

**U.S. Army Program Executive Office - Aviation
Unmanned Aircraft Systems Project Management Office
Air Launched Effects (ALE) Enablers Request for Information (RFI)
Solicitation Number:**

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Synopsis:

1. Introduction

This Request for Information (RFI) is for information and planning purposes and includes questions that the United States Government (USG) may use to understand current Industry capabilities. This RFI covers a need for the Air Launched Effects (ALE) – Enablers only. It is one of three distinct RFIs issued simultaneously that cover ALE (see “Synopsis” below for further detail). This is NOT a request for Quotations or Proposals or a promise to issue a Request for Proposal (RFP) or Request for Quote in the future and does not commit the USG to contract for the supplies/services contained herein. In accordance with Federal Acquisition Regulation (FAR) 15.202 (e), USG will not accept responses to this notice as offers to form a binding contract. USG will not reimburse costs incurred

by Respondents in response to this RFI or for participating in information exchange regarding details of the RFI. The information provided in this RFI is subject to change and is not binding on USG. Any information submitted in response to this RFI is voluntary. Respondents must clearly mark any proprietary information and trade secrets on all submitted materials. USG will not share vendor proprietary information with the public. USG hereby notifies Respondents that (a) USG may disclose submitted information to support/Systems Engineering and Technical Assistance (SETA) contractors supporting this program, (b) submission of information in response to this RFI constitutes consent to such handling and disclosure of submitted information to those parties, and (c) USG will handle such proprietary information in a manner consistent with applicable federal law. Please be advised that all submissions become USG property, and USG will not return submissions to Respondents. USG advises Respondents that USG is under no obligation to provide feedback to Respondents with respect to any information submitted.

USG may meet with Industry partners in a 1:1 setting during the course of market research. If USG decides to hold 1:1 sessions with Industry partners, additional details will be shared at a later date.

The ALE Program of Record (POR) may share any information submitted in response to this RFI with current and future support vendors contracted to support the ALE POR. All USG and contractor personnel reviewing submitted responses will have signed non-disclosure agreements and understand their responsibility for proper use and protection from unauthorized disclosure of proprietary information as described 41 U.S. Code (USC) 423.

Synopsis

The U.S. Army Program Executive Office – Aviation (PEO Aviation) and the Unmanned Aircraft Systems (UAS) Project Management Office (PMO) are developing an ALE Program of Record acquisition strategy that will guide the development and fielding of this technology over the coming decades. Along with the current ALE technology demonstration and ALE Small (ALE-S) prototyping activities, USG will use the information gathered through this RFI process to shape and inform a USG acquisition strategy which may lead to contract awards.

There are three different RFIs being issued simultaneously with each covering a specific part of the ALE strategy and ALE Family of Systems (FoS) detailed below. The ALE FoS will provide ALE capabilities by acquiring and integrating various components across the Future Vertical Lift (FVL) ecosystem (see Figure 2) and enduring fleet¹, while ensuring a Modular Open System Approach (MOSA)-compliant architecture (See Appendix A for additional detail on MOSA-compliant architecture). Specifically, the ALE POR seeks responses across three areas of the ALE FoS, each with a distinct purpose and RFI (more detail in Figure 4).

Specifically, the ALE Program of Record seeks responses in the following three areas via three separate and distinct RFIs:

- **ALE-Architect** to define the ALE architecture within the FVL FoS and drive integration *across* existing platforms and the FVL ecosystem while ensuring Modular Open System Approach (MOSA) compliance²
- **ALE-Weapons System (ALE-WS)** will integrate the various components *within* the weapons system to produce a fully functional ALE system
- **ALE-Enablers** will provide MOSA-compliant components *to* the ALE Weapons System

Responses will inform the potential development of an ALE FoS acquisition approach, corresponding RFP, statements of work, and possible future contracts; therefore, feedback from industry is critical to formulating the best possible approach.

¹ Enduring fleet are existing US Army aviation platforms, for example AH-64 D/E/F Apache, UH-60 V/M Blackhawk, MQ-1C Gray Eagle

² For additional MOSA context and details, please reference “Appendix A: Supplemental Information”

As part of the Army’s outreach to industry and to ensure that USG casts the widest possible net—for both familiar as well as new technologies—the strategy development process will include significant engagement with industry and outreach.

An expression of interest and detail of current capabilities relevant to the ALE program is the first stage of the ALE strategy development and RFI release process. The Army particularly encourages non-traditional performers and innovators who have relevant capabilities and technology to participate in this process. USG is interested in all solution sets that may be capable of meeting the operational requirements outlined in each RFI. USG may ask for additional clarification on RFI responses. USG will provide detailed instructions in correspondence outlining any follow-up questions. USG also encourages Respondents to submit suggestions for the ALE strategy in Attachment B outlined below.

