**SMALL BUSINESS INNOVATION RESEARCH**

**phase ii statement of objectives**

**for**

**INTEROPERABLE SIMULATION & GAMING MESH**

**TOPIC SOCOM 203-D009**

**23 August 2019**

I. **INTERNATIONAL TRAFFIC IN 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. Offerors 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 section 5.4.c.(8) of the solicitation*.*

II. **BACKGROUND**:

This is a Direct to Phase II Small Business Innovation Research project to prototype a software tool for creating Interoperable Simulation and Gaming Mesh. The tool will take user-generated content or tactically collected sensor data as points, image raster, or consolidated meshed data that can be correctly georeferenced to the earth’s surface and segment it into the appropriate Open Geospatial Consortium (OGC) CDB-compliant data layers.

III. **OVERALL OBJECTIVE**:

The objective of this Statement of Objectives is to develop an interoperable simulation and gaming mesh capability with real world geospatial intelligence data.

IV. **Requirements**

A. **General:** The Contractor shall deliver a prototype software tool for automating the creation of OGC CDB-compliant geospatial data layers from tactical sensor data in non-traditional formats such as points, image raster, and mesh for Government follow-on testing, evaluation, and demonstration.

1. **Detailed Tasks**: The Contractor shall design, develop, test, demonstrate, and deliver a software tool capable of automating the production of appropriate OGC CDB-compliant geospatial and 3D data layers from non-traditional tactical sensor data such as points, image raster, and/or meshed formats common to game engines:

1. To stimulate advances in technology and innovation, solutions including reusable code should be considered as well as re-use of open source code and integrations with fielded SOF systems utilizing existing open standards.
2. To the maximum extent possible, artificial intelligence and machine learning methodologies including Robotic Process Automation shall be used to train and improve the algorithms over time.
3. Manual intervention shall be minimized to pick tie points between the imagery and the vector data so that the algorithms correctly align vector data to the imagery to correlate the data.
4. The AI/ML tool should learn to recognize patterns in a given a set of data to automatically tie the vectors to the imagery.
5. Most of the tactically collected data has some geo-referencing data to get it close to where the data exists in the real world. The non-traditional data also has good relative accuracy but needs to be georeferenced to existing geospatially accurate, correlated data.
6. Non-traditional data may be edge matched via pattern recognition algorithms to existing imagery to improve its geospatial accuracy and place the data into its correct location on the earth’s surface.
7. Once the data is in the correct location, then it needs to be segmented to provide a good Digital Terrain Model (DTM) and Digital Elevation Model (DEM). 3D features must be extracted into OGC CDB-compliant 3D models.
8. To improve the data for simulation-ready applications such as Unity and Semi-Automated Forces, CDB raster material data and/or multi-spectral or hyper spectral signatures shall be used to improve the segmentation and apply material codes to the polygonal surfaces.
9. Meet a Technology Readiness Level 7 which is defined as “System prototyping demonstration in an operational environment (ground or space): System prototyping demonstration in operational environment. System is at or near scale of the operational system, with most functions available for demonstration and test. Well integrated with collateral and ancillary systems. Limited documentation available.”

V. **Unique Item Identification:** The Contractor shall include the DoD unique item identifications or a DoD recognized unique identification equivalent for the prototypes delivered. This includes a description and cost breakout as applicable. Information on unique item identifier types is at <http://www.acq.osd.mil/dpap/UID/uid_types.html>. The guide is at <http://www.acq.osd.mil/dpap/UID/guides.htm>. This is in accordance with DFARS 252.211-7003.

VI. **Ship To Address:** The Contractor shall deliver all prototypes systems under this contract to the following address:

USSOCOM SOF AT&L (DoDAAC: F2VUQ0)

7701 Tampa Point Blvd.

MacDill AFB, FL 33621

VII. **SHIPPING COSTS:** The Contractor shall pay all costs to ship all product deliverables to and from the validation testing /demonstration sites and to the final delivery location.

VII. **DOCUMENT DELIVERABLES:** The Contractor shall provide the following documents to the respective specified addresses during the Phase II Period of Performance:

1. Kick-Off/System Requirements Review: See CDRL A001.
2. Monthly Progress Reports: See CDRL A002.
3. Developmental Test Plan for Performance Validation: See CDRL A003.
4. Developmental Test Report for Performance Validation: See CDRL A004.
5. Business Plans: See CDRL A005.
6. Final Technical Report: See CDRL A006.
7. Preliminary Design Review: See CDRL A007.
8. Critical Design Review: See CDRL A008.

IX. **TESTS AND DEMONSTRATIONS:** The Contractor shall conduct tests, demonstrations and hands-on workshops with users to validate that the prototype software tool meets or exceeds all the requirements specified in this Statement of Objectives. (See CDRL A003 and CDRL A004).

1. The Contractor shall demonstrate that the prototype software tool meets or exceeds the technical performance requirements above.
2. The Contractor shall participate in quarterly hands-on workshops with SOF users and incorporate user input received in contractor’s development efforts.
3. The Contractor shall support test and evaluation in an operationally realistic environment including a government test bed or other location determined by the COR.

X. **ENVIRONMENTAL AND SAFETY:** Not applicable

XI. **GOVERNMENT FURNISHED PROPERTY (GFP) / GOVERNMENT FURNISHED PROPERTY (GFE) / GOVERNMENT FURNISHED INFORMATION (GFI):**

1. Contractor requests for GFP, GFE or GFI shall be included in the proposal for consideration. Any materials delivered by the government to the contractor shall be listed here.
2. Government will provide representative data and GFI with Limited Distribution (LIMDIS), For Official Use Only, for development, testing, experimentation, and evaluation. Release of LIMDIS shall be in accordance with 48 CFR Section 252.245.7000, “Government-Furnished Mapping, Charting, and Geodesy Property.” All LIMDIS data will be returned to the Government or destroyed during contract close out.

