

## **Advanced Tactical Trainer Request For Information**

- 1. Synopsis:** This Request for Information (RFI) is issued for planning purposes in accordance with FAR 15.201(e): a) The Government is conducting market research to identify, as potential sources, companies that may possess the expertise, capabilities, and experience to competently and competitively respond to requirements for the design, development, test, production, integration, installation, and sustainment of an Advanced Tactical Trainer (ATT) to be used and integrated as a key tool for Future Fighter Pilot Training.
  
- 2. Interested parties are encouraged to respond to the RFI, understanding the following conditions apply:**
  - a. Responses to this RFI notice are not considered offers and cannot be accepted by the Government to form a binding contract. Vendors participating in this market research are advised their participation in this survey may not ensure participation in future solicitations or contract award(s).
  - b. ATT information provided by the Government in this RFI should be viewed as representative in nature and may be revised as the Government continues to plan and program for FY24.
  - c. Nothing in this RFI is intended to suggest a particular ATT approach or contract solution.
  - d. The Government will not reimburse vendors for any expenses associated with this RFI.
  - e. The Government is interested in responses from all responsible businesses, including small business concerns, disadvantaged business concerns, 8(a) Small Business concern, Women-Owned Small Business (WOSB) concerns, Economically Disadvantaged Woman-Owned Small Business (EDWOSB) concern, Veteran-Owned Small Business (VOSB) concern, Service-Disabled Veteran-Owned Small Business (SDVOSB) concerns, and Historically Underutilized Business zone (HUBZone) small business concerns. The Small Business size standard North American Industry Classification System (NAICS) code 336411, Aircraft Manufacturing, is 1,500 employees.
  - f. This RFI is very similar to a request for information for US Navy advanced tactical training. To reduce the burden of crafting a response, vendors are encouraged to use as much common material as possible in their responses.
  - g. An Industry Day for the ATT program may be held at a future date. Interested parties are encouraged to monitor the SAM website (Sam.gov) for further announcements.
  
- 3. RFI purpose/Description:** The purpose of this request for information is to determine the feasibility, estimated costs, and schedule to develop an advanced tactical training aircraft. This aircraft would support three training tasks: 1) provide Initial Tactical Training, 2) provide Adversary Air support, and 3) serve as a tactical fighter surrogate of existing and future United States Air Force (USAF) frontline fighters. The aircraft needs to simulate and/or replicate current and future fighter aircraft systems by providing the training environment and relevant experience to build transferable tactical skills, systems management skills, and decision making skills required for weapon system employment actions. These actions will be influenced by: environmental information, avionic displays, sensor data, weapon cueing, and maneuver elements.
  
- 4. The following list (not all-inclusive) of Advanced Tactical Trainer initial capabilities to be considered for feasibility, estimated cost, and schedule for at least 100 aircraft and for subsequent increment lots of 50 aircraft to include:**
  - a. Fighter type aircraft with two seats plus an option for single seat variant providing alternate options for use of rear cockpit space.
  - b. Desired level aircraft speed of at least .9 Indicated Mach Number (IMN) / 450-500 knots indicated airspeed at 10,000 feet (mean sea level) with aircraft structural limit min 1.2 IMN.