This RFI informs the initial capabilities for ALEs that USG will field in FY25, with expectation to field an ALE that is capable of all behaviors by FY30+. Should USG field initial, operational ALE systems, conceivable upgrade cycles could follow on a regular basis. USG may replace any component or integrator during such cycles to maximize operational capabilities with best-in-class technologies.

Industry Day

USG plans to hold an Industry Day on **February 24, 2022**, to provide an opportunity for Army representatives to communicate needs, along with programmatic and technical details. Army representatives will also endeavor to answer questions submitted by vendors during an open discussion. Respondents should submit questions for Industry Day in Attachment A (Industry Day RSVP) by February 17, 2022. Detailed instructions for submitting Attachment A are located below.

During Industry Day, USG will provide an overview of the ALE strategy and hold an open discussion to answer questions submitted by Respondents prior to Industry Day.

Following Industry Day, Respondents will have a 2-week period to submit their RFI responses. Final RFI responses will be due by **March 10, 2022**. USG anticipates sharing a more detailed Industry Day agenda and meeting forum with Respondents after reviewing Industry Day RSVPs (Attachment A). Please submit Industry Day RSVPs, including any questions for USG, by **February 17, 2022**.

The Army will use this RFI to understand the readiness of existing platform, payload, and mission system technologies to enable ALE Concepts of Operation (CONOPs) and better equip USG to identify potential candidate technologies for ALE POR acquisitions. Respondent feedback may inform possible acquisition strategies, including possible accelerated acquisition timelines meant to improve warfighter capability, and business cases for submitted technologies, and provide input on incentives and potential barriers to entry or participation. Figure 1 shows the expected RFI timeline and associated milestones.

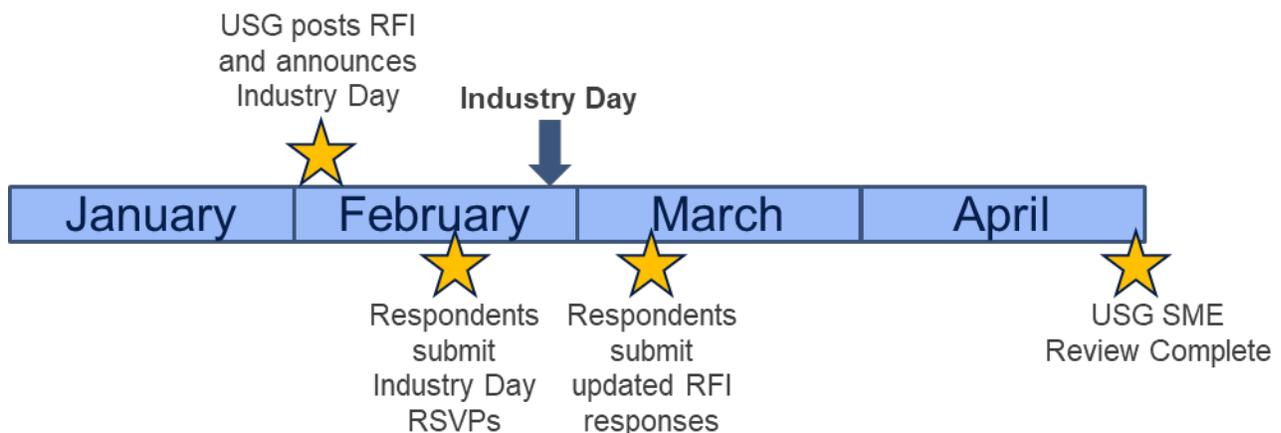


Figure 1: RFI Timeline

ALE Definition and Operational Context

The future multi-domain operational environment presents a complex set of challenges to Army Aviation. These challenges include advanced networked and mobile air defense systems with extended ranges, as well as short and mid-range systems that will deny freedom to maneuver in multi-domain operations. Army Aviation must modernize and distribute its Reconnaissance, Surveillance, Target Acquisition (RSTA) and lethality with an advanced team of manned and unmanned aircraft within the FVL ecosystem to achieve and maintain overmatch in a future conflict. The synergistic effects of the FVL ecosystem are comprised of Integrated Air Defense System (IADS), Command, Control and Communications (C3) capabilities, and other supporting infrastructure. They enable the penetration, dis-integration, and exploitation of an adversary's Anti-Access Area Denial (A2/AD) system.

