

Request for Solutions:
Air Defense Artillery Long-Term Evolution Orientation Device
Amendment 1 – April 12th, 2018

1. Purpose

This Request for Solutions is issued to identify a unique solution for an Air Defense Artillery Long-Term Evolution Orientation Device. The Government will evaluate the solutions with the intent of negotiating an Other Transaction Agreement under the Training and Readiness Accelerator (TReX).

2. Summary and Background

The U.S. Army desires a Long-Term Evolution (LTE)-based device to provide real-time orientation and positioning status to support air defense simulated engagements during live force-on-force training exercises.

Currently, [Army Combat Training Centers \(CTC\)](#) use laser based systems to replicate direct fire engagements. Laser based systems have limitations when targets do not have the ability to utilize Multiple Integrated Laser Engagement System (MILES) detectors, such as United States Airforce (USAF) aircraft, Army aviation helicopters or Unmanned Aerial Systems (UAS) platforms. Many of the Air Defense Artillery (ADA) engagements (such as missiles) can be stimulated if both the target location and a reasonable weapon orientation at the time of engagement is known. Two CTCs (the National Training Center (NTC) and Joint Readiness Training Center (JRTC)) have or soon will have an LTE-based instrumentation network. The LTE network will allow the integration of commercial items, such as devices that provide orientation. This project will develop (if possible and reasonable) a prototype providing a weapon orientation device that will communicate across the existing CTC LTE network. This device will enhance pilot, ADA and Suppression of Enemy Air Defense (SEAD) training at the CTCs.

The Combat Training Center Instrumentation System (CTC-IS) Program fielded capabilities for the CTCs at the NTC at Fort Irwin, California; the JRTC at Fort Polk, Louisiana. CTC-IS is an integrated system of computer software and hardware; workstations; databases; voice, video, and data recording, production, and presentation equipment; interface devices; and communication networks. It provides the tools for the Combat Trainer and the Training Analysts to collect, analyze, and present training performance feedback to the training unit in the After Action Review.

2.1 Applicability of Attached Documents to this Request

2.1.1 Attachment 1, LTE Orientation Device Technical Supplement: Baseline Government specifications of this prototype based on assumptions of the current state of technology. Vendors are encouraged to challenge these assumptions in their

individual solutions and should articulate any major discrepancies between this technical supplement and their technical solution.

2.1.2 Attachment 2, Instrumentation System (IS) - Tactical Engagement Simulation Systems (TESS) Interface Standard, PRF-PT-00552, Revision G. This document describes the interface between the CTC-IS and instrumentation. Paragraph 3 covers initialization. Paragraph 4 has TESS (or LTE Orientation Device) to the IS interface. Paragraph 5 has the IS to TESS (LTE Orientation Device) interface, which may not be needed depending on the design of the LTE Orientation Device.

2.2. Vendors interested in responding to this Request for Solutions must be members of the Training and Readiness Accelerator (TReX).

3.0 Technical Objectives:

3.1 This effort will demonstrate the integration of commercial devices and/or components into the CTC Instrumentation system using the LTE communications network.

3.2 This project is anticipated to have three phases. Phase One will focus on the initial selection of hardware, general design, definition of the message flow between the device and the CTC-IS and definition of cyber security issues and mitigation. Phase One will end in an Initial Design Review.

Assuming the government and vendor(s) determines that the project has an acceptable risk level, the project will enter Phase Two. In Phase Two, the vendor will demonstrate a breadboard solution and demonstrate passing position location and orientation to the CTC-IS – to include cybersecurity controls across the National Training Center LTE network. Phase Two will end with a Final Design Review, where a mutual decision between the Government and the vendor(s) will be made regarding proceeding to Phase Three.

In Phase Three, the vendor(s) will build five prototype units, which will be placed in a mock Stinger. After vendor testing, the mock Stingers will be deployed to the NTC for controlled tests against Army Aviation, USAF aircraft and UAS platforms.

3.3. Please see Attachment 1, ADA LTE Orientation Device Technical Supplement for additional information.

4.0 RFS Responses:

4.1 The Vendor's proposed solution should describe their approach to delivering a unique solution for the Air Defense Artillery Long-Term Evolution Orientation Device, as outlined in Paragraphs 2 and 3 above, with specific emphasis and focus shown in answering the following critical technology questions:

- a. Is the proposed solution a commercial device or an integration of commercial components?
- b. Will positioning accuracy of commercial items support simulated force-on-force engagements?
- c. Will latency of the commercial LTE network support simulated force-on-force engagements?
- d. What is the projected size of production units?
- e. What is the projected battery life of production units?

