Modular Kinetic Lethal Drone Vertical Take-Off and Landing (VTOL) Aerial Loitering Munition (ALM)

PROBLEM STATEMENT

The United States Special Operations Command (USSOCOM) through NSWC Crane is seeking to develop and assess emergent prototype loitering munitions, with a focus on Vertical Take-off and Landing (VTOL) Aerial Loitering Munitions (ALM) that are safely recoverable, reusable, and feature a Modular Lethal Payload (MLP). More specifically, the goal is to identify solutions that are low-cost, first-person-view (FPV) unmanned aerial systems (UAS) that can deliver precision kinetic effects.

PROPOSED SOLUTION

The goal of the Modular Kinetic Lethal Drone (MKLD) is to enable the rapid fielding of a low-cost, scalable, small-unit strike capability. The solution must be an NDAA-compliant platform capable of being paired with a compatible ground control station (GCS). In conjunction with FPV, the solution must be Android Team Awareness Kit (ATAK/AI) compliant.

This effort will support the continued development, testing, and operational evaluation of the Modular Kinetic Lethal drone FPV kinetic drone system to meet USSOCOM's need for a recoverable, reusable VTOL ALM with a modular payload system.

The development should be focused on three integrated lines of work:

1. **Autonomy and Development:** To reduce operator workload and improve performance in contested environments.

2. **High-Voltage (HV) Electronic Safe & Arm Device (ESAD) Integration**: To improve the safety margin and reliability of kinetic payload employment.

3. **Fielding Test Systems:** To deliver fielding-ready test articles for government-led operational evaluation.

A solution brief's Technical Merit and Relevance will be based on the ability to meet the primary attributes and the cumulative evaluation of the secondary solution attributes/capabilities:

Primary Attributes:

- Size/Range – The MKLD shall meet the requirements of Echelon 0: Nano systems will weigh less than 5 pounds and have a kinetic range of 1 kilometer (km) threshold (T) and 3km (O); Micro systems will weigh between 5-10 pounds and have a kinetic range of 5km (T) and 10km (O); and Mega systems will weigh between 11-55 pounds and have a kinetic range of 10km (T) and 20km (O).
- Payload– platforms shall be able to carry full payloads to engage targets at ranges of at least 1km and fly at full payload for at least (15) minutes. Payloads expected to weigh between 150g-3600g.
- Power – the MKLD shall have the ability to swap batteries rapidly in the field with no tools
- Communication – Communication equipment shall be operated in the approved DoW bandwidth for UAS and experience no lost comms within the threshold distance >80% of mission time
- Operating Temperature – MKLD should be capable of operating from -10℃ to +40℃ per MIL-STD-810H Method 503.7
- Technology Readiness Level (TRL) – MKLD must be either TRL-6 or TRL-7
- Precision – MKLD weaponized payloads shall have Circular Error of Probability (CEP) <1.5m

Secondary Attributes:

- Training – Vendor should develop a corresponding MKLD training solution that allows for inert variants (capable of waive off capability on mock attack simulation) and their support equipment to be used multiple times as training aids to support system competency. Training solution desired to include an inert along with a training manual in video format
- Storage Packaging and Transportation – associated equipment should include the ability to be contained in a packout load carriage that includes GCS kit and up to 6 All Up Rounds (AUR) with payloads. Transportation containers shall meet MIL-STD-810H requirements
- Form Factor – The MKLD should follow the Modular Open System Architecture (MOSA)
- Ancillaries – a separate GCS kit which includes all necessary equipment

SOCOM desires an award quantity up to (100) MKLD units across multiple awards.

SUBMISSION GUIDANCE

An individual vendor or team of vendors should not submit multiple solution briefs to the AOI, unless each individual solution is substantively unique. If submitting as a team, the first page of the solution brief should list each company on the team and a primary point of contact for each company on the team as well as the lead vendor and point of contact for the overall team.

All phase procedures to follow the base CSO.

NOTE: In accordance with NSWC, Crane CSO N0016425SC0001: The government reserves the right and ability to facilitate introductions of vendors with complementary capabilities. If teaming introductions by the government are provided, a vendor is not obligated to act on the recommendation. If a vendor elects to move forward in accordance with a government-recommended teaming arrangement, a Phase II pitch deck will be requested by NSWC, Crane in order to facilitate a complete evaluation of the jointly proposed solution.

FOLLOW-ON PRODUCTION

Companies are advised that any prototype Other Transactions (OT) agreement awarded in response to this Area of Interest may result in the award of a follow-on production contract or transaction without the use of further competitive procedures. The follow-on production contract or transaction will be available for use by one or more organizations in the Department of Defense and, as a result, the magnitude of the follow-on production contract or transaction could be significantly larger than that of the prototype OT. As such, any prototype OT will include the following statement relative to the potential for follow-on production: "In accordance with 10 U.S.C. 4022(f), and upon a determination that the prototype project for this transaction has been successfully completed, this competitively awarded prototype OT may result in the award of a follow-on production contract or transaction without the use of competitive procedures."

ELIGIBILITY REQUIREMENTS

This solicitation will be awarded in accordance with the Commercial Solutions Opening (CSO) process detailed within N0016425SC0001 Naval Surface Warfare Center, Crane's Commercial Solutions Opening posted to SAM.gov. In accordance with 10 U.S.C. 4022(d), at least one of the following conditions must be satisfied to enter into a prototype OT agreement: (A) at least one nontraditional defense contractor or nonprofit research institution participating to a significant extent, (B) all significant participants are small businesses or nontraditional defense contractors, or (C) at least one third of the total cost of the prototype project is to be paid out of funds provided by sources other than the Federal Government.