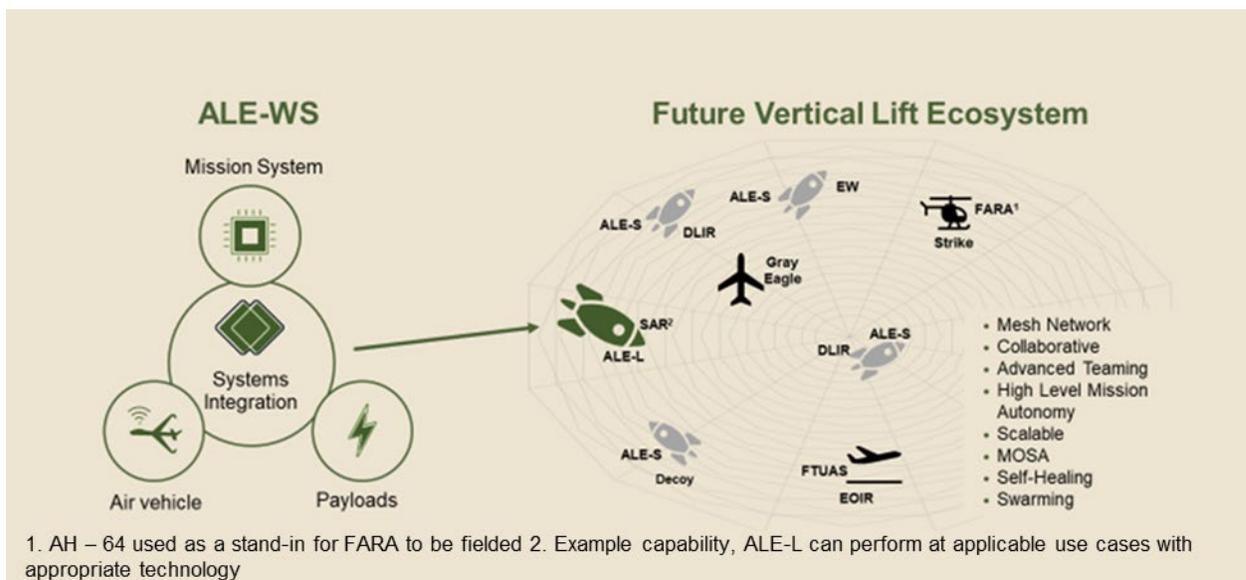


Figure 2: ALE Definition

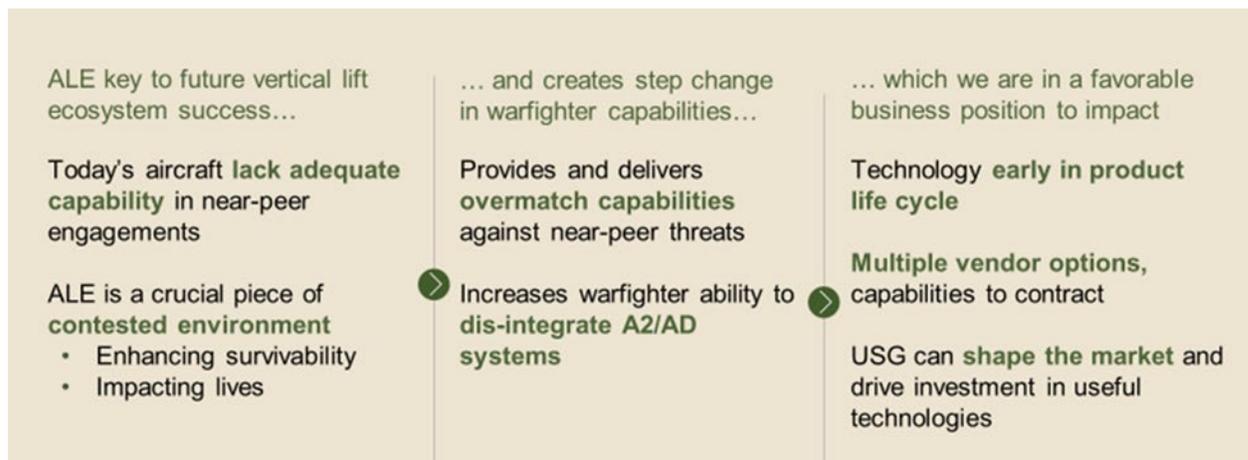


Figure 3: ALE Benefits

The Army plans an initial operational capability (IOC) of ALE by Fiscal year (FY) 25, with frequent upgrades

or introductions of new platforms and capabilities in future years as the ALE FoS expands and matures. Recall, that evaluation of need is continuous, and USG expects upgrade cycles to operate on an annual basis. A vendor that misses an opportunity or deadline in FY25 may have another opportunity in FY26 and onwards.

