles, which may include the Authorized Organization Representative (AOR) role, thereby giving you permission to complete and submit applications on behalf of the organization. You will be able to submit your application online any time after you have been assigned the AOR role. For more detailed instructions

about creating a profile on Grants.gov, refer to:

<https://www.grants.gov/web/grants/applicants/registration/authorize-roles.html>

Track Role Status: To track your role request, refer to:

<https://www.grants.gov/web/grants/applicants/registration/track-role-status.html>

Electronic Signature: When applications are submitted through Grants.gov, the name of the organization applicant with the AOR role that submitted the application is inserted into the signature line of the application, serving as the electronic signature. The EBiz POC must authorize people who are able to make legally binding commitments on behalf of the organization as a user with the AOR role; this step is often missed, and it is crucial for valid and timely submissions.

How to Submit an Application to DoD via Grants.gov

Grants.gov applicants can apply online using Workspace. Workspace is a shared, online environment where members of a grant team may simultaneously access and edit different webforms within an application. For each funding opportunity announcement (FOA), you can create individual instances of a workspace. Below is an overview of applying on Grants.gov. For access to complete instructions on how to apply for opportunities, refer to: <https://www.grants.gov/web/grants/applicants/workspace-overview.html>

Create a Workspace: Creating a workspace allows you to complete it online and route it through your organization for review before submitting.

Complete a Workspace: Add participants to the workspace to work on the application together, complete all the required forms online or by downloading PDF versions, and check for errors before submission. The Workspace progress bar will display the state of your application process as you apply. As you apply using Workspace, you may click the blue question mark icon near the upper-right corner of each page to access context-sensitive help.

Adobe Reader: If you decide not to apply by filling out webforms you can download individual PDF forms in Workspace. The individual PDF forms can be downloaded and saved to your local device storage, network drive(s), or external drives, then accessed through Adobe Reader. NOTE: Visit the Adobe Software Compatibility page on Grants.gov to download the appropriate version of the software at: <https://www.grants.gov/web/grants/applicants/adobe-softwarecompatibility.html>

Mandatory Fields in Forms: In the forms, you will note fields marked with an asterisk and a different background color. These fields are mandatory fields that must be completed to successfully submit your application.

Complete SF-424 Fields First: The forms are designed to fill in common required fields across other forms, such as the applicant's name, address, and UEI Number. Once it is completed, the information will transfer to the other forms.

Submit a Workspace: An application may be submitted through workspace by clicking the Sign and Submit button on the Manage Workspace page, under the Forms tab. Grants.gov recommends submitting your application package at least 24-48 hours prior to the close date to provide you with time to correct any potential technical issues that may disrupt the application submission.

Track a Workspace Submission: After successfully submitting a workspace application, a Grants.gov Tracking Number (GRANTXXXXXXXX) is automatically assigned to the application. The number will be listed on the Confirmation page that is generated after submission. Using the tracking number, access the Track My Application page under the Applicants tab or the Details tab in the submitted workspace.

For additional training resources, including video tutorials, refer to:
<https://www.grants.gov/web/grants/applicants/applicanttraining.html>

Applicant Support: Grants.gov provides applicants 24/7 support via the toll-free number 1-800- 518-4726 and email at support@grants.gov. For questions related to the specific grant opportunity, contact the number listed in the application package of the grant you are applying for.

If you are experiencing difficulties with your submission, it is best to call the Grants.gov Support Center and get a ticket number. The Support Center ticket number will assist the DoD with tracking your issue and understanding background information on the issue. Application forms and instructions will be available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select "Apply for Grants", and then select "Download an Application Package." Enter the FOA number, W911NF-20-S-0005. Applicants must complete the mandatory forms and any optional forms (e.g., SF-LLL Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the additional instructions below. The required fields should be completed in accordance with the "pop-up" instructions on the forms. To activate the instructions, turn on the "Help Mode" (icon with the pointer and question mark at the top of the form). Files that are attached to the forms must be in Adobe Portable Document Form (PDF) unless otherwise specified in this announcement. The following formatting rules apply for the file attachments:

- Paper size when printed – 8.5 x 11-inch paper
- Margins – 1 inch
- Spacing – Single
- Font – No Smaller than Times New Roman, 12 point.

Form: SF 424 (R&R) (Mandatory) – Complete this form first to populate data in other forms. Authorized Organization Representative (AOR) usernames and passwords serve as "electronic signatures" when your organization submits applications through Page 19 of 31Grants.gov. By using the SF 424 (R&R), applicants are providing the certification required by 32 CFR Part 28 regarding lobbying.

Form: Research & Related Other Project Information - Complete questions 1 through 6 and attach files.

Project Summary/Abstract (Field 7 on the form) - The Project Summary should be a brief summary of the content of the application. It shall include a title, the research team (include roles, expertise, affiliations), designation of Junior Investigator or Senior Investigator derivation, and a brief abstract articulating the project objectives. The project summary/abstract must not exceed 1 page and will not be evaluated as it is primarily for documentation purposes.

Project Narrative (Field 8 on the form) - Chapters and Numbers of pages – Field 7 is to contain the chapters set forth below and may not exceed the stipulated page counts for those chapters. Pages in excess of the page limits may be removed for the evaluation of the application. All chapters set forth below should be in a single PDF file. For those chapters with specified page limitations, any pages submitted beyond the specified amount for a chapter will not be reviewed or evaluation.

Chapter 1: Technical Component. The pages included in Chapter 1 are to be numbered. Applicants are advised that Chapter 1 will not exceed 10 pages, utilizing one side of the page. Tables that extend beyond one page (fold out tables) will only count as one page.

Proposed Effort (approximately 4-5 pages): This section of Chapter 1 should include an overview of the research strategy to be employed to advance the state-of-the-art in enhancing performance in off-road autonomous maneuver; a short description and justification for annual research goals of the proposed effort; and a short technical discussion stating the background and objectives of the proposed research, and the overall technical approaches to be pursued. This technical discussion should include a proposed breakdown of research tasks and short description of the technical approaches for each task. The proposed effort should include the specific hypotheses to be tested, and what specific tasks will be performed by the research team to test them, as well as justification for why these are the appropriate measures.