- c. Desired service ceiling of at least 45,000 feet mean sea level.
- d. Desired structural limits of at least 7.5 G with a sustained capability of 6 G at 10,000 ft MSL
- e. Desired fuel / range / endurance for an Average Sortie Duration (ASD) of at least 90 minutes to include 30 minutes of tactical maneuvering.
  - i. Profile 1: Basic Fighter Maneuvers (BFM) mission profile (T/O – 100 mile transit @ 20k, 2 x 180° G-awareness turns, 4 x BFM sets of 720° AB turns, climbs from 5k to 15k ft between sets, RTB 100 NM with the Visual Flight Rule (VFR) fuel reserves.
  - ii. Profile 2: Air-to-air mission profile (T/O – 150 mile transit @ 26k, 2 x 180° G-awareness turns, 30 min tactical maneuvering at 0.9 IMN and altitudes 15-35k ft, RTB 150 NM w/ VFR fuel reserves).
  - iii. Profile 3: Air-to-Ground mission profile (T/O – 100 mile transit @ 26k, 2 x 180° G-awareness turns, 30 min tactical maneuvering at 450 Knots Indicated Airspeed (KIAS) and altitudes 500'-25k ft, RTB 100 NM w/ VFR fuel reserves).
- f. Secure, open architecture large area displays with an additional input port to enable the capability to display additional inputs (separate from and parallel to the aircraft Operational Flight Program [OFP]), to replicate frontline aircraft displays and enable simulated displays of aircraft combat systems, simulated inputs and real or simulated weapons.
  - i. The programmable and portable capability will be separate from aircraft OFP, the Government desires access to a non-proprietary interface to replicate and adjust frontline aircraft displays of offensive and defensive combat systems, and weapons performance parameters.
- g. A universal stick and throttle connection to enable reconfiguration of the flight controls to mimic Hands-On Throttle and Stick (HOTAS) of frontline USAF Mission Design Series (MDS) fighter aircraft
  - i. The Government desires access to a non-proprietary interface to replicate and adjust programmable HOTAS buttons to replicate the Mission Design Series (MDS) functions and aircraft displays.
- h. Secure transmissions and reception for radio communications, navigation, and training data links via SATURN, Tactical Combat Training System, 2nd Generation pod (TCTS II) + RedNet / MIDS.
  - i. Secure embedded, programmable, flight cockpit, digital simulation and training capability
  - ii. Required communication/navigation systems: color moving map, 2 x UHF/VHF capable radios, Automatic Dependent Surveillance–Broadcast (ADS–B) in/out, VHF Omnidirectional Radio Range/Tactical Air Navigation (VOR/TCN), Air Navigation (RNAV) 1 & 2 and be Required Navigation Performance (RNP) .3, 1, & 2 capable.
  - iii. Secure actual or simulation capabilities to provide Identification compatible with AF MDS.
- i. Aircraft is structured/capable/configurable to carry:
  - i. Combat Air Training Missile (CATM) and a TCTS II or an Air Combat Maneuvering Instrumentation pod (ACMI).
  - ii. A single wing station, on each wing, is able to carry
    - 1. an external fuel tank or
    - 2. an Electronic Attack (EA) or Electronic Counter Measures (ECM) pod while providing power and ability to control pod from the cockpit or
    - 3. Other, future pods/sensors via MIL-standard connections for power/cockpit control.
- j. The ability to record secure data on classified storage devices and/or secure download of all flight data and performance information; to include, Global Positioning System (GPS) location, systems displays and switch actions, to synchronize the information with other aircraft for sortie reconstruction and debrief. (Government retains rights to all data recorded).

- i. Ability to compare, assess, validate and grade the flight performance actions or responses to a set standard.
- ii. Ability to store and share digital information to archive, assess training performance, measure proficiency and progress and for historic training record keeping from accession to retirement.

**5. The Government is also interested in the feasibility, estimated cost, and schedule for additional capabilities to be considered as potential options for future Fighter Training:**

