AREAS OF INTEREST (AOI): AI Initiative for Remote Air Traffic Control Tower

1. General Information

1.1 AoI Background

The 305th Operations Support Squadron (305 OSS) combines numerous support activities into a single unit to integrate training, planning, and operations support for Joint Base McGuire-Dix-Lakehurst (JBMDL) active duty and reserve flying squadrons. The squadron provides support to an entire fleet of C-17 and KC-46 aircraft on their worldwide missions and is responsible for ensuring the success of aerial refueling and airlift, in support of tactical, strategic, reconnaissance, transport, and bombardment forces in high-threat and chemical warfare environments. The 305 OSS's unique functions impact the entirety of airfield operations at JBMDL, which include the Air Traffic Control (ATC) towers for both the Air Force (McGuire Airfield) and the Navy (Maxfield Airfield).

JBMDL is arguably the largest, most complex joint mobility base with mission partners from every branch of service and other federal agencies. Operating, maintaining, and recapitalizing existing airfield facilities and infrastructure, while trying to keep up with mission partner priorities can be overwhelming. One of the main priorities of the 305 OSS is to operate and maintain the ATC towers, and as such, they have a requirement to keep these towers safe and fully operational to support all the mission partners on the Joint Base. However, the Lakehurst ATC tower is currently in a state of disrepair. This particular ATC tower is old and in poor condition, but the squadron cannot obtain the large amount of resources required to rebuild and/or renovate the ATC tower within acceptable specifications. This creates not only a quality of life problem for personnel, but also poses some serious safety concerns.

To solve for the challenges of operating an old ATC tower without funding to rebuild/renovate the tower, the 305 OSS requires not only an innovative solution, but a safe, integrated technological system that allows Air Traffic Controllers to achieve full mission capabilities while operating remotely from an ATC tower. The 305 OSS seeks entities to increase the USAF's capabilities to conduct their Lakehurst ATC responsibility without the need to repair the current tower. To do this, potential new capabilities with AI will need to be developed that allows Air Traffic Controllers to operate remotely and still be fully mission capable.

One or more companies will be selected to provide the process and products to be delivered by the contractor during the entire agreement period of performance in order to: 1) develop a new AI powered technology that will enhance Air Traffic Controllers capabilities, and allow them to remotely operate the Lakehurst ATC tower to control airfield operations within USAF ATC standards, and 2) establish supporting partnerships between the Air Force, industry, and academia to enable prototyping of selected innovations.

The objective is to obtain solutions to the defined challenges and initiate implementation of the solutions into the sustainment functions, preferably within 12-24 months.

2. AoI Constraints

1. The selected company/companies will be assigned an Air Force development/design project to address operating and maintaining a remote, AI powered ATC technological solution. Their solution shall describe the proposed approach to complete this project.
    a. Air Force subject matter experts (SMEs) will be available for consulting during the contract period.
    b. Information will be made available to the company on identified challenges.
    c. Government strongly prefers a process that targets fielding solutions within 12-24 months of challenge recognition.
    d. Government requires a solution that meets the following elements:
        i. Examine and understand complex problems or obstacles as they are related to USAF Air Traffic Control (ATC) and ensure a clear value proposition prior to execution;
        ii. Develop a plan for developing an AI powered ATC system that allows Air Traffic Controllers to operate remotely from the ATC tower that meets USAF and FAA tower requirements as outlined in AFMAN 32-1084 and FAA order 6480.4B, and enhances their ability to conduct airfield operations;
        iii. Design a deliberate implementation path to the identified end-state such that innovation implementation is fully integrated into Air Force operational processes, to include obtaining FAA approval within 12 months of the award date;
        iv. Execute process or technology prototyping efforts to test critical innovation elements and initial Return on Investment/Value, and reduce full implementation risks while maturing integration requirements,
        v. Set the conditions for full implementation in a way that has measurable operational return, and;
        vi. Engage non-traditional contractors in a focused manner that facilitates communication among Government, Industry, and Academia in a way that is open, creative, and centered on the specific needs of the Air Force's vision.

2. Pricing Strategy
    a. Contractor will be issued a firm-fixed price award.
3. Other
    a. Using the repeatable process, solution prototypes or experimentation campaigns

will be developed and assessed for full implementation under the awarded contract.

i. The prototypes and experimentation campaigns that meet the needs of the Air Force will be selected for additional work.

b. Performance dates:

i. Company 1: TBD

ii. NOTE: Projected dates are dependent on actual contract award date.

c. Location: Performance at JBMDL NJ, while development will be performed at the company's office location.

d. Lodging and transportation: The Company will be responsible for all travel and lodging costs.

e. Security requirements: All projects, data, and discussions will be unclassified but will contain controlled unclassified information. Ensure all contractors working within the AoI are eligible and compliant with National Agency Check with Inquiries (NACI).

f. Platform environment and software applications must be compatible to operate within the FEDRAMP Federal Information Processing Standard (FIPS) 199, moderate impact level security requirements.

3. Submission Requirements

A written solution must be sent via e-mail submission by 11:59 (EST), 30 September, 2024, with subject line stating AOI 20 – AI Initiative for Remote Air Traffic Control Tower to 87CONS Christina Vargas at christina.vargas.1@us.af.mil and Jeremy Botkin at jeremy.botkin@us.af.mil. Copy the 87 CONS CSO Team at 87CONS.CSO.Team@us.af.mil.

AOI Open Period: This AOI shall close at 11:59 P.M. (EST), 30 September, 2024.

Point of contacts: AoI questions can be sent via email to:
Technical POC: Captain Kyle Gentile at kyle.gentile.1@us.af.mil. Contracting Officers: Christina Vargas at christina.vargas.1@us.af.mil and Jeremy Botkin at jeremy.botkin@us.af.mil

**Companies are advised that any Prototype Other Transaction Agreement (OTA) 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 competitive procedures. The follow-on production contact 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 agreement could be significantly larger than that of the prototype OTA. As such, any Prototype Other Transaction Agreement will include the following statement relative to the potential for follow-on production: "In accordance with 10 U.S.C. 2371b(f), and upon a determination that the prototype project for this transaction has been successfully completed, this competitively awarded prototype OTA may result in the award of a follow-on production contract or transaction without the use of competitive procedures.