Proposed Experimentation Event Participation and Collaboration Development (approximately 1-2 pages): Include here the plan for scale and scope of proposed simulation experiments as well as a notional or developed plan for involving DEVCOM Army Research Lab research personnel and programs. Proposals should address any Intellectual Property and how their approach will foster collaboration with ARL and other Recipient's, and how their approaches can be used to develop novel multi-agent tactical behaviors and operate in complex environments with military-relevant scenarios, and how these solutions will further advance the state-of-art of open source or ARL/government owned tactical systems.

Participant(s) roles, qualifications and bio-sketches (approximately 2 pages): Must include the names, primary role/availability, and brief biographies. Include plans for junior investigator development and mentorship of less experienced personnel (mentoring plan).

Proposed timeline (approximately 0.5-1 page): An estimated timeline of tasks to be completed during the 24-month period, including research timelines and planned experimental milestones.

Chapter 2: Cost Component. The pages included in Chapter 2 will be numbered and Chapter 2 does not have a page limitation. Cost Application must include a budget for the period of performance. The cost portion of the application will contain cost estimates sufficiently detailed for meaningful evaluation, to include potential travel funding for participation in annual reviews as well as in-person interaction with ARL researchers. Budget justification may also be attached in this chapter. Before award it must be established that an approved accounting system and financial management system exist. Proposals should include itemized budgets per the instructions below and must be commensurate with the technical level of effort proposed. For all applications, the budget details should include:

Direct Labor: Show the current and projected salary amounts in terms of manhours, man- months, or annual salary to be charged by the personnel performing under this agreement either by personnel or

position. State the number of man-hours used to calculate a man-month or man-year. For each person or position, provide the following information:

The basis for the direct labor hours or percentage of effort (e.g., historical hours or estimates).

The basis for the direct labor rates or salaries. Labor costs should be predicted upon current labor rates or salaries. These rates may be adjusted upward for forecast salary or wage cost-of-living increases that will occur during the agreement period. The cost application should separately identify the rationale applied to base salary/wage for cost-of-living adjustments and merit increases. Each must be fully explained.

- I. The portion of time to be devoted to the requirements of the agreement.
- II. The total annual salary charged to the agreement; and
- III. Any details that may affect the salary during the project, such as plans for leave and/or remuneration while on leave.

a. Fringe Benefits and Indirect Costs (Overhead, G&A, and Other): The most recent rates, dates of negotiation, the base(s) and periods to which the rates apply must be disclosed and a statement included identifying whether the proposed rates are provisional or fixed. If the rates have been negotiated by a Government agency, state when and by which agency. A copy of the negotiation memorandum should be provided. If negotiated forecast rates do not exist, applicants must provide sufficient detail to enable a determination to be made that the costs included in the forecast rate are allocable according to applicable cost provisions. Applicants' disclosure should be sufficient to permit a full understanding of the content of the rate(s) and how it was established. At a minimum, the submission should identify:

- I. All individual cost elements included in the forecast rate(s);
- II. Basis used to prorate indirect expenses to cost pools, if any;
- III. How the rate(s) was calculated;
- IV. Distribution basis of the developed rate(s);
- V. Basis on which the overhead rate is calculated, such as "salaries and wages" or "total costs;" and
- VI. The period of the applicant's FY.

b. Permanent Equipment: If facilities or equipment are required, a justification why this property should be purchased with Government funds must be submitted. State the organization's inability or unwillingness to furnish the facilities or equipment. Applicants must provide an itemized list of permanent equipment showing the cost for each item. Permanent equipment is any article or tangible nonexpendable property having a useful life of more than one year and an acquisition cost of \$5,000 or more per unit. The basis for the cost of each item of permanent equipment included in the budget must be disclosed, such as: Vendor Quote: Show name of vendor, number of quotes received and justification, if intended award is to other than lowest bidder.

- I. Historical Cost: Identify vendor, date of purchase, and whether or not cost represents lowest bid. Include reason(s) for not soliciting current quotes.
- II. Engineering Estimate: Include rationale for quote and reason for not soliciting current quotes.
- III. If applicable, the following additional information must be disclosed in the applicant's cost application:
 - a. Special test equipment to be fabricated by the Recipient for specific requirements in the agreement.

- b. Standard equipment to be acquired and modified to meet specific requirements, including acquisition and modification costs, listed separately.
- c. Existing equipment to be modified to meet specific research requirements, including modification costs. Do not include equipment the organization will purchase with its funds if the equipment will be capitalized for Federal income tax purposes. Proposed permanent equipment purchases during the final year of an award must be limited and fully justified.

IV. Grants and cooperative agreements may convey title to an eligible institution for permanent equipment purchased with project funds. At the discretion of the Contracting/Grants Officer, the agreement may provide for retention of the title by the Government or may impose conditions governing the equipment conveyed to the organization per the governing laws and regulations.

c. Travel: Forecasts of travel expenditures (domestic and foreign) that identify the destination (if known) and the various cost elements (airfare, mileage, per diem rates, etc.) must be submitted. The costs should be in sufficient detail to determine the reasonableness of such costs. Allowance for air travel normally will not exceed the cost of round-trip, economy air accommodations. Specify the type of travel and its relationship to the requirements of the agreement. e. Participant Support Costs: This budget category refers to costs of transportation, per diem, stipends, and other related costs for participants or trainees (but not employees) in connection with DoD-sponsored conferences, meetings, symposia, training activities, and workshops. Generally, indirect costs are not allowed on participant support costs. The number of participants to be supported should be entered in the parentheses on the budget form. These costs should also be justified in the budget justification page(s) attached to the cost application.

d. Materials, Supplies, and Consumables: A general description and total estimated cost of expendable equipment and supplies are required. The basis for developing the cost estimate (vendor quotes, invoice prices, engineering estimate, purchase order history, etc.) must be included. If possible, provide a material list.

e. Publication, Documentation, and Dissemination: The budget may request funds for the costs of preparing, publishing, or otherwise making available to others the findings and products of the work conducted under an agreement, including costs of reports, reprints, page charges, or other journal costs (except costs for prior or early publication); necessary illustrations, cleanup, documentation, storage, and indexing of data and databases; and development, documentation, and debugging of software.

f. Consultant Costs: Applicants normally are expected to utilize the services of their own staff to the maximum extent possible in managing and performing the project's effort. If the need for consultant services is anticipated, the nature of proposed consultant services should be justified and included in the technical application narrative. The cost application should include the names of consultant(s), primary organizational affiliation, each individual's expertise, daily compensation rate, number of days of expected service, and estimated travel and per diem costs.

