

Defense Human Resources Activity (DHRA)
23.4 DoD Small Business Innovation Research (SBIR)
Proposal Submission Instructions

September 20, 2023: Topic issued for pre-release

October 4, 2023: OSD begins accepting proposals via DSIP

October 24, 2023: DSIP Topic Q&A closes to new questions at 12:00 p.m. ET

November 7, 2023: Deadline for receipt of proposals no later than 12:00 p.m. ET

INTRODUCTION

The Defense Human Resources Activity (DHRA) SBIR Program seeks small businesses with strong research and development capabilities to pursue and commercialize technologies in the field of Trusted AI and Autonomy, Human Machine Interfaces.

Offerors responding to a topic in this BAA must follow all general instructions provided in the DoD SBIR Program BAA. DHRA requirements in addition to or deviating from the DoD Program BAA are provided in the instructions below.

Proposers are encouraged to thoroughly review the DoD Program BAA and register for the DSIP Listserv to remain apprised of important programmatic and contractual changes.

- The DoD Program BAA is located at: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/#announcements>. Be sure to select the tab for the appropriate BAA cycle.
- Register for the DSIP Listserv at: <https://www.dodsbirsttr.mil/submissions/login>.

Specific questions pertaining to the administration of the DHRA Program and these proposal preparation instructions should be directed to: Tammy J. Proffitt, DHRA, Office of Small Business Programs, tammy.j.proffitt2.civ@mail.mil.

This release contains an open topic. As outlined in section 7 of the SBIR and STTR Extension Act of 2022, innovation open topic activities—

- (A) Increase the transition of commercial technology to the Department of Defense;
- (B) Expand the small business nontraditional industrial base;
- (C) Increase commercialization derived from investments of the Department of Defense; and
- (D) Expand the ability for qualifying small business concerns to propose technology solutions to meet the needs of the Department of Defense.

Unlike conventional topics, which specify the desired technical objective and output, open topics can use generalized mission requirements or specific technology areas to adapt commercial products or solutions to close capability gaps, improve performance, or provide technological advancements in existing capabilities.

A small business concern may only submit one (1) whitepaper submission and full proposal to each open topic. If more than one whitepaper and full proposal from a small business concern is received for a single open topic, only the most recent proposal to be certified and submitted prior to the submission deadline will receive an evaluation. All prior proposals submitted by the small business concern for the same open topic will be marked as nonresponsive and will not receive an evaluation.

PHASE I PROPOSAL GUIDELINES

The Defense SBIR Innovation Portal (DSIP) is the official portal for DoD SBIR proposal submission. Offerors are required to submit proposals via DSIP; proposals submitted by any other means will be disregarded. Detailed instructions regarding registration and proposal submission via DSIP are provided in the DoD SBIR Program BAA.

Technical Volume (Volume 2)

The Technical Volume is not to exceed 10 pages and must follow the formatting requirements provided in the DoD SBIR Program BAA. DHRA will not consider any pages in excess of the 10-page limit.

Only the electronically generated Cover Sheets, Cost Volume and Company Commercialization Report (CCR) are excluded from the 10-page limit. Technical Volumes that exceed the 10-page limit will be reviewed only to the last word on the 10th page. Information beyond the 10th page will not be reviewed or considered in evaluating the offeror's proposal. To the extent that mandatory technical content is not contained in the first 10 pages of the proposal, the evaluator may deem the proposal as non-responsive and score it accordingly.

Content of the Technical Volume (Volume 2)

Refer to the DoD SBIR Program BAA for detailed instructions on the content of the technical volume.

Cost Volume (Volume 3)

The Phase I amount must not exceed \$280,000 for a 9-month duration.

Please review the updated Percentage of Work (POW) calculation details included in the DoD Program BAA. DHRA will not accept any deviation to the POW requirements.

Company Commercialization Report (CCR) (Volume 4)

Completion of the CCR in Volume 4 of the proposal submission in DSIP is required. Please refer to the DoD SBIR Program BAA for full details on this requirement. Information contained in the CCR will be considered by DHRA during proposal evaluations.

Supporting Documents (Volume 5)

All proposing small business concerns are REQUIRED to submit the following documents to Volume 5:

1. Contractor Certification Regarding Provision of Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment
2. Disclosures of Foreign Affiliations or Relationships to Foreign Countries
3. Disclosure of Funding Sources

Please refer to the DoD Program BAA for more information.