These questions are not listed in any specific order of priority and are provided to help focus vendor responses. While these focus areas are of significant importance, responses will be considered as a whole.

4.2 Please ensure any assumptions made are clearly stated in your response.

4.3 Intellectual Property and Rights in Technical Data: All IP and data rights remain negotiable based on individual vendor solutions.

It is the Government's desire to receive government purpose rights to all development and deliverables of technical data funded under the transaction agreement, for at least a five-year period. The five-year period, or such other period as may be negotiated, would commence upon execution of the Other Transaction Agreement that required development of the items, components, or processes or creation of the data. Upon expiration of the five-year or other negotiated period, the Government would receive unlimited rights in the technical data. Government purpose rights means the right to use, modify, reproduce, release, perform, display, or disclose technical data within the Government without restriction; and release or disclose technical data outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose technical data for United States government purposes.

Your response should clearly outline the appropriate rights in technical data that will be delivered with your solutions, as well as understanding that the U.S. Army has release authority on any publications related to this prototype project.

4.4 Anticipated Delivery Schedule: Vendor shall include the anticipated delivery and demonstration schedule to reflect the phased approach outlined in Paragraph 3. The vendor's schedule should also include the following events:

4.4.1 Kick-Off Meeting, within two weeks of award. Kick-Off Meeting will focus on introduction; initial schedule; identification of key risks.

4.4.2 Initial Design Review. Initial Design Review will provide the initial selection of hardware, general design, definition of the message flow between the device and the CTC-IS, as well as the definition of cybersecurity issues and mitigation. At the Initial

Design Review, the government and vendor will review risks and jointly decide whether to move forward into Phase Two.

4.4.3 Final Design Review. At the Final Design Review, the vendor will provide breadboard test results, issues, and risks to meet the full device specifications. Following the Final Design Review, the government and vendor(s) will jointly decide whether to move forward with Phase Three, continue with Phase Two or end the effort.

4.4.4 Vendor Demonstration. At the vendor's facility (or other agreed upon location) the vendor will show the full operation of the mock Stinger.

4.4.5 NTC Demonstration. At this demonstration, the vendor(s) will show the full operation of the mock Stinger against live air platforms connected to the NTC Instrumentation System.

4.5 Proposed Pricing and Milestone Payments: Vendors will submit a fixed amount price for their solution, further divided into milestone payments that are tied to each phase outlined in Paragraph 3. Your pricing submission shall be submitted in a separate document with no pricing detail provided in the technical response. **There is no limit to the page length for the pricing submission.**

4.6 Provide your nontraditional* business status or your ability to meet the eligibility requirements of [10 U.S. Code § 2371b](#) on the cover page of your response. Within your response, please check the following box which applies – with appropriate justification if applicable.

- There is at least one nontraditional defense contractor or nonprofit research institution participating to a significant extent in the project.
- All significant participants in the transaction other than the Federal Government are small businesses or nontraditional defense contractors.
- At least one third of the total cost of the project is to be provided by sources other than the Federal Government.

*Nontraditional – an entity that is not currently performing and has not performed, for at least the one-year period preceding the solicitation of sources by the Department of Defense (DoD) for the procurement or transaction, any contract or subcontract for the DoD that is subject to full coverage under the cost accounting standards prescribed pursuant to [41 U.S. Code § 1502](#) and the regulations implementing such section.

4.7 In addition to your nontraditional business status, the cover page of the response will also include the company name, Commercial and Government Entity (CAGE) Code (if available), address, and primary point of contact including phone number and email address.

4.8 All questions related to this RFS should be submitted in writing to initiatives@nstxl.org, with “ADA LTE” used in the subject line. Questions must be submitted no later than 12:00 PM EST on **April 6th, 2018**. Questions received after the deadline may not be answered. Questions shall not include proprietary data as the Government reserves the right to post submitted questions and answers, as necessary (and appropriate) to facilitate vendor solution responses.

4.9 Responses will be submitted no later than 12:00 PM EST on **April 20th, 2018**. Your response should be submitted electronically to initiatives@nstxl.org, with “ADA LTE” used in the subject line. Any submissions received after this time on this date may be rejected as late and not considered.

