UNITED STATES SPECIAL OPERATIONS COMMAND

Proposal Submission

The United States Operations Command's (USSOCOM) mission includes developing and acquiring unique special operations forces (SOF) equipment, material, supplies and services. Desired SOF operational characteristics for systems, equipment and supplies include: lightweight and micro-sized; reduced signature /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 deplorable 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 an understanding of the SOF operational characteristics. The following topics represent a portion of the problems encountered by SOF in fulfilling its mission. USSOCOM invites the small business community to **send proposals (original plus 3 copies) directly to the following address**:

United States Special Operations Command
Attn: SOAL-KB/SBIR Program, Topic No. SOCOM 99-00__
7701 Tampa Point Blvd.
MacDill Air Force Base, Florida 33621-5316

Inquires of a general nature or questions concerning the administration of the SBIR program should be addressed to :

United States Special Operations Command
Attn: SOSB/ Ms. Karen L. Pera
7701 Tampa Point Blvd.
MacDill Air Force Base, Florida 33621-5316
Tel (813) 840-5514
Fax (813) 840-5481
E Mail perak@socom.mil

USSOCOM has identified these 3 technical topics for the FY 99.1 solicitation. Proposals will only be accepted for these 3 topics. Topics were initiated by the USSOCOM technical offices responsible for the research and development in these specific areas. The same office is responsible for the technical evaluation of the proposals. Proposal evaluation factors are listed below. Each proposal must address each factor in order to be considered for an award. 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 with 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 funding. 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. Options must be submitted with the basic Phase I proposal and will 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 will 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. The maximum time frame for a Phase I with or without option is 6 months. Exercise of any option shall be at the sole discretion of USSOCOM and shall not obligate USSOCOM to make a Phase II award.

Evaluation Criteria - Phase I & II

1) The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution.

2) The qualifications of the proposed principal/key investigators supporting staff, and consultants. Qualifications include not only the ability to perform the research and development but also the ability to commercialize the results.

3) The potential for commercial (Government or private sector) application and the benefits expected to accrue from this commercialization.

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

USSOCOM also encourages contractors to participate in the SBIR Fast Track program as described in the DOD 99.1 Solicitation. Proposing Options in the initial proposal will not prevent a contractor from participating in the Fast Track Program, however, the total USSOCOM funds for a Phase I, options, and the Fast Track funding will not exceed $140,000. It is anticipated the vast majority of Fast Track proposals will receive interim funding between Phases I and II, and that the percentage of Phase I Fast Track projects that are selected for Phase II awards should be significantly higher that the overall percentage of Phase I projects that are selected for Phase II.

USSOCOM offers information on the Internet about its SBIR program at http://www.socom. mil

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FY 99.1 SBIR TOPIC INDEX

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FY 99.1 TOPIC DESCRIPTIONS

SOCOM 99-001 TITLE: High Speed Composite Waterjet Propulsion Systems

TECHNOLOGY AREA: Materials, Processes and Structures

OBJECTIVE: The development and production of a domestic high efficiency, mixed flow, composite waterjets. These boat propulsion systems would represent the only mid-sized or large high speed waterjets made in America, and the only high speed waterjets available worldwide constructed of composite materials.

DESCRIPTION: Waterjets presently available worldwide are constructed of aluminum, whereas, high speed boats are generally constructed from composites. Typically, the waterjets are of aluminum construction, which imposes weight, cost, and technical problems when interfacing into the composite craft. Additionally, there are presently no domestic manufacturers of these propulsion systems for high speed water craft. Forming the inlet section (scoop injector) of the waterjet using composite material as part of the lay-up of a composite hull could significantly reduce the weight, cost, and technical difficulty of interfacing waterjets and composite craft. The use of integral composite intakes in composite vessels would eliminate mechanical fastening and structural and material discontinuities in composite hull bottoms, while offering weight and maintenance savings. There is a market, both military and commercial, for a high speed, lightweight, high efficiency, corrosion resistant propulsion system, which will offer designers and builders of high speed craft a cutting edge, domestic, non-developmental, and proven propulsion system.

PHASE I: Build and test a prototype composite jet unit and investigate the predicted impact of installation of the units on the 11 meter (m) military rigid hull inflatable boat (RIB).

