

HSBP1010J00580

Attachment 1: Statement of Work

Tactical Communications Modernization Project Equipment and Services for Rio Grande Valley

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Statement of Work

Tactical Communications Modernization Equipment and Services

U.S. Customs and Border Protection Office of Information and Technology Enterprise Networks and Technology Support Wireless Technology Programs

BACKGROUND

The US Customs and Border Protection (CBP) Tactical Communications Modernization Project seeks to meet CBP's critical tactical communications needs by providing robust, modernized, interoperable, and scalable Land Mobile Radio (LMR) communications capabilities for CBP field personnel in 20 geographic focus areas across the United States. Effective LMR communications are vital to officer safety in the field for border patrol, customs inspection and air/marine operations.

To facilitate cost effective growth and interoperability with CBP's Tactical Communications (TACCOM) partners, CBP seeks a standards based solution (i.e., APCO Project 25 (P25), Internet Protocol (IPV6)) with open standards interfaces for all major system components including user equipment. The modernized LMR solution must be narrowband, provide (b) (7)(E) capabilities, support (b) (7)(E) be backward compatible with the existing and legacy infrastructure and subscriber equipment and integrate into identified Department of Homeland Security (DHS) and CBP systems.

CBP has previously established the TACCOM Modernization Project Office to meet these critical modernization needs. Within the project office, a project governance structure is in place, consisting of government and contractor staff that provide guidance, direction, facilitation and oversight of TACCOM projects and tasks. Planning, requirements gathering and preliminary designs are in various stages of completion for the Houlton, Rio Grand Valley (RGV) and El Paso focus areas. This statement of work (SOW) continues the current efforts specifically within the RGV focus area.

SCOPE

The scope of this SOW is to provide services and equipment to the CBP, Office of Information and Technology's (OIT), Enterprise Networks and Technology Support (ENTS), Wireless Technology Programs (WTP) TACCOM Project in support of the TACCOM system modernization project within RGV.

The Contractor shall provide a standards-based tactical communications solution that meets CBP's requirements for narrowband channel assignments compliant with (b) (7)(E) security. In addition the contractor shall design for Internet Protocol-based architecture and support GPS capability, (b) (7)(E). The LMR systems shall be backward compatible with existing equipment and interoperable with CBP partners as identified in RGV.

The Contractor shall supply equipment and provide development and deployment support as needed to meet the Government's System Engineering Life Cycle (SELC) Stages— Stage 3 (Design), Stage 4 (Development), Stage 5 (Integration and Test) and Stage 6 (Implementation). The effort for Stages 4 through 6 includes, but is not limited to, assistance in engineering design and analysis, site development, equipment configuration, system installation, system testing and evaluation services in support of Development Testing (DT), and Operational Test and Evaluation (OT&E), training, warehousing, transportation, field operations support, and equipment and material supply as required by this SOW.

The equipment/services requested under this SOW shall be obtained /conducted in coordination with the Government Contracting Officer's Technical Representative (COTR), and/or the COTR-designated Task Monitor(s).

APPLICABLE DOCUMENTS

All applicable and reference documents are listed below. The Government developed documents will be provided by the Government upon request and or at time of award.

1. DHS Acquisition Directives, AD102-01 (AD102-01-001).
www.dhs.gov/.../mgmt_directive_102-01_acquisition_management_directive.pdf
2. Customs Directive No. 51715-006 Separation Procedures for Contractor Employees (CF-242) (to be furnished upon award);
3. (b) (7)(E)
4. (b) (7)(E)
5. (b) (7)(E)
6. (b) (7)(E)
7. CFR29 Labor Part 1926. OSHA - Work force safety
8. CFR47 Federal Communications Commission Part 17 - Construction, marking and lighting of antenna structures.
9. National Fire Protection Association (NFPA) 70 - National Electric Code (NEC) (<http://www.nfpa.org/>).
10. US Army Corp of Engineers, EM-385-1-1, Safety And Health Requirements Manual
11. (b) (4)(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)
(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)
(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)(b) (4)
12. (b) (7)(E)
13. (b) (7)(E)
14. CBP TACCOM Modernization Test and Evaluation Master Plan (TEMP) (Draft to be furnished upon award)
15. Federal Acquisition Regulation (FAR); 52.204-11; <https://www.acquisition.gov/far/>
16. DHS Management Directive 023-1 Environmental Planning Program
17. National Historic Preservation Act of 1966, as amended (PL-96-515)
18. Archaeological and Historical Preservation Act of 1974, as amended (PL-93-291)
19. National Environmental Policy Act of 1969 (PL-90-190)
20. Executive Order #11593, "Protection and Enhancement of the Cultural Environment"
21. Endangered Species Act of 1973, as amended
22. American Society for Testing and Materials ASTM International E 1527/1528 standard
23. Clean Air Act (Citation: 42 U.S.C. ' 7401-7671q) and Clean Water Act (33 U.S.C. §1251 et seq. (1972)
24. 36 CFR Part 800 National Historic Preservation Act (NHPA) Section 106
25. DOI/USFWS Section 7 (ESA) consultation requirements

26. Administrative Procedures Act, 5 U.S.C. 551
27. DHS Earned Value Management Guidance
28. DHS EAGLE Information Technology Support Services Contract

TASK AREAS

The tasks to be performed under this SOW are listed in the following sections, which correspond to the DHS Systems Engineering Life Cycle (SELC) as tailored for Tactical Communications modernization projects.

The Contractor shall perform the tasks and subtasks within this SOW for the RGV Focus Area.

The Contractor shall provide a plan (Project Management Plan and Master Schedule), approach and details to address all of the tasking stated within this SOW organized by the focus area. Table 1 lists the current status and required effort. Appendix C of this SOW provides a detailed description of the requirements for RGV. Note, it is expected that the Government will have completed the environmental, structural, and permitting tasks for a number of sites within four (4) months of award. A few sites (e.g., raw land sites) may take approximately 18 months to finish the environmental, structural, and permitting tasks.

Table 1: Summary Required Effort Mapped to SELC

Status	Required Effort SELC
1. Planning (Stage 1) complete	1. Planning (Stage 1) no activities needed
2. Requirements Definition (Stage 2) complete	2. Requirements Definition (Stage 2) – no activities needed
3. Design (Stage 3) Initial system design and site surveys complete. Frequency plan approved by NTIA	3. Design (Stage 3) Revise and validate system design; review site survey data and assess site readiness (i.e., complete Stage 3 as needed)
	4. Development (Stage 4) including site acquisition / lease support activities
	5. Integration and Test (Stage 5) activities
	6. Implementation (Stage 6) activities

TASK 1: PROJECT MANAGEMENT/PLANNING (SELCT STAGE 1)

Key Project Personnel

The Contractor shall be responsible for providing personnel having the requisite skills necessary to support and accomplish the tasks outlined in this SOW and dedicated full-time to the project. The Contractor shall identify and propose key personnel and their associated EAGLE labor categories. The Contractor shall provide the following key personnel: Project Management with PMP Certification, Professional Engineer (PE) certified in the State of Texas, RF System Engineer(s) with experience in LMR design with Electrical Engineering background and Construction Manager(s) with communications site deployment experience. Depending upon their involvement, some personnel may have to pass a full background investigation (BI) and obtain the appropriate security clearance as required. Proof of U.S. citizenship is required to be permitted access to Government facilities. Changes to key personnel must be approved by the Government.

