HDTRA1-22-S-0003
Research and Development Innovations Broad Agency Announcement
As of Amendment 2
Topic C—Nuclear Scintillation Mitigation Technologies for MILSATCOM

1. ADDENDUM INTRODUCTION
1.1. This addendum serves to supplement the Defense Threat Reduction Agency's (DTRA) Research and Development Innovations Broad Agency Announcement (BAA), HDTRA1-22-S-0003. This research opportunity expands on the Research & Development thrust area of "enable effective and integrated WMD deterrence". This topic is open and in effect from 31 July 2025 (starting with date of posting) through 29 August 2025 (the final date for Phase I submissions).

2. BACKGROUND
2.1. In this topic, the DTRA Research and Development Directorate seeks to identify performers that can develop nuclear scintillation mitigation technologies for military satellite communications (MILSATCOM). Mitigations could include techniques such as adaptive equalization, interleaving, matched channel filtering, or other technologies. Most desirable technologies will be those that are low-latency and do not introduce transmission delays that are incompatible with military standards for satellites.

3. OBJECTIVES
3.1. This effort is focused on assessing available capabilities for research, development, test, and evaluation (RDTE) activities to support current requirements for use in specialized Department of Defense (DoD) applications. Responding performers are encouraged to provide specific details on their capabilities and expertise.

3.2. As BAA responses are assessed based on specific capabilities, DTRA may conduct follow-on engagements and in some cases on-site visits with performers to discuss specific R&D objectives.

4. TECHNICAL AREAS OF INTEREST
4.1. DTRA is interested in RDTE at Technology Readiness Levels between two (2) and five (5) in the below technical areas of interest. Performers who demonstrate capabilities in the following will be considered:

4.1.1. Mitigations for ionospheric scintillation effects on satellite communications resulting from natural or manmade nuclear events. The proposed solution may complement or replace existing scintillation mitigations and may be a dual-use technology.

4.1.2. Compatibility with existing scintillation simulators. DTRA has previously acquired several scintillation simulators that generate signals representative of those that have propagated through a scintillated communications environment. (These include MASS, CoLTS-AE, and DYSE, though CoLTS-LC could also be considered for use.) Specifically, this has been accomplished through the use of the DTRA channel model, the Antenna Channel Impulse Response Function (ACIRF), and a multiple phase screen (MPS) model. As technology demonstrations will be required as part of this effort, the proposed solution must be able to operate on an affected signal produced by an available scintillation simulator and in compatibility with the range of range of scintillation parameters set by MIL-STD-3053, *The Satellite System Natural and Nuclear Environment Standard (SSNS-E)*.

4.2. This topic may require the performer to access, handle, or generate classified information. The ability to access SECRET information will be considered in the evaluation process. All performers must be U.S. citizens.

4.3. Describe prior work in support of the United States Government, to include contracting experience and type of contract, to include Indefinite Delivery/Indefinite Quantity, Federal Acquisition Regulation contracts, and Economy Act actions.

4.4. Describe any prior experience with the Other Transaction Agreement process to include membership in any consortia.

5. MAJOR MILESTONES

DATE	EVENT
31 July 2025	BAA addendum posted in SAM
31 July 2025	Begin registration at the DTRA proposal Web site https://www.dtrasubmission.net
8 August 2025	Deadline to submit questions to dtra.belvoir.rd.mbx.rd-baa-inbox@mail.mil (Unclassified) or dtra.belvoir.rd.mbx.rd-baa-inbox@mail.smil.mil (up to SECRET/NOFORN)
26 August 2025	Questions and answers posted to SAM
19 September 2025	Final day to propose to BAA addendum with Phase I
NLT 10 October 2025	DTRA provides feedback to all offerors prior to any Phase II invitations

6. FORMAL PROPOSAL SUBMISSION INSTRUCTIONS

6.1. See BAA HDTRA1-22-S-0003 Amendment 2 for submission instructions. Note page limitations for Phase I white paper and quad chart. Adhere to BAA instructions, which will entail limiting information to stay within the total page restriction.