4.10 Technical responses shall not exceed 15 pages in length, utilizing standard 12-point font. Charts or figures directly relevant to the solution may be referenced and submitted as appendices and are not bound by the 12-point font requirement **or page count**. Any pages submitted outside of this page length requirement, outside of standard charts and figures, will not be reviewed. Cover page does not count towards page count.

5.0 Selection Process

5.1 Individual responses will be evaluated with consideration given to the technical merit of the response and total project risk. The proposed project price, schedule, and data rights assertions will be considered as aspects of the entire response when weighing risk and reward. The Government will evaluate the degree to which the submission provides a thorough, flexible, and sound approach in response to the identified focus questions in Paragraph 4.1 as well as the ability to fulfill the requirements in Attachment 1, Technical Supplement.

5.2 The Government will evaluate the provided solutions and select a vendor (or vendors) with the lowest score, as detailed below.

5.2.1 Overall Concept: Is the proposed solution a Commercial Off The Shelf (COTS) device or an integration of COTS components:

A solution that is a pure COTS device (all but the trigger pull / wiring) will receive 1 Point.

A solution that is mostly a COTS device (switches, battery, and wiring) will receive 2 points.

A solution that is all COTS components will receive 3 points.

A solution that is mostly COTS components will receive 4 points.

5.2.2 Accuracy: What is the accuracy of the proposed solution support by vendor and other documentation? Impacts of the eCompass used near large metal object (i.e. armored vehicles) should be addressed.

A solution that has less than 2 degrees of expected accuracy will receive 1 point.

A solution that has 2 to 3 degrees of accuracy will receive 2 points.

A solution that has more than 3 degrees of accuracy will receive 3 points.

5.2.3 Latency: What is the expected latency (from trigger pull to arrival at the CTC-IS low side gateway) of the proposed solution supported by vendor and other documentation?

A solution that has less than 300 milliseconds of expected latency will receive 1 point.

A solution that has between 300 and 500 milliseconds of expected latency will receive 2 points.

A solution that has more than 500 milliseconds of expected latency will receive 3 points.

5.2.4 Schedule and Risk: What is the proposed schedule? What risks are identified? Can the risks be mitigated, if so –how?

A solution that lays out risks and shows schedule to address the risks and schedule to decide if the risk cannot be mitigated will receive 1 point.

A solution that does not identify risks, provides an unreasonable schedule for the mitigation of risks will receive 3 points.

5.3 If sufficient validation of the claim is not provided, the Government may award more points. Assessment of risks is subjective. If the risk is obvious or the schedule seems overly aggressive, the Government will add points.

5.4 The Government reserves the right to award to a respondent that does not meet all of the requirements, but provides attributes or partial solutions of value, of the Request for Solutions.

6.0 Additional Information

6.1 The costs of preparing and submitting a response is not considered an allowable direct charge to any government contract or agreement.

6.2 Export controls: research findings and technology developments arising from the resulting White Paper may constitute a significant enhancement to the national defense and to the economic vitality of the United States. As such, in the conduct of all work related to this effort, the recipient will comply strictly with the International Traffic in Arms Regulation (22 C.F.R. §§ 120-130), the National Industrial Security Program Operating Manual (DoD 5220.22-M) and the Department of Commerce Export Regulation (15 C.F.R. §§ 730-774).

6.3 Interaction and/or Disclosure with Foreign Country/Foreign National Personnel. The vendor should comply with foreign disclosure processes IAW AR 380-10, Foreign Disclosure and Contacts with Foreign Representatives; DoDD 5230.11, Disclosure of Classified Military Information to Foreign Governments and International Organizations; and DoDD 5230.20, Visits and Assignments of Foreign Nationals.

6.4 All submissions will be unclassified. Submissions containing data that is not to be disclosed to the public for any purpose or used by the Government except for evaluation purposes will include the following sentences on the cover page:

“This submission includes data that will not be disclosed outside the Government, except to non-Government personnel for evaluation purposes, and will not be duplicated, used, or disclosed -- in whole or in part -- for any purpose other than to evaluate this submission. If, however, an agreement is awarded to this Company as a result of -- or in connection with -- the submission of this data, the Government will have the right to duplicate, use, or disclose the data to the extent agreed upon by both parties in the resulting agreement. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets [insert numbers or other identification of sheets]”

6.5 Each restricted data sheet should be marked as follows:

“Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this submission.”