g. Computer Services: The cost of computer services, including computer-based retrieval of scientific, technical, and educational information, may be requested. A justification/explanation based on the established computer service rates at the proposing organization should be included. The budget also may request costs, which must be shown to be reasonable, for leasing automatic data processing equipment. The purchase of computers or associated hardware and software should be requested as items of equipment.

h. Subawards (Subcontracts or Subgrants): A precise description of services or materials that are to be awarded by a subaward must be provided. For subawards totaling \$10,000 or more, provide the following specific information:

- I. A clear description of the work to be performed.
- II. If known, the identification of the proposed sub-awardee and an explanation of why and how the sub-awardee was selected or will be selected; The identification of the type of award to be used (cost reimbursement, fixed price, etc.);
- III. Whether or not the award will be competitive and, if noncompetitive, rationale to justify the absence of competition; and
- IV. A detailed cost summary.

i. ODCs: Itemize and provide the basis for proposed costs for other anticipated direct costs such as communications, transportation, insurance, and rental of equipment other than computer related items. Unusual or expensive items must be fully explained and justified.

j. Profit/ Fee: Profit/fee is not allowed for the Recipient of or subaward to an assistance instrument, where the principal purpose of the activity to be carried out is to stimulate or support a public purpose (i.e., to provide assistance), rather than acquisition (i.e., to acquire goods and services for the direct benefit of the Government). A subaward is an award of financial assistance in the form of money, or property in lieu of money, made under a DoD grant or cooperative agreement by a Recipient to an eligible subrecipient. The term includes financial assistance for substantive program performance by the Subrecipient of a portion of the program for which the DoD grant or cooperative agreement was made. It does not include the Recipient's procurement of goods and services needed to carry out the program.

Bibliography and Reference Cited (Field 9 on the form) – Attach a listing of applicable publications cited in above sections.

Facilities and Other Resources (Field 10 on the form) - The applicant is to provide a description of any facilities planned to be used for the project, whether at the home institution, a partner facility, or during the Innovation Summit Series. A note of support guaranteeing access to these facilities on behalf of their primary management should also be included. Attach this information at Field 10.

Equipment (Field 11 on the form) - The applicant is to include a listing of equipment available to support the application. Any Government equipment necessary for performance is to be clearly identified. Attach this information at Field 11.

Other Attachments (Field 12 on the form) are as follows:

1. Attached the completed certifications.
2. FORM: SF-424 Research & Related Senior/Key Person Profile (Expanded) (Mandatory) – The Degree Type and Degree Year fields on the Research and Related Senior/Key Person Profile (Expanded) form will be used by DoD as the source for career information. In addition to the required fields on the form, applicants must complete these two fields for all individuals that are identified as

having the project role of PD/PI or Co- PD/PI on the form. Additional senior/key persons can be added by selecting the “Next Person” button.

3. FORM: SF-424 (R&R) Personal Data (Mandatory) - This form will be used by DoD as the source of demographic information, such as gender, race, ethnicity, and disability information for the Project Director/Principal Investigator and all other persons identified as Co-Project Director(s)/Co-Principal Investigator(s). Each application must include this form with the name fields of the Project Director/Principal Investigator and any Co-Project Director(s)/Co-Principal Investigator(s) completed; however, provision of the demographic information in the form is voluntary. If completing the form for multiple individuals, each Co-Project Director/Co-Principal Investigator can be added by selecting the “Next Person” button. The demographic information, if provided, will be used for statistical purposes only and will not be made available to merit reviewers. Applicants who do not wish to provide some or all of the information should check or select the “Do not wish to provide” option.

4. SF-LLL – Disclosure of Lobbying Activities. If applicable, attach a complete SF-LLL at Field 11 of the R&R Other Project Information form. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

5. Complete the Representations under DoD Assistance Agreements: Appropriations Provisions on Tax Delinquency and Felony Convictions (this can be found under National Policy Requirements)

6. With the application, the Applicant must provide the following “Privacy Act Statement” consent form for each Covered Individual in the proposal. This form must also signed by the Applicant as that Individual’s Sponsor.

Privacy Act Statement

Army Futures Command or Department of the Army

Application for Federal Assistance

Authority: Government Paperwork Elimination Act (Pub. L. 105-277, 44 U.S.C. 3504); Executive Order 12372, Intergovernmental review of Federal Programs (47 FR 30959); 42 U.S. Code § 6605 – Disclosure of funding sources in applications for Federal research and development awards; Public Law 117-167, CHIPS and Science Act; Public Law 116-92, National Defense Authorization Act for Fiscal Year 2020; 5 U.S.C. 9101, Access to Criminal History for National Security and Other Purposes 5 CFR §1320.8, Agency collection of information Responsibility; 18 U.S.C. § 1001, False Statements, Concealment; E.O. 13478, Amendments to Executive Order 9397 Related to Federal Use of social Security Numbers; NSPM-33, National Security Presidential Memorandum 33 on National Security for United States Research and Development; DoD-D 5240.01, DoD Intelligence Activities; DoD-I 5200.02, Department of Defense Personnel Security Program; Army Regulation 381-10, U.S. Army Intelligence Activities

Purpose: The information collected may be used in processing, investigating, and maintaining records relevant to Federal Assistance awarded by the Department of the Army. Records in these systems will be used to ensure Army sponsored and/or awarded federal grants, assistance, contracts, and/or benefits are awarded to responsible parties, entities, and individuals.

Routine Uses: To contractors, grantees, experts, consultants, students, and others performing or working on a contract, service, grant, cooperative agreement, or other assignment for the Federal Government when necessary to accomplish an agency function.

To the appropriate Federal, State, local, territorial, tribal, foreign, or international law enforcement authority or other appropriate entity where a record, either alone or in conjunction with other information, indicates a violation or potential violation of law, whether criminal, civil, or regulatory in nature.

DoD Blanket Routine Use (<http://dpcl.d.defense.gov/privacy>)

Effect of not providing information: Providing information to the Department of the Army is voluntary. However, 42 U.S. Code § 6605, which imposes certain disclosure requirements in connection with Federal research and development awards, provides various enforcement mechanisms for non-compliance. One such mechanism, which the Department of the Army intends to pursue here, is rejection of such applications.