ALE POR Strategy

The ALE POR strategy centers on five focus areas: Air vehicles, payloads, mission systems, system integration, and FVL FoS integration (Figure 2 above). The size of the ALE and its envisioned role as a multi-function platform in the FVL ecosystem requires an emphasis on capabilities that are compatible with the Size, Weight, and Power (SWaP) and cost limitations of ALE vehicles (Small and Large). Solutions must align with MOSA design principles and be cost effective for USG. Candidate technologies should focus on relevance to the FVL multi-domain operations environment.

The ALE POR is seeking information from vendors across three areas: ALE-Architect, ALE-WS, and ALE-Enablers. Vendors must design solutions in accordance with MOSA principles in mind to enhance performance, cost, and adaptiveness in the FVL ecosystem.

Focus Area	Description	Target End State
ALE-Architect	<p>The Architect designs the ALE architecture within FVL FoS while driving integration across the FVL ecosystem</p> <p>The Architect will establish and maintain integration strategies and integration plans and oversee the execution of those strategies</p> <p>The Architect will manage Initial Capability Documents (ICD), architectures, functional allocations, and integration plans; and will assess Systems Engineering and integration artifacts and execution</p>	<p>Fully developed architecture and processes for integration that ensure compliance with MOSA standards</p>
ALE-Weapons System (See Appendix B for additional detail)	<p>The Weapons System will deliver a fully functional weapons system, capable of executing missions critical to the FVL ecosystem</p> <p>The Weapons System may integrate components from multiple vendors and components to form a fully functioning system</p> <p>The Weapons System shall be developed in accordance with MOSA-principles and in accordance with the architecture and integration strategies established by the ALE Architect, ensuring interoperability, modularity, and adaptability</p>	<p>Fully capable ALE weapons system compatible with the FVL ecosystem that offers necessary capabilities and ALE mission requirements</p> <p>Or</p> <p>Vendor who is capable of integrating multiple ALE enablers into a fully functioning weapons system</p>

<p>ALE-Enablers</p>	<p>The Enablers are the specific components assembled as part of the final ALE WS. Vendor responses will help shape and drive investment to ensure a complete breadth of components are available</p> <p>A wide range of vendors, notably small businesses and USG encourages non-traditional vendors to submit responses</p> <p>Vendors are to design components with MOSA principles in mind and in accordance with architecture and integration strategies established by the ALE Architect</p>	<p>High-level component technologies for Air Vehicles, Mission Systems, Payloads as well as sub-components for engines, propulsion, batteries/energy storage, recovery mechanisms, survivability, advanced materials, or other technologies that provide potentially disruptive capabilities for insertion on ALE Weapons System</p>
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Figure 4: Description and Target End-State of RFI Focus Areas

2. Objective

Specific ALE – Enablers Details

This RFI aims to obtain information from vendors about existing solutions that could meet ALE program requirements. USG is soliciting responses from vendors that are interested and capable in delivering solutions across one, some, or all requirements in the table below.

Focus Area	Technology Area	Description
<p>Air Vehicles</p>	<p>ALE-Small (ALE-S)</p>	<p>Air-launched small (4 ALE-S per launcher) unmanned air vehicles that are compatible with FVL platform storage/launch capabilities and offer range/speed/payload consistent with FVL missions</p>
	<p>ALE-Large (ALE-L)</p>	<p>Air-launched large (2 ALE-L per launcher) unmanned air vehicles that are compatible with FVL platform storage/launch capabilities and offer range/speed/payload consistent with FVL missions</p>
	<p>Air Vehicle Components</p>	<p>Component-level technologies for engines, propulsion, batteries/energy storage, recovery mechanisms, survivability, advanced materials, or other technologies that provide potentially disruptive capabilities for insertion on ALE air vehicles.</p>
<p>Payloads</p>	<p>Active Detect, ID, Locate and Report (DILR) – including EO/IR</p>	<p>Active detection and reconnaissance technologies that utilize emissions from the ALE</p>
	<p>Passive DILR – including radar</p>	<p>Passive detection and reconnaissance technologies that utilize sensor modalities that do not produce targetable emissions (e.g., RF, EO/IR, acoustic, etc.)</p>
	<p>Decoy</p>	<p>Payload technologies that present credible decoys to adversary sensors</p>
	<p>Disrupt – including obscurant, EA, and EW</p>	<p>Payload technologies that deny/deceive adversary acquisition, track, or guidance using electronic warfare and/or other technologies and techniques</p>
	<p>Lethal</p>	<p>Technologies that enable terminal guidance or impart destructive effects on targets</p>
	<p>Other</p>	<p>Other payload technologies that are consistent with ALE use cases that may be of interest to USG</p>
<p>Mission Systems</p>	<p>Communications</p>	<p>Radio systems and data link architectures/hardware/software that enable readily available low latency, LPI/LPD, encrypted, short- and long-range</p>