The Contractor shall submit a Subcontracting report that describes all the Subcontractors proposed, their planned activities and the Contractor's approach to manage, oversee and assure delivery quality.

Deliverables:

(4.1.1) Subcontracting Report

Project Management Planning

The Contractor shall provide a dedicated Project Manager who shall be responsible for all work performed under this contract. The Project Manager shall be a single point of contact for the Contracting Officer (CO) and the Contracting Officer's Technical Representative (COTR). The Project Manager shall be one of the senior level employees provided by the Contractor for this work effort. The Project Manager shall be available to the COTR via telephone between the hours of 0800 and 1700 EST, Monday through Friday, and shall respond to a request for discussion or resolution of technical problems within two (2) business days of notification.

The Contractor shall provide Project Management services in support of the Program and associated projects.

The Contractor shall develop, update, implement, manage, and maintain the Project Management Plan (PgMP) within thirty (30) days of award and shall update quarterly as needed. The PgMP shall be used to define processes, procedures, and tools required for the effective management of the Program. The PgMP shall be used throughout the duration of the contract as a management tool to assess progress and determine success in achieving Program requirements.

The Contractor shall develop a Contractor Information Technology (IT) Security Plan within 30 days of award to document the processes and procedures for processing sensitive Government information at a contractor facility or on contractor equipment. Security processes and

procedures should comply with (b) (7)(E) and the requirements listed in Section 6 of this SOW.

The Contractor shall develop a Quality Assurance Surveillance Plan (QASP) in coordination with the Government within forty five (45) days after award and update the plan quarterly as needed. The QASP shall describe how the Government will survey, observe, test, sample, evaluate and document the Contractor's performance in meeting the critical performance standards identified in the contract. In developing the QASP, the Contractor shall consider the criticality of the process and its output; how and how frequently performance should be monitored; and the cost to the Government to monitor each standard/acquisition quality level. Types of monitoring include: random sampling, 100% inspection, periodic inspection, and customer feedback (see FAR 46.401).

Deliverables

- (4.1.2a) Project Management Plan (PgMP)
- (4.1.2b) Contractor IT Security Plan
- (4.1.3c) Quality Assurance Surveillance Plan (QASP)

Systems Engineering

The Contractor shall provide a Senior Systems Engineer who shall be the primary technical interface for all work performed under this SOW.

The Contractor shall implement a system engineering management process to guide the development and management of a requirements-driven integrated wireless architecture through the entire SELC. This process shall be developed at the program level and shall govern the system implementation to ensure the technical and operational integration across the program. Each sub-system will progress through its own lifecycle framework and require its own system engineering activities and technical support that will align with a program-level Systems Engineering Management Plan (SEMP) within forty five (45) days after award and updated quarterly as needed. All associated test and evaluation activities (i.e., developmental testing, operational testing, and combined or integrated testing) will align with a program-level Test and Evaluation Master Plan (TEMP).

The Contractor shall develop, manage, and maintain a SEMP to provide a program-level framework to guide the implementation and integration of project-level system engineering activities and technical support. The SEMP shall define a life cycle balanced set of products and processes addressing the requirements analysis, design, implementation, integration, testing, and operation of LMR systems. (It should be noted that due to efforts of the CBP TACCOM office, the requirements analysis and designs may be in various stages of completion. In these cases, the SEMP should address how the Contractor will verify and validate the requirements and designs to ensure that when implemented, the Contractor can meet the network performance requirements.)

The Contractor shall develop, manage, a test program that is consistent and aligns with the Program-wide TEMP. The Contractor shall ensure that all test plans, procedures and reports for Sub-system testing, Unit Testing, and System Acceptance testing will be reviewed and approved by the Government.

The TEMP is the basic “top-level” planning document for Test and Evaluation (T&E) related activities for TACCOM. The TEMP describes the necessary Developmental Test and Evaluation (DT&E) and Operational Test and Evaluation (OT&E) that needs to be conducted to determine system technical performance, operational effectiveness / suitability, and limitations. For clarity, it should be noted that all OT&E shall be conducted under the direction and oversight of the independent Operational Test Agent (OTA) for TACCOM. The Contractor shall provide subject matter expertise, as needed, through participation in the T&E Working Integrated Project Team (WIPT)s and other forums, but the overarching responsibility for execution and reporting on OT&E is the exclusive responsibility of the OTA.

All deliverables and major milestones are subject to review and approval by the Government Project Manager and COTR. The Contractor shall ensure the following review milestones at a minimum are incorporated into the systems engineering process and project plans:

- Systems Requirements Review (SRR)
- Program/Project Requirements Review (PRR)
- Preliminary Design Review (PDR)
- Critical Design Review (CDR)
- Test Readiness Review (TRR)

Deliverables:

(4.1.3) Systems Engineering Management Plan (SEMP)

Project Management

The Contractor shall designate a Project Manager responsible for the development of the focus area. Project Management services should include government and industry best practices such as work breakdown structure (WBS) creation, cost/performance tracking and reporting, risk management planning, tracking and mitigation, configuration management of hardware, software and documentation that comprise the system baseline, and regular, frequent project status reporting. The Project Manager shall ensure all project management activities and deliverables adhere to the (b) (7)(E) standard unless specific prior permission to deviate from the standard is received in writing by the CO.

The Contractor shall in managing and reporting:

1. Identify and resolve risks, issues, and (internal and external) dependencies.
2. Track CLINs to separate project funding sources as requested
3. Provide detailed standard reports and ad hoc reports as requested by the Government.
The standard reports shall include the Integrated Master Schedule and Cost Performance Report

4. Provide Integrated Baseline Reviews as requested

Deliverables:

(4.1.4a) Project Manager Identified

(4.1.4b) WBS

Kick-off Meeting

The Contractor shall attend a Kick-Off Meeting within twenty (20) working days of award. The purpose of the Kick-Off Meeting, which will be chaired by the CO, is to discuss technical and contracting objectives and review the Contractor's project plan. The Kick-Off Meeting will be held at the Government's facility. All documentation that will be discussed shall be prepared by the Contractor and submitted at least one week prior to the kick-off meeting for government review and approval. Standards for design drawings and documentation will be mutually agreed during the kickoff for this SOW.