Proposal Title (or grants.gov number): _____

Acknowledgment of consent:

Covered individual (Signature): _____ Date: _____

Covered individual (Name print): _____

Institution's Authorized Representative (Signature): _____ Date: _____

Institution's Authorized Representative (Name print): _____

Institution Name: _____

Application Receipt Notices

Grants.gov: After an application is submitted to Grants.gov, the AOR will receive a series of three emails from Grants.gov. The first two emails will be received within 24 to 48 hours after submission. The first email will confirm time of receipt of the application by the Grants.gov system and the second will indicate that the application has either been successfully validated by the system prior to transmission to the grantor agency or has been rejected due to errors. A third email will be received once the grantor agency has confirmed receipt of the application.

Reference https://www.grants.gov/help/html/help/GetStarted/Get_Started.htm from the Grants.gov User Guide for information on how to track your application package. For the purposes of this FOA, an applicant's application is not considered received by the Government until the AOR receives email #3.

E. APPLICATION REVIEW / EVALUATION INFORMATION

The following represents the evaluation criteria for this FOA:

Factor 1: Scientific Merit and Relevance: Evaluation of this factor will concentrate on the overall scientific and technical merit, creativity, innovation, and flexibility of the proposed research considering the current state-of-the-art of tactical behaviors for multiagent systems-relevant scientific topics, and the expected outcomes based on the timeline of execution. The scientific merit will be evaluated regarding the specific research area to be addressed in this annual Funding Opportunity. Evaluation of this factor will also concentrate on the long-term relevance of the proposed research and the likelihood that the proposed research will address scientific challenges and research barriers facing the Army and commercial sectors.

Factor 2: Research Plan and Plan for Collaboration: Evaluation of this factor will concentrate on the Applicant's strategies, plans and experience in fostering collaborative research and managing collaborative research programs as set forth in this FOA. Evaluation of this factor will include evidence of previous successful collaborative efforts, plans for collaboration and synergy with ARL component research programs and at their experimental events, as well as approaches to data/coding/model sharing and transition of products that create collaborative potential amongst government, academic, and industry partners.

Factor 3: Experience and Qualifications of Scientific Staff and Junior Investigator Development: Evaluation of this factor will concentrate on the qualifications, capabilities, availability, proposed level of effort, and experience of both the Applicant's key research personnel (individually and as a whole), their relevant past accomplishments, and their ability to achieve the proposed technical objectives. Key personnel are expected to be substantially and meaningfully engaged in the research and the proposed level of effort for key personnel reflected in the proposal should be commensurate with and demonstrate such engagement. The extent to which the Applicant's proposed facilities and equipment will contribute to the accomplishment of the proposed research will be evaluated, including the nature, quality, relevance, availability, and access to state-of-the-art research facilities and equipment.

Factor 4: Cost. While this area will not be weighted, evaluation of this area will consider cost realism, cost reasonableness, and affordability within funding constraints. The Government may adjust the cost of the total proposed effort as deemed necessary to reflect what the effort should cost. These adjustments will consider the task undertaken and approach proposed. These adjustments may include

upward or downward adjustments to proposed labor hours, labor rates, quantity of materials, price of materials, overhead rates, and G&A, etc.

Proposal Review and Selection Process

All timely and compliant Proposal submissions will be evaluated in accordance with the evaluation criteria set forth in this FOA. Proposals are expected to be evaluated by a group of qualified scientists and managers from the Government. No other material outside of a Proposal will be provided to those evaluating proposals. An initial review of the proposals will be conducted to ensure compliance with the requirements of this FOA. Failure to comply with the requirements of the FOA may result in a proposal not being evaluated and receiving no further consideration for award. Proposals that are timely and in compliance with the requirements of the FOA will be evaluated in accordance with merit based, competitive procedures. These procedures will include evaluation factors that will be evaluated using an adjectival and color rating system as follows:

OUTSTANDING (blue): The proposal is evaluated as outstanding for this factor. The proposal includes one or more significant strengths that are not offset by weaknesses.

GOOD (purple): The proposal is evaluated as good for this factor. The proposal includes some strengths that are not offset by weaknesses.

ACCEPTABLE (green): The proposal is evaluated as acceptable for this factor. Any strengths and weaknesses in the proposal balance out.

MARGINAL (yellow): The proposal is evaluated as marginal for this factor. While the proposal may or may not contain some strengths, and strengths are more than offset by any weakness or weaknesses.

UNACCEPTABLE (red): The proposal is evaluated as unacceptable for this factor. While the proposal may or may not contain some strengths, and strengths are offset by any significant weakness or weaknesses.

A Review Team, consisting of a qualified group of Government scientists and managers, will evaluate the Proposals and provide the results of that evaluation to the decision maker for the Government. The decision maker will make decisions concerning award selection. The Government will make award to the Applicant(s), whose proposal conforms to this FOA and offers the most-favorably rated proposal(s) based on the evaluation criteria noted above. The Government reserves the right not to make an award should no acceptable Proposal be submitted. The Government also reserves the right to negotiate with an Applicant to re-scope their proposal or optional proposal technical focus, period of performance, and associated costs in order to maximize the available program funding, balance of research topics across the program, and overall impact to the program resulting in the development of an annual program plan to cover the optional research to be performed and the period of performance of that research.

Army Research Risk Assessment. Each proposal with a recommendation to “select” in accordance with II.E.2.c above, whose costs have been determined to be reasonable and realistic in accordance with II.E.2.d above, for which funds are available, and where a grant or cooperative agreement will be the award instrument type, will be subject to an Army Research Risk Assessment prior to award.

- i. The Army Research Risk Assessment Program. The Army Research Risk Assessment Program (ARRP) is an adaptive risk management security program applied to Army-funded research designed to help protect Army Science and Technology (S&T) by identifying possible vectors of undue foreign influence.

In order to identify and mitigate undue foreign influence as required by federal law and policy, the Army will perform a research risk assessment of each proposal selected based on the criteria above for consideration of a fundamental research grant or cooperative agreement award. ARRP risk assessments for these subject proposals will be developed for all proposed Senior/Key personnel, (also referred to as “Covered Individuals”). These risk assessments will be based on information disclosed in the Standard Form (SF) 424, “Senior/Key Person Profile (Expanded),” any of its accompanying or referenced documents, publicly available information, and information contained in internal Army databases. Nationality or citizenship is not a factor in the risk assessment.