PHASE II PROPOSAL GUIDELINES

Phase II proposals may only be submitted by Phase I awardees. Phase II proposal submission window, notification process, and additional instructions will be provided in the Phase I contract or by subsequent notification. Phase II will be a 12 month base duration with a 6 month option, not to exceed a total value of \$1,300,000.00.

DISCRETIONARY TECHNICAL AND BUSINESS ASSISTANCE (TABA)

Technical and Business Assistance funds are not currently offered for DHRA topics.

EVALUATION AND SELECTION

All proposals will be evaluated in accordance with the evaluation criteria listed in the DoD SBIR Program BAA.

Proposing firms will be notified of selection or non-selection status for a Phase I award within 90 days of the closing date of the BAA. The Office of Small Business Programs will notify proposing vendors via email of selection status and debriefing procedures.

Refer to the DoD SBIR Program BAA for procedures to protest the Announcement.

As further prescribed in FAR 33.106(b), FAR 52.233-3, Protests after Award should be submitted to: Tammy J. Proffitt, DHRA Office of Small Business Programs and Contracting Officer, DHRA, Enterprise Acquisition Division via email to tammy.j.proffitt2.civ@mail.mil.

AWARD AND CONTRACT INFORMATION

Up to two awards are anticipated. DHRA plans to award FAR-based government Firm-Fixed Price contracts, subject to approval of the Contracting Officer. The amount of resources made available for this topic depend on the quality of the proposals received and the availability of funds.

DHRA
SBIR 23.4 Topic Index

OSD234-P003 Rapid development of effective behaviorally aligned training simulations for human relations practitioners (Open Topic)

OSD234-P003 TITLE: Rapid development of effective behaviorally aligned training simulations for human relations practitioners (Open Topic)

OUSD (R&E) CRITICAL TECHNOLOGY AREA(S): Trusted AI and Autonomy, Human Machine Interfaces

OBJECTIVE: The goal is to use Artificial Intelligence (AI) and Modeling & Simulations (M&S) for rapid development of training scenarios with a scalable level of difficulty, sufficiently matched fidelity, and that elicits appropriate behavioral interactions and cues sufficient for effective learning and transfer of interpersonal skills. For use in sensitive topics of human relations and interaction.

DESCRIPTION: A true assessment still needs to be completed to test the effectiveness and adequacy of legacy and novel technological approaches to education and training (E&T) for Equal Opportunity (EO) practitioners. There is a need to develop and integrate adaptive learning approaches that tailor EO trainings that respond and adapt to the learner's capabilities. Therefore, the purpose of this topic is to develop technological and methodological approaches that will utilize realistic synthetic representations of human relation training scenarios that are adaptive and scalable on the level of difficulty, sufficiently matched fidelity, and elicit the appropriate behavioral interactions and cues to sufficiently elicit learning and transferability of interpersonal skills for use in training EO practitioners such as interpersonal relationships, team development, and resiliency. The need for this approach will potentially overcome the limitations of current educational modalities (e.g., didactic lectures, case studies, observations), which do not provide the complexity to replicate the nuances of real-life situations accurately and may result in the underdevelopment of the necessary abilities to embrace the complex and varied roles an EO practitioner fully.

Modernization of E&T is necessary to ensure that future EO practitioners are fully equipped with the necessary tools and skills to address and prevent complex human relations issues. Simulation learning (SL) will fill the gap in current E&T approaches by providing a tailored, interactive, and scalable learning environment that ensure acquisition of the necessary knowledge, skills, and abilities (KSAs) with fidelity. SL is an appropriate approach to EO education and training because it has demonstrated evidence to increase knowledge structuring, which is particularly important skill set for EO practitioners. SL also provides a tailored and adaptive approach to problem-solving skill development. Wherein the learner can progress at a pace that encourages mastery over completion - this is accomplished using realistic synthetic representations of adverse human relations events, which promote creativity in the learner to develop new solutions, critical thinking (i.e., reflection), formulate one or more solutions, establish, or recall strategies to implement the solution(s), discover new possible solutions, and explain the problem (i.e., understanding) and provide a realistic and actionable solution (i.e., evaluation).

Previous research indicates an increased proficiency in tasks and skill development when simulation training is included, as opposed to traditional classroom training alone. Specifically, SL is more effective than traditional learning approaches at increasing knowledge structuring for human relation topics. SL also provides a tailored and adaptive approach to problem-solving skill development.

