

STATEMENT OF OBJECTIVES FOR
Hyper-Enabled Awareness Kit (HEAK)

I. INTERNATIONAL TRAFFIC AND ARMS REGULATION: The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), which controls the export and import of defense-related material and services. Vendors must disclose any proposed use of foreign nationals, their country of origin, and what tasks each would accomplish in the statement of work in accordance with the solicitation.

II. BACKGROUND: Ground forces require an improved friendly-forces situational awareness (blue force tracking) and messaging capability to improve communication and enable better/faster decision making. Currently, forces primarily use radio/voice communications for events such as convoy headcount/check-in or other situations where a simple yes/no/numerical answer would suffice. This adds time to the communication cycle, because each responder has to respond sequentially over voice communications. A secure text/visual-based communication system with an easy-to-use interface would allow each responder to respond simultaneously – simplifying and expediting the communication cycle. This, coupled with a blue force tracking system to allow the position of each message sender to be displayed, would increase operator situational awareness while enabling easier flow of information.

III. OVERALL OBJECTIVES: In order to achieve this goal of providing increased situational awareness while expediting communication cycles (thereby hyper-enabling the operator), a system consisting of a wrist-mounted user display device, rifle mounted controller, soldier-worn processor pack, and software to integrate them all together is required. The development of the technical requirements (listed in section V) could be proposed to be broken out into separate phases as the Performer sees fit. The Performer should expect to work with USSOCOM operators to refine operator touchpoints and functionality throughout the development of the system.

IV. DELIVERABLES:

A. PROTOTYPE DELIVERABLES:

- a. A total of 20 Operator-level kits (user display device (e.g., wristwatch, heads-up display, etc.), rifle-mounted controller (must be able to mount to MIL-STD 1913 rail), processor pack (must be able to mount to operators plate carrier vest)
- b. 4 Mission Planning Suites (Laptop/tablet, docking station for processor packs)

B. TRAVEL COSTS: The Performer is responsible for any travel costs incurred to demonstrations/user feedback events.

C. DOCUMENT DELIVERABLES: The Performer shall provide the following documents

- 1. Monthly Status Reports
- 2. Final Report

V. TECHNICAL REQUIREMENTS

a. **Blue Force Picture:**

The Blue Force Picture (BFP) shall show representations of friendly forces arranged according to their relative location on a simple 2D display. From this picture, the user shall not only be able to ascertain where friendlies are located relative to them in terms of distance and direction, but shall also be able to determine which friendly sent a message. This shall be integrated into the software for the wrist mounted user display/processor module.

b. **Basic Messaging:**

A text/visual messaging system shall be included in the software to enable warfighters to send and receive routine messages using the system. Message content and behavior shall be customizable by the user so they can easily migrate appropriate radio calls to the text/visual messaging system. In addition, the system shall allow a user to select groups of other users (instead of just an individual) to be able to send the message to. This shall be integrated into the software for the wrist mounted user display/processor module.

c. **Check-in Messaging:**

Check-ins would be a more advanced form of a Basic Message. This involves a different level of interaction by users and data management by the system. Military communications are often used to facilitate collaborative tasks involving multiple users. An example is the Vehicle Check-in that requires a total headcount to be taken before a vehicle convoy can depart. This requires all Vehicle Commanders to respond sequentially to the Lead Navigator with their headcount, the Lead Navigator must then calculate total headcount and only if it matches the expected headcount can the navigator give the command to depart. The system shall enable a Lead Navigator to send a check-in request to all Vehicle Commanders, who then shall be able to respond simultaneously with their headcount. The system shall calculate the reported headcount. **The Vehicle Check-in is not the only application of this type of message, and it should be user-configurable for different scenarios.** This shall be integrated into the software for the wrist mounted user display/processor module.

d. **Quick Reference Navigation:**

It is recognized that tools like Android Tactical Assault Kit (ATAK) provide users with comprehensive navigation capabilities. However, as an augmentation to that capability, the system shall also be able to perform basic navigation functions. This shall be integrated into the software for the wrist mounted user display/processor module.

- i. **Task 1: Basic “quick reference” navigation**
The Blue Force Picture is primarily intended to show friendlies. However, it shall be capable of displaying items provided by ATAK or other systems. The BFP with its inherent distance and direction shall provide a simple means of navigating to locations shown.
 - ii. **Task 2: “Go to” and other basic nav functionality**
Rather than use the BFP to navigate to a displayed place, person or object, it shall be possible to provide a more focused navigation experience. Users, when customizing messages to send, will be able to pick “Go to” functionality to be included with a received message. This will enable recipients of the message to select “Go To...” and see an arrow pointing the way to the destination along with a calculated distance.
- e. **Mission Payload:**
The system firmware and software will need to be installed and updated periodically, mission configuration will need to be distributed to each processor pack device before a mission, and mission logs and diagnostics offloaded afterward. System firmware and software shall be developed based on a number of variables including what form factor the fixed and removable storage of the system hardware takes, how it is interacted with before and after missions, how mission details are emplaced and logs retrieved, and how system firmware and software updates are accomplished.
- f. **Workflow Configurator:**
Users shall be able to use an intuitive, easy-to-use configuration tool developed/provided by the Performer on a laptop to select and tailor their workflows to their Tactics, Techniques, and Procedures (TTPs).
- g. **Mission Planner:**
This software shall allow entry of and collate all relevant mission specifics into one of the workflows developed with the workflow configurator, and then output a payload for uploading to each processor pack. It shall also allow import of existing mission planning data from suitable sources to reduce duplication of effort by planning personnel.
- h. **Connectivity Requirements:**
The processor pack shall have wired and wireless capability.