The Project Kickoff Meeting includes both the Government and Contractor key project participants. The specific date, time, and location of the meeting will be mutually agreed upon by the Government and the Contractor. The objectives of this meeting include:

- Introduction of all project participants
- Review the roles of the project participants
- Review of the overall project scope, requirements and deliverables
- Review the resource and scheduling requirements
- Review of the overall project schedule
- Review the proposed standards for design drawings
- Review methodologies for acceptance testing
- Review methodologies for coverage testing

Deliverables

(4.1.5) Program Kickoff Meeting

Status Meetings

Contractor progress against the project and implementation schedule and tasks shall be assessed in weekly program/project status meetings between the Contractor and the COTR. The Contractor shall support the weekly status meetings to be chaired by the Government Project Manager. The location and venue of these meetings will be identified and agreed upon during the kick-off meeting. Additionally the Contractor shall prepare and submit Monthly Status Reports to the COTR or designated representative. At a minimum, the report shall contain the following:

- Activity summary

- Major milestones
- Open action items
- Program risks and response to risks
- Modification progress to schedule performance
- Major activities planned for the succeeding month
- Earned Value Management information
- Status of baseline changes

Tasks that are late shall be listed on Monthly Status Reports with an explanation of why they are late and a discussion of remediation actions planned to alleviate the schedule delay. The monthly status reports shall be reviewed during the monthly meeting with the Contractor. Unforeseen issues that impact the critical path, risks, issues and completion date of the project shall be reported to the COTR via email within two business days of their discovery. Meeting minutes will be provided electronically to all attendees within 3 business days after the conclusion of each meeting for all phone conferences and meetings.

Deliverables:

- (4.1.6a) Weekly Status Meetings
- (4.1.6b) Monthly Status Meetings

Monthly Reports

The Contractor shall submit monthly status reports within five (5) days of the Monthly Status Meeting that summarize the Contractor's completed and planned activities as well as any anticipated project risks. Contractor format is acceptable for all deliverable items, unless otherwise specified. All deliverables will be provided in hard-copy as well as softcopy.

The monthly report will include:

- A management summary, indicating any major problems and any significant progress or events
- A narrative description of work performed during the reporting period and expected to be performed in the next reporting period, including discussion of any problems and recommendations for correction
- A summary of completed actions
- An action item list identifying the action item, person or persons responsible, target completion date, and status, along with explanatory notes
- Problems that require Contracting Officer or Program intervention;
- Identification by name and labor category of individuals being added to the task by the Contractor, along with an indication of dedication to the task (full time permanent, full time temporary, part time)
- In connection with any required non-local travel (beyond 100 miles of the assigned duty station of the involved personnel) in performance of the work outlined above, the Contractor will provide a written accounting of the number of trips by

destination/location, the number of personnel on each trip, the inclusive dates of the trips, and the significant results accomplished during the trip

Deliverables:

(4.1.7) Monthly status reports

American Reinvestment and Recovery Act (ARRA) Reporting

This project is being funded using ARRA funds and thus the contractor shall meet the ARRA reporting requirements outlined in FAR 52.204-11, American Recovery and Reinvestment Act—Reporting Requirements. The ARRA Quarterly Status Report shall be provided within five (5) days of the Monthly Status Meeting. The Contractor shall be compliant with all the terms and conditions consistent with ARRA requirements.

Deliverables:

(4.1.8) ARRA Quarterly Status Reports

Project Management Planning

The Contractor shall provide a Project Management Plan (PgMP) for each project. The project plan shall be submitted thirty (30) business days after contract award. The PMP shall define the following:

- Project Scope Management Plan
- Schedule Management Plan
- Cost Management Plan
- Quality Management Plan
- Process Improvement Plan
- Communications Management Plan
- Risk Management Plan
- Milestone List
- Schedule Baseline
- Cost Baseline
- Quality Baseline
- Risk Register

Following Government review and comment, the PgMP shall be revised and provided by the Contractor as a formal deliverable under the contract. The Contractor shall also maintain all information both hard-copy and softcopy developed for and associated with the design, development, integration, installation, and testing of the system and shall provide these data files to the Government. The Contractor shall also update the PgMP and project schedule baseline. The project schedule must define the dates for deliverables including long-lead items and associated schedule risk mitigation strategy.

Detailed project schedules shall be produced by the Contractor's Team with support from the Government to provide a timeline analysis for all tasks within the project. The final Master Project Schedule shall clarify all milestones and the critical path of the project. The Master Project Schedule shall be developed two (2) weeks after Kickoff meeting and updated weekly or as requested by the Government. The milestones shall be described with reference to days after award. The Government and the Contractor will mutually agree upon the final schedule.

Deliverables:

(4.1.9) Project Schedule

TASK 2: REQUIREMENTS DEFINITION (SELG STAGE 2)

The Government will specify the technical, performance and requirements including coverage, capacity, and location of legacy antenna sites. These requirements when approved and validated by the TACCOM PMO will be identified by focus area and provided to the Contractor. The Government has provided detailed Technical Specifications for the RGV as defined in Appendix A. A summary of requirements definition is provided below in Table 2.

Table 2: TACCOM Modernization Summary Requirements Definition

Requirements	Specifications
Recommended Frequency	<div style="font-size: 48px; color: red; font-weight: bold;">(b) (7)(E)</div>
Coverage Type	
Coverage Requirement	
Minimum DAQ Requirement	
Coverage reliability	
GPS for Situational Awareness	
Equipment Specifications	
Network Support	
LMR Radio Interfaces	
Tower Structure Specifications	
Communications Sites Guidelines	
Latency	
Security	

Focus Area Requirements Validation

In this Task, the Contractor shall review, validate the requirements, and demonstrate their understanding of RGV Focus Area. The Contractor shall collect, review and analyze all available Government data to develop detailed work plans and Work Break Down Structures (WBS), schedules, define resources and approach to completing the work.

Deliverable:

(4.2.1) System Requirements Review (SRR)

System Design

The Contractor shall revise and validate designs developed by the Government. The reference material provided by the Government contains the initial designs, detailed coverage requirements and point to point design along with any available site data. This material is available by CD and can be requested from the government per the General Instructions for the Preparation of Proposals accompanying this SOW. The Contractor shall review and update this design based on the requirements identified within this SOW (Table 2 and those identified in Appendix A, B, and C). It should be noted that the SOW takes precedence over any data provided within the reference material.

Deliverable:

(4.2.2) System Design

TASK 3: DESIGN (SELC STAGE 3)

System Design

The Contractor shall create a system design according to coverage requirements and site candidate packages developed in the Requirements Definition task (SELC Stage 2, section 4.2). The Contractor shall cover all aspects of the system analysis and design, including overall design to meet P25, narrowband RF channels, IP-based architecture, (b) (7)(E) security, (b) (7)(E) coverage, capacity, interoperability, availability requirements, individual RF site configuration, backhaul requirements, console/ dispatch station positions, subscriber unit (i.e., mobile, portable, and consolettes) configuration and programming (e.g., codeplugs), and frequency planning and management. The system design shall be backward compatible (in technology, feature sets, and maintenance features) with the existing capital investment infrastructure and subscriber equipment. The Government will, at the time of award, provide a list of available existing infrastructure. The Contractor shall have a Professional Engineer review and approve all Site engineering drawings including tower structural analysis. The Contractor shall document its approach and conformance to the Technical Specifications and Requirements identified in Section 0 and Appendix A.

