MTEC Solicitation Summary: Autonomous Closed Loop Control Mechanical Ventilation (ACLCMV)

Purpose

Solicitation MTEC-26-02-Ventilator, issued by the Medical Technology Enterprise Consortium (MTEC), represents a Request for Project Proposals (RPP) for MTEC in support of the Defense Health Agency (DHA). Military relevance is a critical component of the Enhanced White Paper submission. Strategic oversight for the award(s) supported by the RPP will be provided by the Joint Science and Technology Office.

The RPP is focused on reducing the technical risk associated with the ACLCMV system by focusing on the design, development, and demonstration of the core PCLC algorithms and the definition of the system's hardware architecture. This one-year project will demonstrate the feasibility of the autonomous control concept and mature the system design to a level sufficient to support a follow-on milestone B Engineering & Manufacturing Development (EMD) contract.

Competition is being satisfied on the front end of this OTA and no other competition will be required in later stages of development nor for the production & deployment phase of acquisition.

Funding Availability: The RPP will result in the issuance of a Firm Fixed Price (FFP) award to the selected Offeror. The USG anticipates having up to $1.9 million (M) total for this effort.

Number of anticipated awards: MTEC expects to make one FFP award to a qualified Offeror.

Period of performance: Period of Performance (PoP) not to exceed 12 months.

To view the full-length version of the RPP, visit https://mtec-sc.org/solicitations.

Scope of Work

Background

The Department of the Air Force requires a next-generation mechanical ventilator to support casualties in austere, resource-limited, and prolonged-care environments. Current ventilators require frequent, manual adjustments by highly trained medical personnel, a demand that is unsustainable during en-route care or when managing multiple patients.

This project seeks to develop an Autonomous Closed-Loop Control Mechanical Ventilator. This device will use advanced algorithms to automatically adjust ventilation settings for closed loop Positive End Expiratory Pressure (PEEP) based on the patient's physiological responses, minimizing the need for manual intervention. The goal is to create a lightweight, durable, and power-efficient ventilator that enhances patient safety and frees up medical personnel for other critical tasks during aeromedical evacuation and prolonged field care scenarios.

The overall program requirements are defined by the ACLCMV System Requirements Document (SRD). The tasks and milestones defined within this SOO shall be prioritized, with the understanding that the SRD includes all requirements needed to field the capability in potential future efforts. This SOO is specifically for a one-year technical risk reduction effort to mature key technologies before a full-scale development contract is issued.

Scope and Requirements

Offerors submitting proposals in response to the RPP shall meet the following minimum requirements:

1. Offerors must be an FDA Registered Medical Device Company

2. Offerors must have ventilator manufacturing capabilities in house.

This effort encompasses the research, design, development, and testing required to mature the ACLCMV concept over a 12-month period. Offerors shall focus on three primary areas:

1. **Physiological Closed-Loop Control (PCLC) Algorithm**: Develop and demonstrate a PCLC software algorithm capable of receiving physiological inputs and making autonomous adjustments to ventilator settings.

2. **System Architecture and Hardware Definition**: Define the hardware architecture, including the assessment of candidate components and interfaces necessary to meet the environmental and performance requirements of military operations.

3. **Investigational Device Exemption (IDE)**: Assemble application that will include investigation plan, investigator agreements, and IRB information and submit to the FDA for review and approval. This would include site selection for future clinical trials that would take place in next phase of development referred to as Milestone B Engineering & Manufacturing Development once a Critical Design Review (CDR) is completed and the design is frozen.

This effort will result in a system demonstration and review to be conducted at Fort Detrick, Maryland with the Air Force Medical Command (AFMEDCOM) Operational Medicine Test & Evaluation (A5T) group providing the Program Management Office (PMO) with the technical data needed to validate the proposed solution.

Proposers Conference

A proposers conference for this effort will be held on Thursday, July 2nd, 2026, at 11:00 AMET. This Proposers Conference will be a virtual webinar that provides potential Offerors the opportunity to interact directly with both MTEC and the Defense Health Agency related to this specific opportunity.

During this conference, MTEC will provide an administrative overview of the solicitation. Representatives from DHA will then provide an overview of the technical requirements of this effort. Finally, all attendees are invited to anonymously type questions into the webinar's Q&A function, which are answered verbally and live by the appropriate presenter from MTEC or the sponsor.

We highly encourage anyone interested in this opportunity to listen in and/or ask questions. Please register for the MTEC-26-02-Ventilator Proposers Conference at: https://events.gov.teams.microsoft.us/event/36cf8b7c-e796-4707-b437-7736163c038e@83251a03-76a5-4450-8bd6-55962891f972.

After registering, you will receive a confirmation email containing information about joining the webinar.

Points of Contact

For inquiries, please direct your correspondence to the following contacts:

- Technical and membership questions should be directed to the MTEC Senior Technical Program Manager, Dr. Chuck Hutti, Ph.D., chuck.hutti@mtec-sc.org.
- All other questions should be directed to the MTEC Program Manager, Mr. Daniel Vala, daniel.vala@mtec-sc.org.

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