XII. **MEETINGS AND REVIEWS**: The Contractor shall attend the following meetings and reviews.

A. Phase II Kick-Off meeting shall be conducted not later than thirty (30) calendar days after contract award. The Contractor shall provide the Government:

1. A Phase II Kick-Off Meeting Read-Ahead no less than seven (7) calendar days prior to the Phase II Kick-Off Meeting / System Requirements Review Meeting (See CDRL A001).

2. An initial Program Management Plan for accomplishing all objectives specified in this Statement of Work. (See CDRLs A002).

3. Conceptual Design Drawings no less than ten (10) calendar days prior to the Phase II Kick-Off/System Requirements Review Meeting (See CDRL A001).

B. Preliminary Design Review (PDR) - This meeting shall be conducted at the Contractor’s facility no more than one hundred and eighty (180) calendar days after Phase II contract award. The Contractor shall provide teleconference capability for those participants unable to travel. The Contractor shall provide the Government:

1. A Preliminary Design Review and Materials Read-Ahead Briefing no less than ten (10) calendar days prior to the PDR (See CDRL A007).

2. A Detailed Design Report (See CDRL A007).

3. Trade off considerations for the design. (See CDRL A007).

4. Results of any testing to date. (See CDRL A004).

5. Resolution to any Contractor/Government issues or concerns.

6. An assessment of other potential benefits / impacts including total cost of ownership, software data rights, and a recommendation of any changes for consideration / incorporation into the subsequent design that will be provided to the Government at the follow-on Critical Design Review. (See CDRL A007).

C. Critical Design Review (CDR): This teleconference meeting shall be arranged by the Contractor two (2) weeks prior to the end of the contract completion date. The Contractor shall provide the Government:

1. A Critical Design Review and Materials Read-Ahead Briefing no less than ten (10) calendar days prior to the CDR (See CDRL A008).

2. A Detailed Design Report (See CDRL A008).

3. Trade off considerations for the design. (See CDRL A008).

4. Results of any testing to date. (See CDRL A004).

5. Resolution to any Contractor/Government issues or concerns.

D. Phase II Close-Out Meeting: The Phase II Close-Out Meeting shall be conducted no earlier than seven (7) calendar days prior to the conclusion of the Phase II Period of Performance. The Contractor shall provide the Government:

1. A briefing on the test verification (See CDRL A004).

2. An update of the progress to date. (See CDRL A002)

3. Resolution to any Contractor/Government issues or concerns.

XIII. **NOTIFICATION:** The Contractor shall notify USSOCOM no less than thirty (30) calendar days prior to tests, demonstrations and reviews at the Contractor’s facilities to ensure USSOCOM representatives can attend should they desire to do so.

XIV. **TRAVEL REQUIREMENTS:** The Contractor shall comply with the Federal Acquisition Regulation 31.205-46 (<http://www.gsa.gov/perdiem>) on proposing all travel related costs. The Contractor shall include the costs associated with the following travel requirements in the proposal:

A. Phase II Kick-Off Meeting: Tampa, Florida; one (1) overnight, no more than two (2) Contractor representatives.

B. Phase II Close-Out Meeting: Tampa, Florida; one (1) overnight, no more than two (2) Contractor representatives.

C. Quarterly Workshops with Users: Tampa or Hurlburt, Florida; two (2) overnights, no more than two (2) contractor representatives.

XV. **MANDATORY REPORTING:**

A. The Contractor shall report ALL contractor labor hours (including subcontractor labor hours) required for performance of services provided under this contract for the U.S. Special Operations Commands via a secure data collection site. The Contractor is required to completely fill in all required data fields using the following web address: <http://www.ecmra.mil/>.

B. Reporting inputs will be for the labor executed during the period of performance during each Government fiscal year (FY), which runs October 1 through September 30. While inputs may be reported any time during the FY, all data shall be reported no later than October 31 of each calendar year, beginning with 2014. Contractors may direct questions to the help desk at help desk at: http://www.ecmra.mil.

**XVI. DISCLOSURE OF UNCLASSIFIED INFORMATION:**

A. On September 21, 2001, the Department of Defense designated Headquarters US Special Operations Command (USSOCOM) a sensitive unit, as defined by Title 10 United States Code (USC) Section 552 (10 USC 552). In keeping with this designation, unclassified information related to USSOCOM military technology acquisitions managed by USSOCOM or any of its component commands, will be designated Controlled Unclassified Information (CUI). As such, the contractor hereby unequivocally agrees that it shall not release to anyone outside the Contractor’s organization any unclassified information, regardless of medium (e.g., film, tape, document, Contractor’s external website, newspaper, magazine, journal, corporate annual report, etc.), pertaining to any part of this contract or any program related to this contract, unless the Contracting Officer has given prior written approval. Furthermore, any release of information which associates USSOCOM, Special Operation Forces (SOF), or any component command with an acquisition program, contractor, or this contract is prohibited unless specifically authorized by USSOCOM.

B. Requests for approval shall identify the specific information to be released, the medium to be used, and the purpose for the release. The Contractor shall submit its request to the Contracting Officer at least 45 days before the proposed date for release for approval. No release of any restricted information shall be made without specific written authorization by the Contracting Officer.

C. The Contractor shall include a similar requirement in each subcontract under this contract. Subcontractors shall submit requests for authorization to release through the prime contractor to the Contracting Officer.

D. The Contractor further understands that Title 18 USC Section 701 specifically prohibits the use of the USSOCOM emblem or logo in any medium (e.g., corporate website, marketing brochure, newspaper, magazine, etc.) unless authorized in writing by USSOCOM. Forward any requests to use the USSOCOM emblem or logo through the Contracting Officer.