The Contractor shall leverage existing sites and infrastructure to the maximum extent to reduce costs and implementation timelines. In cases where existing sites are leveraged, the Government Furnished Equipment (GFE) may include the towers, shelters, power systems and existing infrastructure. The coverage solution shall meet or exceed the (b) (7)(E) required coverage areas as directed by the Government. The Contractor shall provide coverage prediction models for each site and composite maps for both mobile and portable voice communications for each site. The Contractor shall demonstrate through the use of propagation plots and planning tools a minimum delivered audio quality (DAQ) (b) (7)(E) and (b) (7)(E) area coverage reliability. Coverage predictions shall use CBP's NTIA licensed mobile/ portable frequencies, and repeater Effective Radiated Power (ERP) and other details as applicable. For those sites where licensed detail is not provided, the Contractor shall clearly state the assumptions made to perform the analysis. Mobile coverage predictions shall use a roof-mounted antenna at (b) (7)(E) (b) (7)(E). Portable predictions shall be for hip-level receive and head-level transmit directly to/from the fixed-site repeater station.

If the Government supplies the design, as is the case in RGV, the Contractor shall validate the design along with design assumptions and provide recommendations to changes to design. The Government will review and approve Contractor recommendations and design during the Critical Design Review (CDR)—only Government approved changes shall be permitted to be implemented in the design. The Government requires the Contractor to verify and demonstrate that the radio coverage performance is achieved through the successful completion of the Test and Acceptance process.

Deliverables

- (4.3.1a) RF and Network System design drawings include backhaul system design
- (4.3.1b) RF site design drawings stamped by a certified Professional Engineer (PE)
- (4.3.1c) Bill of materials required for system and site development (after CDR)
- (4.3.1d) Codeplug development Approach

Design Review

During design reviews, system and component descriptions are elaborated, and interfaces between all system components are defined. Additional activities to be accomplished by the Contractor during the preliminary design effort shall include further development of the technical performance measures and system design specifications. The design effort should also include a discussion of certification and accreditation (C&A) impact of the proposed design to existing CBP enterprise systems. The contractor shall develop a plan to demonstrate that the proposed system does not contribute any negative impact to CBP enterprise networks or systems. The plan should address the approach to ensure that the proposed system will be granted an authority to operate (ATO).

The Contractor shall conduct a Preliminary Design Review (PDR) and CDR design for RGV. The Contractor shall provide the design to the Government for an internal review 10 days prior to the PDR and CDR. Any discrepancies will be presented to the Contractor within 10 days following the PDR and CDR. The Contractor shall resolve and correct any discrepancies within

20 days of notification and submit the corrections to the Government for approval. This phase is considered complete when the CDR meeting has been held and the design has been approved and signed off by the COTR.

If the system design incorporates any elements not already demonstrated to work in the CBP LMR environment, the Contractor shall provide a component test plan to prove that the equipment will operate as intended with existing infrastructure. The plan shall detail the locations, logistics, procedures, and evaluation criteria for the test. C&A impact and ability to achieve ATO is a critical part of the test plan. The Government must approve the test plan.

Deliverables:

- (4.3.2a) Preliminary Design Review (PDR)
- (4.3.2b) Critical Design Review (CDR)
- (4.3.2c) Component test plan (if required)

TASK 4: RF SITE DEVELOPMENT (SELC STAGE 4)

The Government will conduct site selection and environmental assessments and provide permits (zoning, and leasing) for the sites identified in the system design and CDR. Majority of the environmental assessments and permitting is projected to be completed within four (4) months of award; a few sites may take as much as eighteen months.

The Contractor shall develop detailed test plans that cover and verify the quality and performance of the system. All test plans developed by the contractor shall be fully consistent with the overarching guidance and T&E strategy identified in the TEMP. The Contractor shall develop the following test plans including: the Civil Works Master Test Plan, Unit Testing, Subsystem Testing, Integration and Test Plan, Functional and Performance Testing, Fixed Network Equipment (FNE) Test Plan, and System Acceptance Test Plan. These Test Plans are described in the paragraphs below and each Plan must be approved by the Government. The Contractor will conduct all these tests and develop identified Test Plans, Test Procedures, and Test Reports. The Contractor shall provide technical support for the Operational Test and Evaluation that will be performed by the Government to assess the suitability and effectiveness of the system.

The Civil Test Plan will validate the quality and performance of the Site Infrastructure including the tower, its foundation and structure (e.g., anchoring, foundation concrete pad), electrical properties (e.g., grounding). This test plan will validate that the shelters, power, telco and core infrastructure are designed and correctly implemented. The Civil Test Plan will include a Site acceptance checklist demonstrating that the Site meets the required performance and specifications required by the Government.

The Unit test Plan will test new equipment or features not demonstrated or tested before and may be conducted at the vendor facility.

The Subsystem test will demonstrate system parameters and capabilities, limited performance testing (i.e., testing that cannot be tested elsewhere due to specialized configuration and test suites) including compliance with operational parameters and will allow the Government to validate system capabilities prior to deployment. The Contractor shall conduct subsystem testing to test new configurations and equipment that has not been fielded before. It is not necessary to test equipment that has already been fielded and is operational or has already been tested by the Government.

Integration Test will test a mutually agreed number of FNE subsystems including LMR, station and dispatch positions, backhaul and other GFE and ensure that they will work together properly. During the Integration Test, the Contractor shall Stage the system and conduct RF testing of equipment in the field. This testing can be conducted either at the vendor facility or at the National Law Enforcement Communications Center (NLECC) in Orlando, FL.

Function and Performance testing will be conducted once the equipment has been fielded based on a mutually agreed upon schedule. This test will validate performance of the equipment including Coverage, reliability testing, DAQ tests, along with validating that the system meets the operational requirements identified.

System Acceptance Test Plan will consist of tests, analysis and reports that prove that the system meets the technical requirements as defined within this SOW.

Deliverables

(4.4) Unit Test Plan and Procedures

(4.4) Sub-system Test Plan

(4.4) Integration Test Plan and Procedures

(4.4) Functional and Performance Test Plan and Procedures

(4.4) System Test Plan and Procedures

(4.4) Fixed Network Equipment Test Plan and Procedures (e.g., Staging Plan)

(4.4) System Acceptance Plan

(4.4) Civil Test Plan

TASK 5: INTEGRATION AND TEST (SELC STAGE 5)

SYSTEM STAGING

The Contractor shall perform system staging at Contractor facilities. The Contractor shall build the system from approved design drawings, and stage the equipment as it will be installed at the final destination. The Contractor shall configure and program the system based on parameters provided by the Government.