ARRP has a risk matrix which identifies risk factors and resulting risk ratings. The matrix generally looks at four factors, or risk areas: participation in foreign talent programs; denied entity list affiliation or association (see <https://www.bis.doc.gov/index.php/the-denied-persons-list> and <https://www.bis.doc.gov/index.php/policy-guidance/lists-of-parties-of-concern/entity-list>); funding sources to include conflict of interest or conflict of commitment, or funding from a strategic competitor; and foreign influence showing a pattern or history of affiliation, association, or collaboration with a foreign institution, person or entity from a U.S. strategic competitor. The matrix is set forth below:

Rating	Identified Specific Actions of the Senior/ Key Personnel			
	Foreign Talent Program	Denied Entities	Funding	Foreign Institutions
<u>HIGH</u>	Indicators of active (ongoing) participation or sponsorship in a strategic competitor Foreign Talent Program	Indicators of an active (ongoing) affiliation or past affiliation or present association with an entity on the U.S. Gov’t denied entity or person list or EO 13959 or subsequent similar issuances	Indicators of active (ongoing) conflict of interest, conflict of commitment, or pattern of direct funding from a strategic competitor or country with history of targeting U.S. research or technology	Indicators of active (ongoing) direct affiliation, association or collaboration with a foreign institution, person, or entity from a strategic competitor
<u>MODERATE</u>	Indicators of past participation in a Foreign Talent Program with a U.S. strategic competitor, or country with a history of targeting U.S.	Indicators of past association with an entity identified in the U.S. Gov’t denied entity or person list or EO 13959 or subsequent similar issuances	Indicators of any history or nonconsecutive pattern of, conflict of interest, conflict of commitment, or funding from a strategic	Indicators of a history or pattern of association or collaboration with foreign institution, person, or entity from a strategic competitor or

	research or technology		competitor or country with history of targeting U.S. research or technology	country with history of targeting U.S. research or technology
<u>LOW</u>	No participation in a Foreign Talent Program	No indicators of past or current association or affiliation with an entity on the U.S. Gov't denied entity or person list or EO 13959 or subsequent similar issuances	No indicators of past funding from a strategic competitor or country with history of targeting U.S. research or technology	No indicators of an association or collaboration with a foreign institution, person, or entity from a strategic competitor or country with history of targeting U.S. research or technology

- **Affiliation** is academic, professional, or institutional appointments or positions with a foreign government-connected entity, whether full-time, part-time, or voluntary (including adjunct, visiting, honorary, or lectures/visits) where direct monetary or non-monetary reward is involved.
- **Association** is academic, professional, or institutional appointments or positions with a foreign government-connected entity, whether full-time, part-time, or voluntary (including adjunct, visiting, honorary, or lectures/visits) where no direct monetary or non-monetary reward is involved.
- **Collaboration** is academic, professional, or institutional agreement to jointly work together with a foreign government connected entity, whether full-time, part-time, or voluntarily, in an official or unofficial capacity. Co-authorship in research endeavors is an example of collaboration.
- **Strategic competitors** are those adversaries identified in the current year Annual Threat Assessment report from Director of National Intelligence. The 2021 assessment was published on April 9, 2021 and can be found at <https://www.dno.gov/>.
- **Conflict of Interest and Conflict of Commitment** are defined in NSPM-33 and in the CONOP as well as the ARRP Policy memorandum.
- **Senior/Key Personnel** are those who (a) contribute in a substantive, meaningful way to the scientific development or execution of a research and development project proposed to be carried out with a research and development award from a Federal research agency; and (b) are designated as a covered individual by the Federal research agency concerned.

ARRP risk ratings range from LOW to HIGH depending on the amount, type, and timing of foreign associations or affiliations that could constitute a foreign-influenced “Conflict of Interest” or “Conflict of Commitment,” as defined by National Security Presidential Memorandum 33 (NSPM-33).

Once the research risk assessments are performed, the Army risk acceptance authority has several courses of action available for consideration. These courses of action are as follows:

Course of Action 1 - The Army risk acceptance authority may accept the risk rating that results from the risk assessment process and proceed with the award. This typically happens with proposals with risk ratings of “LOW” but could also happen with the other risk ratings. In Course of Action 1, the applicant will not be required to do anything related to the risk assessment process or the assigned risk rating.

Course of Action 2 - The Army risk acceptance authority may accept the risk rating with some research protection requirements added to the grant or cooperative agreement award. This typically happens with proposals with risk ratings of “MODERATE” but could also happen with the other risk ratings. Also, typically, these added research protection requirements could include, but be limited to the following in the grant or cooperative agreement award:

- The University's Security Office shall provide the Principal Investigator and key personnel related to this award training on foreign talent recruitment programs and threat awareness and reporting requirements.
- The University shall disclose to the Army Research Laboratory Security Office and Grants Officer all international travel, i.e., all international travel completed as part of any university business, by the Principal Investigator and key personnel related to this award instrument prior to travel.
- The University shall report to the Army Research Laboratory Security Office and Grants Officer all inquiries by foreign operatives or suspected foreign operatives into research associated with the award.
- The University is encouraged to utilize students without potential conflicts of interest or conflicts of commitment as identified in U.S. National Security Presidential Memorandum (NSPM-33).

Under Course of Action 2, the applicant will be asked to sign the grant or cooperative agreement prior to award, confirming agreement to these added requirements. Should the applicant not agree to these added research protection requirements, the Army risk assessment authority may decide not to award.

Course of Action 3 - The Army risk acceptance authority is not willing to accept the risk assigned as a result of the assessment process. In this case, the applicant will be provided an opportunity to provide a risk mitigation plan. This typically happens with proposals with risk ratings of “HIGH” but could also happen with the other risk ratings. In Course of Action 3, the applicant will be informed of the risk rating assigned during the risk assessment process as well as the block(s) on the matrix where the review resulted in some type of finding that contributed to the assigned risk rating. Should the applicant choose to not submit a risk mitigation plan, the Army risk assessment authority may decide not to

award. Should the applicant choose to submit a risk mitigation plan, the Army will review such plan. As a result of this review, the Army risk acceptance authority may then be willing to accept the risk assigned with the mitigation plan and proceed with the award or the Army risk acceptance authority may not be willing to accept the risk and may decide not to award. Further, should the risk mitigation plan include proposal revisions that affect those aspects of the proposal included in the review or selection process under SECTION II.E.2.c, the original proposal evaluation will be reviewed and revised as appropriate based on the proposal revisions.

ii. Actions Required by Applicants.