		communications within the FVL ecosystem that supports collaborative behaviors
	Autonomous Behaviors	Architectures, algorithms, hardware, and software that enable real-time mission management and collaborative autonomy
	Position, Navigation, and Timing (PNT)	Hardware and software capabilities that provide traditional and alternate PNT solutions
	Mission Processing	On-board processing capabilities that host/control mission functions and enable processing of mission data and decisions
	Command & Control (C2)	System capabilities that support real time mission management and tasking/re-tasking of deployed ALE

Figure 6: Enablers

Vendor responses to this RFI will provide a granular view of readily available solutions and integrators, including those that may not be part of a fully integrated system at this time. USG will analyze responses to understand the current market landscape and help determine the prioritization efforts and current technology gaps requiring further industry investment. Any solutions Respondents design and put forward in response to this RFI must be in accordance with MOSA principles for future integration.

USG encourages vendors to provide a synopsis of the solution, an understanding of its technical specifications and benefits, preliminary assessments of how the solution meets key programmatic requirements, and a summary of costs related to the solution (Please reference Attachment B for additional detail/instructions).

3. Responses

1. Respondents should submit documents to the Contract Specialist only (do not cc: the Contracting Officer) outlined below. USG representatives will not be taking telephone inquiries on this RFI. Please ensure the subject of the RFI submission reads as follows: "ALE-Enablers RFI Submission".

Contract Specialist Name: Julie Nelson
Contact information: julie.w.nelson.civ@army.mil

2. Attachment A (Industry Day RSVP) should be sent to the Contract Specialist (do not cc: the Contracting Officer) noted above. Please submit Attachment A via email by 1700 CT on **February 17, 2022**.
3. As described in the introduction above, USG may use the information provided to form USG's acquisition strategy which USG may present in a public forum. Failure to appropriately mark document rights is not the fault of USG, and USG holds the right to replicate and duplicate the material provided, as needed. Attachment B shall not contain classified information. Please submit Attachment B to the Contract Specialist (do not cc: the Contracting Officer) noted above through DoD SAFE or an encrypted email. If you do not have access to DoD SAFE or an encrypted email, please contact the Contract Specialist above for additional submission instructions.
4. Attachment C may contain classified information, but Respondents must complete Attachment B to submit Attachment C. If Attachment C contains classified information, please submit Attachment C via email to Kevin Kee at kevin.kee@sco.smil.mil. Please note, Respondents must have SIPRNet access to submit classified documents via email. If you do not have SIPRNet access, please mail Attachment C from a cleared facility to the below address. If sent via mail, all Respondents should ensure they have the ability to confirm USG receipt of Attachment C. Attachment B should still be sent via DoD SAFE or encrypted email to the Contract Specialist noted above.

UAS Project Office
ATTN: Security
IN CARE OF: Kevin Kee, ALE RFI Submission
5681 Wood Road
Redstone Arsenal, AL 35898

5. RFI responses (Attachment B and C) are due no later than (NLT) 1700 CT on **March 10, 2022**.

6. USG requests Respondents complete the following documents as part of their submission:
 - a. Attachment A: Industry Day RSVP
 - i. Format: Word Document
 - ii. Due date: **February 17, 2022**
 - iii. Status: Required to attend Industry Day
 - iv. Instructions: Please follow all instructions noted within Attachment A
 - b. Attachment B: ALE-Enablers RFI Template
 - i. Format: Excel file
 - ii. Due date: **March 10, 2022**
 - iii. Status: Required
 - iv. Instructions: Please follow all instructions noted within Attachment B
 - c. Attachment C: Technology Synopsis
 - i. Format: Word Document
 - ii. Final document due: **March 10, 2022**
 - iii. Status: Optional

USG may ask for additional detail related to one or multiple parts of the RFI responses. USG will provide detailed instructions in correspondence outlining any follow-up questions.

4. Questions

If you have any specific questions (relating to the above referenced information only) please submit them in written format to the Contracting Officer listed below:

Contracting Office Address: Use email address: michael.p.jennings.civ@army.mil