System staging allows a complete system to be assembled, programmed, tested, and inspected before it is shipped to the field and includes the following processes:

- Procure equipment, materials and supplies according to the Contractor-provided, Government-approved BOM
- Perform system assembly as it will appear in the final location
- Perform Initial equipment programming and level setting
- Develop code plugs for mobile and portable subscriber units
- Integrate subscriber units (Government Furnished Equipment, GFE) and FNE
- Perform staging according to the staging test plan previously developed by the Contractor and approved by the Government. The Contractor shall provide staging output reports for Government review and approval
- Develop a system installation manual including equipment layout drawings, system interconnect documentation, and all programming information, for Government review and approval
- Develop user documentation and training materials (for users, operators and system maintenance/service personnel) for Government review and approval
- Develop a migration and cut-over plan for Government review and approval
- Perform custom-fabrication of cables and connectors based on equipment layout drawings
- Package and ship staged equipment/subsystems to the final installation location.

The Government reserves the right to visit the Contractor's staging facilities and work with the Contractor's staging and quality personnel to verify system upgrade configuration, operation, and functionality before in-plant acceptance testing begins.

Deliverables

(4.5.1) System Staging Plan and Results

Transition/Cut-Over Plan

The Contractor shall develop a Transition/Cut-Over Plan/ORR Test plan. This plan will show how the Contractor shall turn over the system to the Government including specifying specific criteria for the cut-over. This document will be provided to the Government for their approval.

Deliverables

(4.5.2) Transition/Migration Plan

Training Plan

The Contractor shall develop a training plan detailing how the Government and users will be trained. The Training Plan shall include both user, Operator and Maintenance (O&M) and “Train the Trainer” training.

Deliverables:

(4.5.3) Training Plan

TASK 6: IMPLEMENTATION (STAGE 6)

RF Site build-out

The Contractor shall build out the civil infrastructure and FNE networks in accordance with the system and site designs. This includes but is not limited to:

Civil Infrastructure

- a. Supply materials according to the Contractor-provided, Government-approved BOM
- b. Site preparation and construction (grading, soil analysis, foundations, fencing, trenching, etc.)
- c. Tower development/construction to (b) (7)(E) standards including antennas, cables, ice bridges and (b) (7)(E) Grounding
- d. Tower, enclosures/shelters installation (including foundations and pads)
- e. Electrical/utilities installation
- f. Circuits provisioning
- g. Power installation to include (b) (7)(E)
- h. Heating/Ventilation/Air Conditioning (HVAC) installation for enclosures/shelters

FNE and backhaul

- a. Procure equipment and materials needed for backhaul implementation (i.e., equipment not supplied during staging), according to the Contractor-provided, Government-approved design and BOM.
- b. Ship backhaul equipment to a Contractor-provided field warehouse
- c. Review IP scheme with Government COTR's designated technical staff.
- d. Configure backhaul radios (pairs) and test radio pairs, where applicable.
- e. Hardware installation
- f. Install the networking equipment (Government provided equipment-gateways and IP Switch).
- g. Terminate cabling properly (connectors, lightning arrestors and ground).
- h. Install the PIDUs and GFE routers.
- i. Ship FNE racks from staging to field as sites are ready for them
- j. Ship dispatch operator positions to appropriate dispatch locations or to an interim stop in a field warehouse
- k. Optimize sites and system:
 - i. Make final adjustments to the LMR system, as required
 - ii. Set required audio levels and ensure routers are configured correctly
 - iii. Test system readiness prior to the acceptance test including antenna and network optimization
 - iv. Take steps related to optimization at sites to minimize effect of frequency reuse

- v. Communicate with Government personnel in the Focus Area regarding technical issues, as required
- vi. Red-line system manual “as-built” documentation, as required
- vii. Prepare final code plug for all subscriber units and a plan to reprogram units prior to testing stages

Deliverables

- (4.6.1a) Installation Checklist
- (4.6.1b) Site civil infrastructure build-out completed according to site design and specification (i.e., completed focus area sites)
- (4.6.1c) FNE installed and optimized
- (4.6.1d) Final codeplug developed and programmed in 4,200 mobile and portable subscribers (final subscriber count will be coordinated with between the Government and Contractor)
- (4.6.1e) Test Readiness Review
- (4.6.1f) Red-line system Manual
- (4.6.1g) As Built Documentation

Acceptance Readiness Testing and System Burn-in

System acceptance testing must comply with (b) (7)(E) concerning system testing and is contingent upon a two-stage acceptance test strategy. First, the system shall be tested with a limited group of users to ensure all functions operate as required. An independent OTA will confirm results. Second, the system shall go through a 30-day burn-in period with all users to ensure it operates as intended at full capacity. Both tests must be included in the overall test plan.

Deliverable

- (4.6.2) Acceptance testing readiness and system burn-in completed

Acceptance Testing

The Acceptance Test Plan (ATP) details the procedures to be run to confirm that the solution provided by the Contractor is complete and meets the acceptance test criteria. The Contractor shall conduct the system testing based on the Government approved test plan developed in Section 4.4. The Contractor shall support the Acceptance Test and Evaluation activities conducted subsequent to Functional and Performance testing.

Resolutions of any deficiencies found during testing will be mutually agreed upon between the Contractor and the Government. Based on the testing and analysis, the Government may approve the test results and declare the test complete even though there might be some outstanding deficiencies. The Contractor shall remain responsible for the resolution of any documented deficiencies.

Upon successful completion of the field acceptance test, the Government's COTR-designated Focus Area representative and the Contractor will sign a System Acceptance Certificate.

Deliverables:

(4.6.3) System Acceptance testing and Report completed

RF Coverage Test

The Contractor shall conduct the RF Coverage Test Plan (CTP) verifying the coverage and performance of the system. Coverage testing demonstrates that the implemented infrastructure coverage prediction is consistent with the system design.

One repeater at each transmit site shall be tested for correlation with predicted coverage contours. Updated coverage maps, based on installed sites at the time of testing will determine the areas that shall be tested for coverage. It is anticipated that each area of responsibility (AOR) will require three days of drive testing.

The contractor shall generate reports detailing the test results for each transmit site. These reports shall include signed documentation (by both The Contractor and the COTR-designated Focus Area representative) indicating the test was performed in accordance with the CTP. The results of the test will indicate the acceptance or non-acceptance of the coverage portion of the system. The CTP results are not associated with the Acceptance Test Plan. They are provided to verify proper site operation and to identify requirements for coverage improvement in future phases.

Deliverables:

(4.6.4) RF Coverage Test Completed and Report Complete

User and O&M Training

The Contractor shall present a robust and in-depth training plan defined by CBP requirements and input from the Contractor's training organization.

