

SOCOM244-008: Ruggedized Additive Mobile Manufacturing Unit (RAMMU)

ADDITIONAL INFORMATION

1. [SOCOM24.4 Topic 008 Reference.docx](#)

TECHNOLOGY AREAS:

Electronics | Materials | Weapons

MODERNIZATION PRIORITIES:

Advanced Materials

KEYWORDS:

Additive Manufacturing; Poly; metal; 3D printing; CNC machining; CNC; mobile; container; ruggedized

OBJECTIVE:

The objective of this topic is to develop applied research toward an innovative capability to use additive manufacturing in a deployed environment with the ability to decrease down time for foreign and non-standard weapons parts, motor pool parts, and dental accessories.

IMPORTANT: For SOCOM instructions: please visit: <https://www.defensesbirsttr.mil/SBIR-STTR/Opportunities/>. Go to the bottom of the page and click "DoD SBIR 24.4 Annual". Once there, go to the SOCOM SBIR24.4

DESCRIPTION:

As a part of this feasibility study, the proposers shall address all viable overall system design options with respective specifications on materials used to improve or sustain the weapons system without added failures to other parts within the weapons systems with multiple types of materials within the RAMMU used. This Additive Manufacturing (AM) shall be able to print different types of materials, being metal, plastics, polys, and steel, all while keeping the container below a 10Klbs. Threshold. The unit must be a standalone unit with a priority with limited Heavy Operating Equipment at certain locations. The ability to connect into the forward operating bases power is a must. All aspects of environmental awareness for austere environments found at all corners of the world. Operation and maintenance of this equipment can NOT rely on WIFI, Bluetooth or the internet to provide updates or services. The system must be easy to use with plug and play capability as to not increase manpower to operate the RAMMU.

PHASE I:

Conduct a feasibility study to assess what is in the art of the possible that satisfies the requirements specified in the above paragraphs entitled "Objective" and "Description."

The objective of this USSOCOM Phase I SBIR effort is to conduct and document the results of a thorough feasibility study ("Technology Readiness Level 3") to investigate what is in the art of the possible within the given trade space that will satisfy a needed technology. The feasibility study should investigate all options that meet or exceed the minimum performance parameters specified in this write up. It should also address the risks and potential payoffs of the innovative technology options that are investigated and recommend the option that best achieves the objective of this technology pursuit. The funds obligated on the resulting Phase I SBIR contracts are to be used for the sole purpose of conducting a thorough feasibility study using scientific experiments and laboratory studies as necessary. Operational prototypes will not be developed with USSOCOM SBIR funds during Phase I feasibility studies. Operational prototypes developed with other than SBIR funds that are provided at the end of Phase I feasibility studies will not be considered in deciding what firm(s) will be selected for Phase II.

PHASE II:

Develop, install, and demonstrate a prototype system determined to be the most feasible solution during the Phase I feasibility study on a deployable platform to be shipped anywhere in the world under the worst conditions and still maintain OEM type output.

PHASE III DUAL USE APPLICATIONS:

This system could be used in a broad range of military applications where any soldier is deployed in the world with little to no loss in operational usage of the weapons systems. To have the capability to get a weapon operational in a shorter time frame, within 24 hours of that part being broken.

REFERENCES:

1. Navy Post Graduate School has established the Consortium for Advanced Manufacturing Research and Education (CAMRE) to create an environment where the technology being requested can come to fruition through AM tooling. In the whitepaper included, they have partnered with multiple agencies and companies to push these limits on a NAVY vessel. The idea is to scale this platform to a smaller size in order to achieve the desired endstate.

TOPIC POINT OF CONTACT (TPOC):

None