- I. By submission of this application and authorized signature on the SF 424 (R&R) Form, the Applicant agrees to comply with the following requirements:
 - a. To certify that each covered individual who is listed on the application has been made aware: (1) of all relevant disclosure requirements, including the requirements of 42 U.S.C. § 6605; and (2) that false representations may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§287, 1001, 1031 and 31 U.S.C. §§ 3729-3733 and 3802. See National Science and Technology Council Guidance for Implementing National Security Presidential Memorandum 33 (NSPM-33) on National Security Strategy for United States Government-Supported Research and Development (January 2022), at p. 7 (available at <https://www.whitehouse.gov/wp-content/uploads/2022/01/010422-NSPM-33-Implementation-Guidance.pdf>).
 - b. To establish and maintain an internal process or procedure to address foreign talent programs, conflicts of commitment, conflicts of interest, and research integrity.
 - c. To exercise due diligence to identify Foreign Components or participation by Senior/Key Personnel in Foreign Government Talent Recruitment Programs and agree to share such information with the Government upon request.
- II. With the application, the Applicant must provide a completed “Privacy Act Statement” consent form for each Covered Individual that is also signed by the Applicant as that Individual’s Sponsor. The “Privacy Act Statement” form is included at page number 22 of this FOA.
- III. During the award period of performance:

- a. If, at any time, during performance of this award, the Recipient learns that its Senior/Key Research Personnel (including any subawardee personnel who receive this designation) are or are believed to be participants in a Foreign Government Talent Program or have Foreign Components with a strategic competitor or country with a history of targeting U.S. technology for unauthorized transfer, the recipient will notify the Government or Grants Officer within 5 business days of awareness.
- b. This disclosure must include specific information as to the personnel involved and the nature of the situation and relationship. The Government will review this information and conduct any necessary fact-finding or discussion with the Recipient. The Government’s determination on disclosure may include acceptance, mitigation, or termination of the award.

- c. Failure of the Recipient to reasonably exercise due diligence to discover or ensure that neither it nor any of its Senior/Key Research Personnel involved in the subject award are participating in a Foreign Government Talent Program or have a Foreign Component with a strategic competitor or country with a history of targeting U.S. technology for unauthorized transfer may result in the Government exercising remedies in accordance with federal law and regulation.
- d. The provisions concerning this disclosure will be included in each award.
- e. The Recipient will be required to flow down this provision to all sub awardees who have personnel designated as Senior/Key Research Personnel as a result of their involvement in the performance of the research.

iii. Actions Required by Covered Individuals.

Federal law requires that all current and pending research support, as defined by 42 U.S.C. §6605, must be disclosed at the time of proposal submission, for all covered individuals. The Government may require an updated disclosure during the performance of any research project selected for funding. The Government will require an updated disclosure whenever covered individuals are added or identified as performing under the funded project. See definition of “Covered Individuals” below.

Covered Individuals are also required to sign the “Privacy Act Statement” and provide such signed statement to the applicant for submission with the proposal.

Any decision to accept a proposal for funding under this announcement will include full reliance on the individual’s statements. Failure to report fully and completely all sources of project support and outside positions and affiliations may be considered a material statement within the meaning of the False Claims Act, 31 U.S.C. 3729, and constitute a violation of Federal law.

iv. Privacy Act Compliance. All information collected and developed for the purpose of conducting ARRPs risk assessments will be maintained in accordance with the following authorities:

- Office of Personnel Management (OPM) System of Records Notice (SORN) GOVT-1. This SORN governs information collected from federal grantees for the purpose of conducting a national security investigation or carrying out other lawful statutory, administrative, or investigative purposes of the agency, to the extent the information is relevant and necessary to the requesting agency’s decision.
- Department of the Army (DA) SORN A0381-20b-DAMI (Feb. 10, 2009, 74 F.R. 6596). This SORN applies to information contained in systems used by the Department of the Army to develop ARRPs risk assessments.
- 32 C.F.R. Appendix A to Part 310, Paragraph N: DoD Blanket Routine Uses. Pursuant to this provision, a record from a system of records maintained by a Component may be disclosed as a routine use outside the DoD or the U.S. Government for the purpose of counterintelligence

activities authorized by U.S. law or Executive order or for the purpose of enforcing laws that protect the national security of the United States.

v. Definitions

- Covered Individual. An individual who contributes in a substantive, meaningful way to the scientific development or execution of a research and development project proposed to be carried out with a research and development award from a Federal research agency; and is designated as a covered individual by the Federal research agency concerned. See 42 U.S.C. § 6605, Definitions. (For purposes of this BAA, “covered individuals” are all Senior/Key Personnel.)
- Senior/Key Research Personnel. This term includes the Principal Investigator (PI) and other individuals who contribute to the scientific development or execution of a project in a substantive, measurable way, whether or not they receive salaries or compensation under the award. These include individuals whose absence from the project would be expected to impact the approved scope of the project. (For purposes of this BAA, “Senior/Key Personnel” are all considered “covered individuals.”)
- Foreign Associations and Affiliations. Association is defined as collaboration, coordination or interrelation, professionally or personally, with a foreign government-connected entity where no direct monetary or non-monetary reward is involved. Affiliation is defined as collaboration, coordination, or interrelation, professionally or personally, with a foreign government-connected entity where direct monetary or non-monetary reward is involved.
- Foreign Government Talent Recruitment Programs. In general, these programs include any foreign-state-sponsored attempt to acquire U.S. scientific-funded research or technology through foreign government-run or funded recruitment programs that target scientists, engineers, academics, researchers, and entrepreneurs of all nationalities working and educated in the U.S. Distinguishing features of a Foreign Government Talent Recruitment Program may include:
 - Compensation, either monetary or in-kind, provided by the foreign state to the targeted individual in exchange for the individual transferring their knowledge and expertise to the foreign country. In-kind compensation may include honorific titles, career advancement opportunities, promised future compensation or other types of remuneration or compensation.
 - Recruitment, in this context, refers to the foreign-state-sponsor’s active engagement in attracting the targeted individual to join the foreign-sponsored program and transfer their knowledge and expertise to the foreign state. The targeted individual may be employed and located in the U.S. or in the foreign state.
 - Contracts for participation in some programs that create conflicts of commitment and/or conflicts of interest for researchers. These contracts include, but are not limited to, requirements to attribute awards, patents, and projects to the foreign institution, even if conducted under U.S. funding, to recruit or train other talent

recruitment plan members, circumventing merit-based processes, and to replicate or transfer U.S.-funded work in another country.