Training curricula and the execution of end-user training shall include CBP end users, O&M personnel and dispatch console operators. Training activities include, but are not limited to, the following:

- Providing training materials
- Providing training materials relating to system functionality, including (b) (7)(E) vote scan, and other critical system features, as well as console functionality
- Facilitating "Train the Trainer" sessions for designated OIT personnel
- Facilitating training sessions for dispatch operators.

To the extent required, the Contractor shall also support OIT Field Training representatives in the development of user and O&M training plans and schedules in accordance with project plans,

including subscriber rollout, equipment installation, acceptance testing, and system cutover plans.

Deliverables:

(4.6.5a) User Training Materials

(4.6.5b) User Training

(4.6.5c) System documentation provided

Information Security Certification and Accreditation

The Contractor provided system must be certified and accredited prior to the system becoming operational. Certification and Accreditation (C&A) of the system will be directed by the Certification Authority (CA) designated by the CBP Designated Accreditation Authority (DAA), and in accordance with (b) (7)(E) C&A activities will center on development of an accreditation package and culminate with the DAA granting an Authority to Operate (ATO). The Contractor shall provide direct support to the CA as ATO is sought for the system. This support shall include the following:

1. All information assurance (IA) activities necessary to meet CBP IA requirements and comply with CBP security C&A processes as part of the LMR system implementation
2. Provide support for the initial "type accreditation" to be used as a basis for C&A on each subsystem/system.
3. Provide system information and security assistance to the CA and certification agents during certification recommendation and accreditation decisions.
4. Prepare C&A packages in support of the CA recommendation to the DAA for ATO. If an ATO is not immediately granted because of outstanding security requirements when the system is otherwise ready for customer acceptance, the acceptance will be contingent upon a written interim authority to operate (IATO) from the DAA supported by efforts to address outstanding requirements within the allotted IATO period.

Deliverables:

(4.6.6) C&A packages delivered/Authority to Operate obtained

Site Development Project Finalization

The Project Finalization task ensures that all criteria for Final Project Acceptance have been met. The Contractor shall provide the Government with at least two (2) electronic copies and two (2) hard copies of the design and build documentation. At a minimum this documentation shall include:

Site Construction and Maintenance Manual to include:

- a. Tower diagram(s)
- b. Tower "as-built" and "as-installed" documentation

- c. Antenna loading documentation including current load and design limits
- d. Wind loading documentation including current load and design limits
- e. Foundation loading documentation including current load and design limits
- f. Equipment installation schematic diagram(s) to include “as-built” as “as-installed” documentation
- g. Permits and compliance statements associated with applicable standards, ordinances and statutes
- h. Construction QA check list
- i. PE sign off / certification(s)

Digital Photographs

The contractor shall provide the following digital photographs as part of their site close out package (to be included as an appendix to the Construction and Maintenance Manual).

- a. Pre-construction photos
- b. Digital pictures of the utility site markings
- c. Photos of conduit trenches (uncovered)
- d. Photos of site preparation
- e. Photos of foundation installation
- f. If contractor installs a new External Ground Ring, the contractor must take an appropriate number of digital photos of the new trench, ground ring and leads prior to backfilling
- g. Photos of antenna, attachments and lines
- h. Photos of completed site installation (including tower, foundation, structures, and equipment)

System Documentation

The contractor shall also provide the system documentation, to include:

- a. System component user manuals
- b. System component service manuals
- c. System manual to include:
 - i. System topology diagram
 - ii. System block diagram(s)
 - iii. System “as-built” system documentation
 - iv. System programming documentation including IP information
 - v. RF coverage predictions, where applicable
 - vi. System architecture description
 - vii. Floor plans
 - viii. Equipment shelter/tower diagrams
- d. System acceptance test plan and report, where applicable
- e. Backhaul System training materials

Site Closeout Package

The contractor shall also provide the following documents as part of their site close out package (to be included as an appendix to the Construction and Maintenance Manual):

- a. Electrical Permit, approved by inspector(s) from appropriate Federal, state and/or local jurisdiction(s), if applicable.
- b. Signed-off Building Permit, approved by inspector(s) from appropriate Federal, state and/or local jurisdiction(s), if applicable.
- c. Test report, documenting results of sweep tests, grounding tests, equipment tests, and operational tests.

All electronic documentation provided by the Contractor shall be in a form that allows for direct upload into the Government's electronic systems for configuration management and archival. The Government will provide specific electronic formats at the kickoff meeting. It is anticipated that this will be a Government provided with a password protected SharePoint site that will host all electronic documentation.

This task will be deemed complete when the Government and the Contractor sign the Final Project Acceptance portion of the System Acceptance Certificate.

Deliverables:

- (4.6.7a) Site Construction and Maintenance Manual
- (4.6.7b) Digital Photographs
- (4.6.7c) System Documentation
- (4.6.7d) Site Closeout package

Remove Legacy Equipment

Upon successful system migration, burn in, user acceptance and receipt of ATO, the Contractor shall decommission legacy system equipment, remove antennas and line from towers, remove legacy LMR chassis from shelters, clean and organize shelters into the proposed final configuration and dispose of in accordance with Government instruction. This requires a separate trip to each site where removal is required. Much of the equipment is of a capital nature that is tracked by the government property officer. Close coordination with the property officer shall be required to properly remove the assets from the CBP inventory. Some equipment shall be destroyed. Some shall be harvested for operational spare equipment in the local focus area or for other identified focus areas. The property officer and COTR will coordinate with the contractor regarding disposition.

EQUIPMENT AND MATERIALS PROVISIONING

This section presents Government's technical specification from which the contractor shall design and subsequently supply, install, test, commission and migrate to a fully integrated and operational TACCOM system. Additionally, the technical specifications are provided in more details in Appendices A and B.

This infrastructure shall be designed/sized to accommodate Government's initial requirements and future growth. The Contractor shall obtain Government approval on proposed equipment/solution. Details with respect to quantities, future growth requirements and locations are provided at various points throughout this SOW.

All proposed equipment and structures shall be new and of current fabrication while providing the best value to the Government. If space is available to meet CBP requirements in existing structure (in sound conditions) at sites, no replacement structure should be quoted.

All structural steel members, accessories and associated hardware for exterior structures including towers, cable bridges, antenna mounts and perimeter fence components shall be manufactured of hot-dipped galvanized steel.

The Government requires modernized, flexible, spectrally efficient, scalable state-of-the-art, P25 compliant digital narrowband LMR systems serving all designated users. The systems shall also support analog wideband and narrowband operations.

At a minimum the system shall provide each user agency the access, call carrying capacity and independent and private LMR communication capabilities currently available on the legacy system at the repeater sites specified in Appendix C. In most cases, it is anticipated that additional capacity shall be added to the focus area consistent with user requirements.