PHASE II: Based on Government acceptance of the prototype design, construct and install two units in an 11M RIB test craft, and document the weight savings and performance impact. Provide a report including performance, weight, funding, maintenance, scheduling and logistical impact of the units versus the aluminum counterparts currently used.

PHASE III DUAL USE APPLICATIONS: These propulsion systems can be considered as an alternate propulsion system for composite propeller driven craft operating in the 35 to 60 knot speed range, and as an alternate for all aluminum waterjet installations. The low cost of manufacture, compared to forming or casting aluminum, and the ease of installation by molding the intakes into the hull, will reduce the price of these propulsion systems and allow pleasure craft builders to offer larger waterjet propelled craft at a competitive price to propeller systems.

SOCOM 99-002 TITLE: Advanced Technology Exposure Suit (ATES)

TECHNOLOGY AREA: Clothing, Textiles and Food

OBJECTIVE: Develop an advanced exposure suit, wetsuit, or new components for existing systems to provide military forces with a garment capable of transitioning from water/underwater environments directly into extended wear in an operational environment.

DESCRIPTION: Operations in extreme weather environments combined with water operations create a need for an advanced wetsuit-like garment system capable of extended wear in and out of the water. The system should provide environmental protection to a submerged diver for periods of up to 8 hours, and then provide environmental protection for land operations for periods of up to 5 days. The system should allow for multiple and uninterrupted transitions between land and underwater environments. The system should address total body

environmental protection, while providing for maximum body movement so as not to impede diving, swimming, and land combat operations. The system should be self-contained, and have no external power requirements.

PHASE I: Investigate and present to the Government potential materials and design concepts suitable for ATES. Based on Government guidance, design, fabricate, and conduct laboratory-scale testing of a prototype ATES.

PHASE II: Based on the Phase I results, refine and develop the final ATES design. Fabricate and test prototypes using Government provided test profiles. Following Government review and comment on the prototype design and test results, modify and refurbish test prototypes and submit to the Government for operational assessment. Make final design changes based on Government input following the operational assessment.

PHASE III DUAL USE APPLICATIONS: The ATES would have application for recreational sports enthusiasts (e.g., tri/bi-athletes, personal watercraft operators, divers, and surfers).

SOCOM 99-003 TITLE: Remote Sighting System for Weapons

TECHNOLOGY AREA: Conventional Weapons

OBJECTIVE: Develop an advanced video-based sighting system that interfaces with standard small arms to provide remote sighting capabilities for low-visibility/obstructed view targeting environments.

DESCRIPTION: The ability to sight small arms accurately in situations with obstructed views and low-visibility would significantly enhance the safety and effectiveness of ground troops. This is particularly true for urban and low-intensity situations where operation from cover or concealment markedly reduce the threat to the operator. A system is envisioned that combines video images and weapons sighting into one remote display (e.g. head mounted), and operates effectively in low-visibility conditions. Low-powered illuminator, digital sensor, display, and processing technologies are presently available to support this requirement. A system should be developed that integrates these technologies, using low-cost components, to provide the desired capability. Quick assembly, disassembly, and adaptability (i.e., mounting and sight calibration) to a variety of weapons are essential. The system must be able to withstand the rigors of combat operations, to include airdrop and diving operations to 66 feet sea water. The system should be designed in a modular and open system fashion to provide for easy upgrades as the various components are improved.

PHASE I: Design and fabricate a prototype system, and demonstrate its capabilities. It is critical here to demonstrate operational feasibility in terms of performance, power requirements, configuration, survivability, and effective interface with representative weapons and the operator.

PHASE II: Refine design using the results of the Phase I investigation, and fabricate and test prototypes. Following Government review and comment on prototype design and test results, modify and refurbish test prototypes and submit to the Government for operational assessment. Make final design changes based on Government input following operational assessment.

PHASE III DUAL USE APPLICATIONS: The remote sighting system would have application to enhance the safety and effectiveness of military operators and law enforcement personnel. Additional applications include sensing/sighting systems for robots and security systems. To increase the system's utility and applicability, it could be further designed to provide situational awareness inputs to tactical C4I elements.