- Many, but not all, of these programs aim to incentivize the targeted individual to physically relocate to the foreign state. Of particular concern are those programs that allow for continued employment at U.S. research facilities or receipt of U.S. Government research funding while concurrently receiving compensation from the foreign state.
- Foreign Government Talent Recruitment Programs do **not** include research agreements between the University and a foreign entity, unless that agreement includes provisions that create situations of concern addressed elsewhere in this section; agreements for the provision of goods or services by commercial vendors; or invitations to attend or present at conferences.
- Conflict of Interest. A situation in which an individual, or the individual's spouse or dependent children, has a financial interest or financial relationship that could directly and significantly affect the design, conduct, reporting, or funding of research.
- Conflict of Commitment. A situation in which an individual accepts or incurs conflicting obligations between or among multiple employers or other entities. Common conflicts of commitment involve conflicting commitments of time and effort, including obligations to dedicate time in excess of institutional or funding agency policies or commitments. Other types of conflicting obligations, including obligations to improperly share information with, or withhold information from, an employer or funding agency, can also threaten research security and integrity and are an element of a broader concept of conflicts of commitment.
- Foreign Component. Performance of any significant scientific element or segment of a program or project outside of the U.S., either by the University or by a researcher employed by a foreign organization, whether or not U.S. government funds are expended. Activities that would meet this definition include, but are not limited to: involvement of human subjects or animals; extensive foreign travel by University research program or project staff for the purpose of data collection, surveying, sampling, and similar activities; collaborations with investigators at a foreign site anticipated to result in co-authorship; use of facilities or instrumentation at a foreign site; receipt of financial support or resources from a foreign entity; or any activity of the University that may have an impact on U.S. foreign policy through involvement in the affairs or environment of a foreign country.
- Strategic Competitor. A nation, or nation-state, that engages in diplomatic, economic or technological rivalry with the United States where the fundamental strategic interests of the U.S are under threat.

Recipient Qualification

The Grants Officer is responsible for determining a Recipient's qualification prior to award. In general, a Grants Officer will award grants or CAs only to qualified Recipients that meet the standards at 32 CFR 22.415. To be qualified, a potential Recipient must:

- (1) Have the management capability and adequate financial and technical resources, given those that would be made available through the grant or cooperative agreement, to execute the program of activities envisioned under the grant or cooperative agreement;
- (2) Have a satisfactory record of executing such programs or activities (if a prior Recipient of an award);
- (3) Have a satisfactory record of integrity and business ethics; and
- (4) Be otherwise qualified and eligible to receive a grant or cooperative agreement under applicable laws and regulations (see 32 CFR 22.420(c)). Applicants are requested to provide information with proposal submission to assist the Grants Officer's evaluation of Recipient qualification.

In accordance with OMB guidance in parts 180 and 200 of Title 2, CFR, it is DoD policy that DoD Components must report and use integrity and performance information in the Federal Awardee Performance and Integrity Information System (FAPIIS), or any successor system designated by OMB, concerning grants, cooperative agreements, and TIAs as follows:

If the total Federal share will be greater than the simplified acquisition threshold on any Federal award under a notice of funding opportunity (see 2 CFR 200.88 Simplified Acquisition Threshold):

- (5) The Federal awarding agency, prior to making a Federal award with a total amount of Federal share greater than the simplified acquisition threshold, will review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (currently FAPIIS) (see 41 U.S.C. 2313);
- (6) An applicant, at its option, may review information in the designated integrity and performance systems accessible through SAM and comment on any information about itself that a Federal awarding agency previously entered and is currently in the designated integrity and performance system accessible through SAM;
- (7) The Federal awarding agency will consider any comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under Federal awards when completing the review of risk posed by applicants as described in 2 CFR 200.205 Federal awarding agency review of risk posed by applicants.

F. AWARD ADMINISTRATION INFORMATION

Award Notices

Should your Proposal be selected for award, you will be contacted telephonically or via email by the Grants Officer or his/her representative to discuss additional information required for award. This may include representations and certifications, revised budgets or budget explanations, and other information as applicable to the proposed award. The anticipated start date will be determined at that time. The award document signed by the Government Grants Officer is the official and authorizing award instrument.

Administrative and National Policy Requirements

a. Each award under this announcement will be governed by the general award terms and conditions in effect at the time of the award that conform to DoD's implementation of OMB guidance applicable to financial assistance in 2 CFR part 200, "Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards." The DoD Research and Development General Terms and Conditions (latest version, September 2020) are located at <https://www.onr.navy.mil/work-with-us/manage-your-award/manage-grant-award/grants-terms-conditions>. These terms and conditions are incorporated by reference in this announcement.

b. You must comply with all applicable national policy requirements. The key national policy requirements that may relate to an award under this FOA are included in the terms and conditions specified in paragraph 2.a above.

Certification Required for Grant and Cooperative Agreement Awards

c. By electronically signing the SF-424, the applicant affirms its agreement with the following certification.

The certification at Appendix A to 32 CFR Part 28 regarding lobbying is the only certification required at the time of application submission for a grant or cooperative agreement award. The certification is as follows:

"By signing and submitting an application that may result in the award of a grant exceeding \$100,000, the prospective awardee is certifying, to the best of his or her knowledge and belief that:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employ of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit SF-LLL, "Disclosure of Lobbying Activities" in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, and loans, or cooperative agreements) and that all Subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, Title 31, U.S. Code. Any person who fails the required certification shall be subject to a civil penalty or not less than \$10,000.00 and not more than \$100,000.00 for each failure.

d. Representations Required for Grant and Cooperative Agreement Awards

Appropriations Provisions on Tax Delinquency and Felony Conviction

Check either “is” or “is not” for each of these two representations, as appropriate for the proposing institution, include the AOR signature and point of contact information, and attach the representation page to Field 12 of the SF-424 Research & Related Other Project Information form. The page for these representations is provided with the application materials that are available for download at Grants.gov.