- a. Low Cost Helmet-Mounted Display that displays relevant flight information. Display configurable to mirror frontline MDS.
- b. Aircraft generators sufficient to power wing stations, antennas and avionics stations with sufficient growth capacity to support follow-on incorporation of Electronic Counter-Measures (ECM), Infra-Red (IR) sensor, and radar or threat emulator capabilities.
- c. Automatic ground collision avoidance system (Auto-GCAS).
- d. Autopilot with altitude and heading hold, option to auto-sequence to steer points
- e. Precision Landing Mode capability.
- f. An ejection seat capability for zero altitude, zero airspeed (Zero-Zero Ejection seat)
- g. Aircraft capable of rolling over Barrier Arresting Kit (BAK-12) field arresting gear during takeoff and landing roll.
- h. Digital Engineering analysis for cost of option to provide rear cockpit plus pre-configured shell to add portable avionics or fuel and/or engineering analysis and cost to remove rear crew station and replace with permanent additional fuel/avionics bay volume.
- i. Digital Engineering analysis for cost of option for a universal engine bay design to enable form/fit/function to use engines from multiple vendors.
- j. Digital Engineering analysis for cost of option for an Air-to-Air Refuel capability from a boom receptacle.
- k. Digital Engineering analysis for cost of option for Infrared Search and Track (IRST) or data-link cued Infra-red sensor– Internal (for development of future Adversary Variant)
- l. Digital Engineering analysis for cost of option for radar or data-link cued threat emulator
- m. Digital Engineering analysis for cost of option for additional space available for avionic systems and antennas to provide training Electronic Attack (for development of future Adversary Variant)
- n. Smart Chair:
  - i. An advanced smart chair of the aircraft cockpit and HOTAS, to provide a virtual reality (VR) for ground based practice of all flying capabilities with artificial intelligence (AI) provided capability for assessment and demo capability; for use within all Squadron secure or unsecure facilities/space.
  - ii. An advanced VR smart chair with capability to upload previous flight performance information to review and identify points for rehearsal or assessment.

**6. Additional Info: Valid responses to this RFI must meet the following criteria:**

- a. Initial notification of interest (email) within seven workdays of RFI release in order to permit Government coordination and address additional information and related questions. Requested information to include: general business name and a preferred point of contact(s) to include address, phone number(s), and e-mail address(es).
- b. The Government will designate action officer/s to address and coordinate follow-on questions and provide clarifying information pertaining to the key attributes, capabilities, and options. Advisory and Assistance Services (A&AS) contractors may provide support to the Government staff, including technical review of questions and responses.
- c. Companies need to keep potential future organization conflicts of interest in mind when responding to this RFI.

- d. ACC will utilize contractor support in a limited manner during this RFI timeframe. Any designated contractors supporting this RFI timeframe will not be part of the RFI selection or voting process but will serve to support the analysis and recommendations. A Non-Disclosure Agreement will be requested and established between the company and the designated contractor/s to prevent.
  - e. RFI response will be received by the Government no later than 23 November 2021.
  - f. Include a letter of interest, general business information and preferred point of contact information to include address, CAGE Code, Small Business Type(s) if applicable, phone/fax number(s), and e-mail address(es).
  - g. All information received in response to this Sources Sought marked "Proprietary" will be protected and handled accordingly. Interested parties are responsible for adequately marking proprietary or competition sensitive information contained in their response. The Government reserves the right to ask follow-up clarifying questions to individual companies based on proprietary information submitted without posing those questions.
  - h. Responses may provide, as part of the response, recommendations and/or concerns with the capabilities or attributes contained in this RFI.
  - i. All documentation, to include any illustrations, pictures, etc., must be no more than Fifty (50) pages in combined length and shall be either Portable Document Format (PDF) or Microsoft Word format. Formatted to 8.5" x 11" (letter size) paper with type no smaller than 11-point font.
  - j. The preferred method of delivery for RFI responses is via electronic submission through email to [Cale.Reedy@us.af.mil](mailto:Cale.Reedy@us.af.mil) and [Christine.Haupt@us.af.mil](mailto:Christine.Haupt@us.af.mil).
  - k. All correspondence sent via email shall contain a subject line that includes "RFI-ATT-[Company Name, cao ddmmyyy]".
  - l. Attachments with files ending in .zip or .exe are not allowed and will be stripped. Ensure only .pdf, .doc or .docx documents are attached to your email. All other attachments may be deleted.
  - m. To ensure receipt, combined file size of emailed attachments should be limited to 10 MB, however multiple emails are permitted if necessary.
  - n. To arrange an alternate delivery method due to file size, file format, or other concerns, contact [Cale.Reedy@us.af.mil](mailto:Cale.Reedy@us.af.mil) and [Christine.Haupt@us.af.mil](mailto:Christine.Haupt@us.af.mil).
7. Responses shall **not** contain classified information, but may contain responses up to Controlled Unclassified Information (CUI).