

UNITED STATES SPECIAL OPERATIONS COMMAND

Proposal Submission

The United States Operations Command's (USSOCOM) missions include developing and acquiring unique special operations forces (SOF) equipment, material, supplies and services. Desired SOF operational characteristics for systems, equipments and supplies include: lightweight and micro-sized; reduced signature and low observable; built-in survivability; modular, rugged, reliable, maintainable and simplistic; operable in extremes temperature environments; water depth and atmosphere pressure proof; transportable by aircraft, ship and submarine, and deployable by airdrop; LLPI/LPD jam resistant C3I, electronic warfare capable of disruption and deception; near real-time surveillance, intelligence and mission planning; highly lethal and destructive; low energy/power requirements; and compatible with conventional force systems. USSOCOM is seeking small businesses with a strong research and development capability and understanding of the necessity for consideration of these SOF operational characteristics for systems. The topics on the following pages represent a portion of the problems encountered by SOF in fulfilling its mission.

USSOCOM invites the small business community to send proposals directly to the following address:

United States Special Operations Command
Attn: SOKO/SBIR Program, Topic No. SOCOM 96.2-00__
2408 Florida Keys Avenue
MacDill Air Force Base, Florida 33621-5316

The proposals will be distributed to the appropriate technical office(s) for evaluation. Inquires of a general nature or questions concerning the administration of the SBIR program and proposal preparation should be addressed to:

United States Special Operations Command
Attn: SOSB/ Ms. Debra A. James
7701 Tampa Point Blvd.
MacDill Air Force Base, Florida 33621-5316

USSOCOM has identified 2 technical topics for the solicitation released during FY 96 by DOD, to which small businesses may respond. The topics listed are the only topics for which proposals will be accepted. The topics were initiated by USSOCOM technical offices that manage the research and development in these areas. Scientific and technical information assistance may be requested by using the DTIC SBIR Interactive Technical Information System (SITIS).

Firms are encouraged to submit a proposal for an optional task which would be performed during the period between Phase I completion and Phase II contract award. The optional task provides the opportunity to reduce the gap between Phase I and II. The maximum amount of SBIR funding used for an USSOCOM Phase I award is \$100,000. Proposals that include the option task shall not exceed \$70,000 for Phase I and \$30,000 for Phase I Option. Any option proposal must be submitted at the same time and place as the basic Phase I proposal and not be included in the basic Phase I proposal page limitation. The basic Phase I proposal shall be evaluated exclusive of the option task and must be proposed and priced separately. The option portion of the proposal shall not exceed 10 pages, not exceed \$30,000, not exceed three months in duration, and be evaluated using the same evaluation criteria as Phase I proposals. The transition option work shall be included as an option in the Phase I contract and evaluated for USSOCOM unilateral exercise at any time after Phase I award through the conclusion of the basic Phase I contract. Exercise of any option shall be at the sole discretion of USSOCOM and shall not obligate USSOCOM to make a Phase II award.

Selection of proposals for funding is based upon technical merit and the evaluation criteria included in this solicitation. As funding is limited, USSOCOM reserves the right to select and fund only those proposals considered to be superior in overall technical quality and most critical. As a result, USSOCOM may fund more than one proposal in a specific topic area if the technical quality of the proposals is deemed superior, or it may fund no proposals in a topic area.

**USSOCOM
FY 1996 SBIR TOPIC INDEX**

Energy Storage

SOCOM 96-001 State of Battery Health Test Set for Special Operation Force Equipment Batteries

Materials and Processes

SOCOM 96-002 New Composite Manufacturing Processes for Special Operation Forces Maritime Craft Hulls

SUBJECT/WORD INDEX TO THE SOCOM SBIR SOLICITATION

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USSOCOM

FY 1996 TOPIC DESCRIPTIONS

SOCOM 96-001 TITLE: State of Battery Health Test Set for Special Operation Force Equipment Batteries

CATEGORY: Advanced Development; Energy Storage

OBJECTIVE: Develop a testing mechanism(s) that will determine the state of charge, power storage capacity, and the remaining useful life for different types of batteries used in Special Operation Force equipments.

DESCRIPTION: Many of the Special Operation Force (SOF) equipments use primary and rechargeable batteries as the power sources for operation. Operators must be absolutely certain that these critical equipments will function properly during operational missions. Without an accurate and reliable method to determine how long a specific primary or rechargeable battery will power a specific equipment (i.e., its internal power capacity), SOF operators take extra batteries into the field to be certain that power will be available. Backup and extra batteries comprise a major weight source for operators to carry in their rucksacks. Often the operators will choose only new batteries in hopes of maximizing battery performance in the field. This causes increased operational costs as older, still useful rechargeable batteries are neglected rather than used throughout their useful life. USSOCOM requires a battery tester, either stand-alone or integral to a battery's case, that can determine the useful life remaining in various SOF batteries. Battery chemistries of interest include common dry cells, lead acid, lithium sulfur dioxide, nickel cadmium, silver zinc, nickel metal hydride, and lithium manganese dioxide.

PHASE I: Investigate methodologies for determining the state of charge, power storage capacity, and the remaining useful life for different types of batteries used in Special Operation Force equipments. Propose a methodology(ies) for measurement for a minimum of lithium sulfur dioxide and one other battery chemistry. Application of the developed methodology to other battery chemistries is highly desired.

PHASE II: Develop, fabricate and test a state of battery health measurement system using the recommended methodology(ies). Develop a prototype system for SOF operational evaluation during this phase.

PHASE III: Expand and refine the prototype system to meet the full set of operational requirements determined during SOF operational evaluation. This will include the development of test set training, maintenance, and system documentation.

COMMERCIAL POTENTIAL: This state of battery health test set has great application to commercial markets for cellular phones, portable phones, portable computers, video cameras, and other electrical devices that use batteries.

SOCOM 96-002 TITLE: New Composite Manufacturing Processes for Special Operation Forces Maritime Craft Hulls

CATEGORY: Advanced Development; Marine Systems; Materials and Processes

OBJECTIVE: Increase the state of the art in composite manufacturing for high speed boat and other special operations craft hulls and ancillary structures to improve the craft's performance, durability, fabrication cost, and sustained operational life in the saltwater environment.

DESCRIPTION: Special Operations Forces (SOF) operate a variety of high speed boats and other water craft to perform maritime interdiction patrol and insertion/extraction missions. Composite hulls and deck structures are viable alternatives if new manufacturing methods can be developed to improve the resistance of the composite material to sustained high shock and vibration levels, and seawater. Reduction in the cost of producing the hull structure and other components and in manufacturing the boat from these components is also required.

PHASE I: Investigate a new method(s) of producing maritime components using new or existing composite materials and resins that will improve the state of the art of composite boat structure components manufacturing. Investigate feasibility of applying these new method(s) of composite manufacturing using a government furnished design for the SOF Maritime Craft to be provided after award.

PHASE II: Develop the new method(s) of producing components, and fabricate and a prototype hull section and other composite components for the identified SOF Maritime Craft. Complete outfitting the craft per government specifications and deliver for initial developmental testing and user operational evaluation.

PHASE III: Transition the new composite manufacturing methodologies to the Navy's naval architecture and maritime craft manufacturing technology base for incorporation into present SOF craft production and future SOF Maritime Craft developments.

COMMERCIAL POTENTIAL: This technology has tremendous application in the commercial sports watercraft industry and in the power boat racing industry. Lowering manufacturing costs and improving the durability of the material will greatly improve the commercial appeal of composite material in the watercraft industry.