Newly proposed infrastructure must be compatible with the GFE subscriber units (Motorola XTS5000 handheld portable radios with external GPS capability, and XTL5000 Mobile radios) and able to send encryption key updates over the air (OTAR) per the P25 standards. The existing infrastructure that supports (b) (7)(E) is Motorola's Key Management Facility (KMF). Any newly provided infrastructure shall be compatible with the CBP GFE KMF. OTAP is also required.

The primary users of the CBP TACCOM network are the Office of Border Patrol (OBP), the Office of Field Operations (OFO) and the Office of Air and Marine (OAM). The infrastructure design shall also incorporate shared sites, antenna networks, and spectrum to accommodate the DHS Immigration and Customs Enforcement (ICE) users in the focus area. Each focus area has defined partners in the public safety community with which interoperable communications shall be provided by the contractor design. Additionally, a gateway may be used to patch IP-based P25 system to legacy public safety and other partners for initiating interoperability.

Users at fixed locations such as ports of entry or stations will utilize a local base station to access the newly designed repeater network to be furnished and implemented by the Contractor. Each fixed location will require a new base station(s) (e.g., one or more consolettes and desksets by Motorola are currently in use) to be provided and programmed to operate on the new system. The following tables provide features, functionality, and capabilities for the proposed equipment.

Table 3: General System Capabilities

Equipment Capability / Feature	Description
User Traffic Information	The Contractor shall determine the number of repeaters or wide-area networks required to satisfy the capacity requirements
Interoperability	The systems shall have an intercom capability, which allows patching among different dispatch locations (e.g., NLECC, Air Marine Operations Center (AMOC) and multiple locations in the focus area).
Voted Audio Operation	This audio selection and routing capability shall be provided in the new system. An interoperability gateway may be required at the AMOC. Due to space limitation, a small footprint for the gateway is preferred.
Service Quality	<p>Ensure a high level of system reliability and availability.</p> <p>Provide a design approach that minimizes the impact of system failures.</p> <p>Ensure that when wide area nets fail due to voting or connectivity failures, that repeaters default to in-cabinet repeat mode to facilitate subscriber to subscriber communications.</p> <p>Provide for the centralized monitoring, management, administration, and security of the system and its users.</p>
Dispatch and Agency Communications	The modernized network shall provide seamless CBP user agency and inter-agency push-to-talk communications and be easily re-configured to accommodate changing organizational structures and roles.
Dispatch Consoles	Each operator position shall consist of ergonomic dispatch position command and control work stations designed to accommodate the dispatch personnel over an entire shift in a safe and functional operational environment. Site survey and requirements analysis shall determine final configuration
Console Electronics	The dispatch operator electronics shall provide a boom microphone and push-to-talk (PTT) switch as well as at least one select and one unselect speaker for P25 audio monitoring
Voice Recording	Voice recording capability shall be provided for each

Equipment Capability / Feature	Description
	dispatch operator position to capture P25 voice and telephone voice at the operator position.
Interfaces	The preferred interface between each dispatch operator position and the remote radio sites for P25 voice and data is an (b) (7)(E)
Fixed Station Radios: Electrical & Mechanical	To the greatest extent, all equipment assemblies and sub-assemblies shall be shielded to minimize electromagnetic interference that may be caused to/by electrical equipment co-located and/or adjacent to this equipment.
Interfaces: Baseband	The base stations/repeaters shall be equipped to be controlled by an (b) (7)(E) interconnection to local IP backhaul (e.g., terrestrial RF).
Interfaces: Alarm & Control	The station shall be equipped with a (b) (7)(E) network management interface (b) (7)(E) is a preference] and/or a (b) (7)(E) that can be interfaced to a remote terminal unit (RTU) of a network management system.
Repeaters – Fixed: Power System	All equipment shall operate from the contractor specified nominal (b) (7)(E)
Repeaters – Fixed: Equipment Housing	Station equipment shall be housed in a chassis suitable for mounting on a standard (b) (7)(E)
Base/Control Stations: Power System	All equipment shall operate from the contractor specified nominal (b) (7)(E)
Base/Control Stations: Equipment Housing	Station equipment shall be housed in a chassis suitable for mounting on a standard (b) (7)(E). Each rack shall be equipped with a ground system in accordance with CBP's standards.
Receiver Audio Voting	<p>Each designated voted frequency shall be supported by a received audio voting capability integral to each repeater that is included in the network. The voting capability shall:</p> <ul style="list-style-type: none"> • Be of an integrated and distributed design • Be of a modular and field-expandable design • Be capable of automatically voting analog and digital receive audio • Be capable of being routed to dispatch operator positions within the local focus area, to the

Equipment Capability / Feature	Description
	NLECC and to AMOC as well as to the repeater(s) associated with the RF net (single transmitter or multicast)

Table 4: LMR Antenna Specifications

Equipment Capability / Features	Description
Antennas General	<div style="font-size: 4em; color: red; font-weight: bold;">(b) (7) (E)</div>
Gain Omni directional-Whip Antenna	
Gain Directional Antenna	
Unity Gain Unidirectional-Whip Antenna	
Antenna Feedlines & Accessories: Connectors	
Main Cable	
Ground Straps	
Lightning Protection	
Mounting Hardware	

Table 5: General Repeater Specifications and Stand-Alone Receivers

Parameter	Requirement
Type	<div style="font-size: 4em; color: red; font-weight: bold;">(b) (7) (E)</div>
Frequency Band	
RF I/O Impedance	
Temperature Range	

Conventional Mode(s)	(b) (7)(E)
Transmission Mode(s)	

Table 6: Transmitter Specifications

Parameter	Requirement
RF Power Output	(b) (7)(E)
Duty Cycle	

Table 7: General Base Station Specification

Parameter	Requirement
Type	(b) (7)(E)
Channel/Frequency Capability	
Frequency Band	
RF I/O Impedance	
Temperature Range	
Conventional Mode(s)	
Transmission Mode(s)	

Table 8: Base Station Transmitter Specification

Parameter	Requirement
RF Power Output	(b) (7)(E)
Duty Cycle	

Table 9: Receiver Threshold Specification

Parameter	Requirement
Receiver Threshold	(b) (7)(E)

Provisioning

The Contractor shall supply equipment and materials necessary to perform the site development, backhaul implementation and system implementation tasks described in this SOW. Provisioning activities shall be performed in accordance with government standards and best practices established by the Government during the kickoff meeting, and will focus on meeting the goals of the project while obtaining the best value for the Government.

Provisioning involves supplying, receiving, inventorying, warehousing and transporting LMR equipment to support the Contractor provided, Government approved bills of materials (BOMs) for the system and associated sites. Equipment and materials includes but is not limited to: all electronic and other supplies and materials for site development, RF site infrastructure, backhaul infrastructure (wire line and wireless), and console equipment.

The Contractor shall develop BOMs based on the equipment and material needs identified in the design activities performed in the various tasks within this SOW, and will include all necessary specifications. The Contractor shall submit the BOMs for approval by the COTR in accordance with (IAW) the design review milestones associated with the activities in each task. The Contractor shall only supply equipment approved in the BOM.