Representations:

The applicant is () is not () a “Corporation” meaning any entity, including any institution of higher education, other nonprofit organization, or for-profit entity that has filed articles of incorporation. If the applicant is a “Corporation” please complete the following representations: The applicant represents that it is () or is not () a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

(1) The applicant represents that it is () is not () a corporation that was convicted of a criminal violation under any Federal law within the preceding 24 months.

(2) NOTE: If an applicant responds in the affirmative to either of the above representations, the applicant is ineligible to receive an award unless the agency suspension and debarment official (SDO) has considered suspension or debarment and determined that further action is not required to protect the Government’s interests. The applicant therefore should provide information about its tax liability or conviction to the agency’s SDO as soon as it can do so, to facilitate completion of the required considerations before award decisions are made.

OMB CONTROL NUMBER: 0704-0494 OMB

EXPIRATION DATE: 11/30/2019

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to the Department of Defense, Washington Headquarters Services, Executive Services Directorate, Directives Division, 4800 Mark Center Drive, East Tower, Suite 02G09, Alexandria, VA 22350-3100 [0704-0494]. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Prohibition on Contracting with Entities that Require Certain Internal Confidentiality

Prohibition on Contracting with Entities that Require Certain Internal Confidentiality Agreements

Agreement with the representation below will be affirmed by checking the “I agree” box in block 17 of the SF-424 (R&R) as part of the electronic application submitted via Grants.gov. The representation reads as follows:

By submission of its application, the applicant represents that it does not require any of its employees, contractors, or Subrecipients seeking to report fraud, waste, or abuse to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting those employees, contractors, Subrecipients from lawfully reporting that waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

Note that: (1) the basis for this representation is a prohibition in Section 743 of the Financial Services and General Government Appropriations Act, 2015, Pub. L. 113-235) on provision of funds through grants and cooperative agreements to entities with certain internal confidentiality agreements or statements; and (2) Section 743 states that it does not contravene requirements applicable to SF-312, Form 4414, or any other form issued by a Federal department or agency governing the nondisclosure of classified information.

Section 889 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019

Section 889 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2019 (Public Law 115-232) prohibits the head of an executive agency from obligating or expending loan or grant funds to procure or obtain, extend, or renew a contract to procure or obtain, or enter into a contract (or extend or renew a contract) to procure or obtain the equipment, services, or systems prohibited systems as identified in section 889 of the NDAA for FY 2019.

(1) In accordance with 2 CFR 200.216 and 200.471, all awards that are issued on or after August 13, 2020, recipients and subrecipients are prohibited from obligating or expending loan or grant funds to:

1. Procure or obtain;
2. Extend or renew a contract to procure or obtain; or,
3. Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115- 232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).
 - (a) For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
 - (b) Telecommunications or video surveillance services provided by such entities or using such equipment.

(c) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

(2) In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

(3) See Public Law 115-232, section 889 for additional information.

COVERED FOREIGN COUNTRY means the People's Republic of China.

G. AGENCY CONTACTS

All questions or comments concerning this FOA should be submitted via email to usarmy.adelphi.devcom-arl.mbx.tbam-crp-questions@army.mil on or before the deadline (see Event timeline above). Questions and comments should be concise and to the point. In addition, the relevant part and paragraph of the FOA must be referenced. Responses to non-proprietary questions received by the specified date will be posted to the TBAM-CRP website for the benefit of all interested parties. Should an Applicant have questions they believe are of a proprietary nature, the Applicant must clearly state so and identify and mark the proprietary information in the question when submitted. Answers to questions of a proprietary nature will be provided via email directly to the requestor of the question and not posted on the TBAM-CRP website.

H. OTHER

HUMAN SUBJECTS:

Assistance Instruments:

a. The Recipient must protect the rights and welfare of individuals who participate as human subjects in research under this award and comply with the requirements at 32 CFR part 219, Department of Defense Instruction (DoDI) 3216.02, 10 U.S.C. 980, and when applicable, Food and Drug Administration (FDA) regulations.

b. The Recipient must not begin performance of research involving human subjects, also known as human subjects research (HSR), that is covered under 32 CFR part 219, or that meets exemption criteria under 32 CFR 219.101(b), until you receive a formal notification of approval from a DoD Human Research Protection Official (HRPO). Approval to perform HSR under this award is received after the HRPO has performed a review of the Recipient's documentation of planned HSR activities and has officially furnished a concurrence with the Recipient's determination as presented in the

documentation. In order for the HRPO to accomplish this concurrence review, the Recipient must provide sufficient documentation to enable his or her assessment as follows:

- I. If the HSR meets an exemption criterion under 32 CFR 219.101(b), the documentation must include a citation of the exemption category under 32 CFR 219.101(b) and a rationale statement.
- II. If the Recipient's activity is determined as "non-exempt research involving human subjects", the documentation must include:
 - a. Assurance of Compliance (i.e., Department of Health and Human Services Office for Human Research Protections (OHRP) Federal Wide Assurance (FWA)) appropriate for the scope of work or program plan; and
 - b. Institutional Review Board (IRB) approval, as well as all documentation reviewed by the IRB to make their determination.

The HRPO retains final judgment on what activities constitute HSR, whether an exempt category applies, whether the risk determination is appropriate, and whether the planned HSR activities comply with the requirements in paragraph (a) of this section. The Recipient must notify the HRPO immediately of any suspensions or terminations of the Assurance of Compliance. DoD staff, consultants, and advisory groups may independently review and inspect the Recipient's research and research procedures involving human subjects and based on such findings, DoD may prohibit research that presents unacceptable hazards or otherwise fails to comply with DoD requirements. Definitions for terms used in this article are found in DoDI 3216.02.

CONFUCIUS INSTITUTES:

Section 1062 of the National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2021 prohibits the Department from providing funding to any U.S. institution of higher education housing a Confucius Institute unless that institution receives a waiver from the Secretary of Defense. This prohibition does not apply to direct funding to students attending U.S. institutions of higher education. International institutions that host are not subject to the prohibition in section 1062 of the NDAA for FY 2021 and thus do not require waivers to receive Department of Defense (DoD) funding. The prohibition on funding goes into effect on October 1, 2023.

I: PUBLISHED AND PREPRINT WORK FROM PRIOR CYCLES

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