

**STATEMENT OF WORK  
FOR  
TSWG (DHS R-1094) T-1767A  
Incident Command and Control System**

**1.0 Purpose and Scope.** The objective of this project is to develop an Incident Command and Control System that shall provide for the tracking and physical monitoring of emergency response personnel in high heat, hazardous atmospheric conditions, and limited visibility conditions in structures, and identify thermal or chemical hazards in structures. Data from the responders must be transmitted outside the building to the incident commander. The system must be compact, easy to use, and designed to provide critical information both to the individual responder in the structure and to the incident commander outside. The system must be compact, wearable, requiring minimal operator intervention.

**2.0 Applicable Documents.** None.

**3.0 Task Requirements.** The contractor shall design, integrate, test and deliver a system to locate, track, and monitor emergency response personnel inside a building or other structure from outside of the structure. The contractor shall include the following design requirements and capabilities:

- a) Determine real time three-dimensional positional location information from within structures.
- b) Determine location/position of sources of high heat and combustion sources.
- c) Determine surrounding hazardous atmospheric composition.
- d) Monitor physiology of the emergency responder to include heart rate, core temperature, and other indicators of health status.
- e) Receive an audible alert signal or minimal printed warning or other information on helmet-mounted visual display.
- f) Integrate the above data into a visual display within an emergency responder protective mask. Controls for visual display must be simple and operable while the responder is in Personal Protective Equipment.
- g) Transmit data from 1-6 above through buildings, structures, and/or rubble to an incident command vehicle or station outside, without the use of repeaters inside the structure or reliance on existing emergency communications systems.
- h) Fuse data and providing for an operationally suitable, decision support presentation, compatible with existing operating systems on a PC/laptop monitor for the incident commander.

**3.1 Project Plan.** The contractor shall prepare a project plan that shall include the purpose of the effort, a description of each task, list of resources required, detailed schedule and cost breakdown. The contractor shall present the project plan at the kick-off meeting. (CDRLs A001 and A002).

**3.2 Kick-off Meeting.** The contractor shall host a kick-off meeting for this effort not later than 45 days after contract award (ACA).

**3.3 Tasks.** This SOW is designed to be executed in three phases. At the end of each phase the contractor shall provide an in-depth report on the outcome of the completed phase. The phases shall generally follow the tasks described below.

**Task 1. Lifeline, Portable Safety Monitor (PSM) and sensor/detector integration.** The contractor shall integrate wearable sensors (position, hazardous atmospheres, gas detectors, temperature probes, heat stress monitors, and wireless interconnectivity) that will be expanded and reengineered for improved interoperability. This effort shall be integrated with the existing CoBRA software shell that integrates with existing fielded systems.

**Task 2. Develop Dimensional Position Sensor (DPS).**

The contractor shall develop the DPS, which integrates an electronic compass, gyroscopes, barometer, accelerometer, Ultra-Wideband transmitter and GPS, and the interface it to the CoBRA command software information system..

**Task 3. Operational Test and Evaluation (OT&E).**

The Incident Command and Control System shall be tested in a range of environments, with the participation of both the developers and real-world users. Upon completion of testing and correction of any deficiencies found, the prototype systems shall be delivered to the TSWG.

The contractor shall allow designated personnel invited by TSWG to attend during task 3 testing phase. The contractor shall prepare a test plan to be approved by the government. A detailed report describing the test protocol conducted, and all scale test results shall be provided to TSWG as part of the final report. After completion of the OT&E of task 3, two Incident Command and Control Systems shall be delivered to the Government. (CDRL A003, A004, A006)

**3.4 Operational Evaluation and Testing.** The contractor shall support and coordinate an operational evaluation (Task 3) of the developed system with personnel assigned by TSWG upon the completion of this effort.

**3.5 Meeting Support/informal Technical Information.** The contractor shall support the TSWG Annual Program review and functional subgroup meetings by preparing presentation material relating to program status, accomplishments, issues and deliverables including picture or graphics files. The contractor shall prepare electronic or hardcopy viewgraphs that describe the program and results. The contractor shall prepare and submit meeting agendas, handouts, presentations, and minutes in support of meetings, conferences, symposia, or demonstrations held in support of this effort. (CDRL A005)

**3.6 Documentation of Project.** The contractor shall prepare a final report that shall document the development of the Incident Command and Control System, prototype specifications, and associated drawings and schematics. The contractor shall prepare operational manuals that will cover safety precautions associated with equipment operation, instructions for equipment operation and any associated maintenance. The contractor shall collect video highlights covering the progress throughout the project. The contractor shall take digital pictures of various stages of the project to be delivered in JPEG format on CD disk. (CDRL A004, A008, A009)

**3.7 Training and Operational Demonstration.** The contractor shall coordinate and facilitate an operational demonstration and training session to TSWG selected individuals, from military, federal, and state EOD as well as civilian bomb squad communities upon completion of this project.

**3.8 Technology Transition.** The contractor shall prepare a Technology Transition Plan that addresses all elements to be considered in transitioning the technology to the intended users. This plan shall include information on the management of intellectual property, and an assessment of regulatory, security, export control, liability, and suitability information as well as a discussion of the strategy for transitioning the technology to production. (CDRL A007, A008).

#### **4.0 Deliverables**

**4.1 Hardware.** Upon completion of tasks 1 through 3, the following items shall be delivered to the sponsor or designated activity: Two Incident Command and Control Systems shall be delivered to a government facility which will be identified prior to completion of task 3. The deliverables shall include the CoBRA software with integrated CHEM Agent Responder Tool, and provide interfaces to the PSM, DPS and sensor suites.

**4.2 Data.** The contractor shall deliver data deliverables as delineated herein. All documentation (proposals, correspondence, meeting minutes, reports, plans, etc.) shall have the Task Title, Task Number and Contract Number on the front sheet. Additionally, all data shall be delivered in accordance with the Schedule as specified in the attached Contract Data Requirements List (CDRL), DD form 1423.