The advantage of SL over traditional educational modalities is that it provides an environment that encourages transformative learning for the EO practitioner. SL is an immersive experience to addressing complex human relation scenarios wherein the learner is allowed to remain fully emerged, creating a higher sense of presence over face-to-face learning modules, which increases human relation skillsets, such as establishing contact with the victim, sharing emotions or ideas, and developing cooperation skills, such as awareness of others' ideas, tolerance toward others, and empathy.

SL also provides instructors with real-time objective data to assess the learners' mastery of job tasks or acquisition of new skills. SL objective data reduces threats to internal validity typically associated with human relations assessments because it removes the instructors' subjective self-observations. SL gives the DoD the ability to train and educate a broader audience in a variety of locations, with potentially fewer human resources, leveraging already funded technologies in development by other research organizations, thus saving millions of dollars, advancing the methods currently utilized in training and education (E&T) in human relations domain, and provide readily accessible and realistic refresher training for EO practitioners.

The Defense Equal Opportunity Management Institute (DEOMI) seeks solutions leveraging AI and SL to support the training of equal opportunity, equal employment, and diversity and inclusion practitioners to respond to challenging social issues happening in our military and other government agencies. These technologies should aid with the rapid development of very immersive and realistic scenarios portraying today's social challenges like racism, extremism, discrimination, harassment, etc. This training tool should be able to address the development of interpersonal skills, trigger a change in behavior, and deliver the knowledge-based training effectively.

GLOSSARY:

- Complexity – When multiple topics converge causing the lines of distinction to become unclear.
- Fidelity – the emersion or level of simulation that re-creates (simulates) a complex phenomenon, environment, or experience.
- Internal Validity – ability to accurately infer the causal relationship between two or more concepts.
- Presence – the self-reported feeling of emersion experience of the user in the virtual or simulated environment.
- Realistic Synthetic Representations - recreations of realistic equipment or people to represent real-world concepts or scenarios.
- Sensitivity - The underlying accepts of the human relation topic that is too difficult, complex, challenge to express without causing emotional distress to other members.
- Serious Game – highly interactive computer-based games or simulations that creates a sense of full emersion and engagement for the user.

PHASE I: Develop a concept for creating realistic synthetic representations of adverse human relations issues suitable for use in training and education for EO practitioners. Demonstrate the feasibility of the concept to meet all the requirements as stated in the Description. Establish feasibility through modeling and analysis of the design to include the initial design specifications and capabilities description to build a prototype solution in Phase II.

During Phase 1, the following questions will be answered:

- 1) How can we leverage simulation technology to enhance the learning experience?
- 2) What is the correct stimulation level for a given learning objective or outcome?
- 3) How does the fidelity of SL add or detract from the learning experience and E&T's effectiveness?
- 4) At what point does the sensitivity or complexity of the human relation topic(s) under review render them unfit for SL?
- 5) Will the learner perform accurate word tasks better after SL exposure?
- 6) When can SL become independent from the instructor, mediator, or facilitator?
- 7) What is the appropriate level of physical fidelity to accurately represent the necessary KSAs for EO practitioners?
- 8) Can SL in human relations present an opportunity to construct an adaptive learning environment that presents the learner with a personalized and adaptive curriculum and test based on ability?

PHASE II: Develop and demonstrate prototypes M&S tool in a realistic environment. Conduct testing to prove feasibility over extended operating conditions. Develop a rapid scenario development methodology and traditional training conversion to M&S at the applicable and appropriate level of fidelity and complexity, in addition to a methodology on how to properly evaluate the outcomes and performance of the students during training engagements.

PHASE III DUAL-USE APPLICATIONS: Supports the transition of EO modular simulation learning components to military training programs and the commercial market. The technology developed under this topic could create a dynamic training approach for industry and DoD programs. The innovation sought with this effort will reduce reliance on instructor capabilities, thus increasing T&E fidelity. This simulation technology is applicable in a broad range of military and civilian E&T applications where the nature of topics is sensitive, and an expert instructor or SME is not easily accessible.

REFERENCES:

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KEYWORDS: Education and Training (E&T), Equal Opportunity (EO), Modeling and Simulations (M&S), Simulation Learning (SL), and Transformative Learning, Human machine interface, Trusted AI, Adaptive learning