The Contractor shall provide regional warehouse facilities and warehouse management services for RGV. Warehouse facilities and warehouse management services include, but are not limited to: secure storage facilities that can accommodate the equipment and materials associated with the transport of equipment and materials from the warehouse facilities to designated staging and/or construction locations and inventory/property management of equipment and materials throughout the warehouse supply chain [defined from point of origin (manufacturer/supplier/vendor) through to point of distribution]. The Contractor shall use inventory management software to track and maintain inventory of equipment procured at a part number and serial number level. Contractor shall utilize ISO-9001 or equivalent approved process to assure quality of inventory system.

Contractor provided warehouse facilities shall meet the CBP physical security standards.

Deliverables:

(4.7.1) BOM

Interconnect System

System Design

The purpose of the backhaul interconnect system is to provide an IP digital interconnection between VHF base/repeater locations and centralized dispatch locations throughout the CBP to facilitate field communications and to enable the dispatch and management of tactical communications including inter dispatch center communications. The contractor shall design the IP plan approach for interconnecting the dispatch locations to the radio sites.

The interconnect system shall consist of a varying capacity microwave radio backbone together with terrestrial landline circuits interconnecting designated base/repeater locations to the dispatch locations. The interconnect system will serve the interconnection needs of CBP's VHF TACCOM system, its current and future CBP partners and CBP's growing telecommunications requirements and must not negatively impact CBP's enterprise architecture security certification and accreditation.

Contractor selection and design of the interconnect component of the TACCOM system shall include consideration to longevity and durability, ease of use, frequency and cost of maintenance, appropriateness for use by CBP's user agencies, and, standardization. Certain Focus Areas have some hops of (b) (7)(E) available to integrate into the overall backhaul interconnect design. The requirement is to use only spectrum licensed to the Federal Government such as portions of the (b) (7)(E). CBP has a preference for the (b) (7)(E) band with the equipment type that operates with non line of sight, near line of sight and line of sight and ODU equipment that mounts to the tower with (b) (7)(E) diameter dishes or greater and Ethernet cable between the ODU on the tower and the equipment shelter.

System Design Considerations

Interconnect System Availability

The system's availability shall meet the following criteria:

1. The worst-route, one-way, end-to-end (from multiplex/router input to multiplex/router output, inclusive) availability shall not be less than 99.999% per year.
2. End-to-end, worst-route equipment availability: 99.995%
3. Bit-error-rate (BER): 10^{-6} or better.

Path Engineering

Each interconnection path, except as noted, shall be designed using the following criteria:

1. Path Availability: 99.999%, minimum for a BER of 10^{-6} or better.
2. Minimum of 0.6 Fresnel zone clearance all along the path for $K = 1$ earth diameter.

3. Trees with heights of 75 feet above ground all along the path.
4. Smallest possible dish-antenna size as specified. Paths that yield a space diversity antenna configuration are not preferred.
5. Minimize antenna heights.

Contractors shall be responsible for path design and field survey confirmation.

CBP Wide Area Network (WAN) Legacy System Interface

The TACCOM system's interconnect network shall interface to CBP's WAN, as a resource for supplying an alternate path for TACCOM radio traffic should a section of the contractor-supplied system's interconnect network fail or become unavailable, and where alternate interconnect paths within the TACCOM system are also unavailable (e.g. loop switch, monitored hot-standby radios, etc.). Interconnection between the TACCOM interconnect network and CBP's legacy broadband wide area network (WAN) shall vary by focus area but the WAN locations are most likely to be CBP operational facilities such as stations or Ports of Entry.

Radio Terminals – Interconnect

Electrical & Mechanical Design

The equipment shall be state-of-the-art and microprocessor based and, to the greatest extent, shall use a modular design approach. The physical and electrical architecture of the unit shall be such that addition of control circuitry and/or functions at future dates shall not require addition and/or replacement of circuit card shelves and/or chassis assemblies or modules.

All operating parameters shall be stored in electrically alterable non-volatile memory technology and shall be field reprogrammable via PC based programmers. Power losses, restoration, surges, sags and/or brownouts shall not alter the unit's operating parameters. Other than total power loss or lethal surges, the unit shall remain fully operational within the specifications of its design while experiencing any of these occurrences.

The Contractor shall shield all equipment assemblies and sub-assemblies to minimize electromagnetic interference that may be caused to/by electrical equipment co-located and/or adjacent to this equipment. Levels of shielding shall be mutually agreed upon between the Contractor and Government.

Power System

All equipment shall operate from an external power source supplying a nominal (b) (7)(E), contractor to specify. Most sites will have (b) (7)(E), single phase as well to keep batteries charged.

Equipment Housing

Radio equipment shall be housed in a chassis suitable for mounting on a standard (b) (7)(E). The contractor shall furnish the necessary number of open equipment racks for supporting the equipment furnished. The number of racks at each antenna site shall be kept to a minimum and the racks shall not exceed a height of (b) (7)(E). Each rack shall be equipped with a ground system in accordance with CBP's standards. Alternatively, some equipment is designed to mount as an outdoor unit (ODU) on the tower near the dish antenna to minimize line loss and connect to the shelter via (b) (7)(E).

Monitored Hot Standby (MHSB) Configuration

Each MHSB specified station shall be equipped with an automatic switchover control panel. The control panel shall be equipped to provide at a minimum the following features:

1. Auto-switchover to hot-standby transceiver upon main transceiver failure.
2. Alarm notification upon transceiver switchover. Alarm shall be by (b) (7)(E) output.
3. Local auto-switchover enable/disable.
4. Local manual-switchover enable/disable.
5. Local visual indicator of switchover condition.
6. Mesh Network or Loop Redundancy Option

In lieu of MHSB the contractor may prefer to achieve network redundancy via a loop or mesh design rather than redundant site equipment. Latency must be kept to 100 msec maximum with either approach and the capacity of the backbone must be sized to support the rerouted traffic in the event of a site or path outage. Contractor shall present and obtain approval for the network design at CDR. The Contractor shall only supply equipment that has been approved at CDR and approved Bill of Materials.

Alarm & Control

The station equipment shall be equipped with an (b) (7)(E) that can interface to a RTU, for interconnection to a network management system. The network management system shall be capable of being monitored in the focus area and the NLECC.

Service Channel

A service (Orderwire) channel (SC) shall be provided on all paths. At a minimum, it shall include one (1) voice and one (1) data circuit. The channel shall operate independently of the core baseband links. Service personnel shall be able to talk to each other, between any two sites in the entire microwave network over this channel. All user interfaces to the SC shall be provided. SC handsets shall be equipped with a coiled cord stretchable to at least (b) (7)(E).

Specifications



Circuit Interfaces

Equipment

Circuit interfacing equipment shall be furnished, installed and commissioned, as required, for the following:

1. Translation of baseband between high-order and low-order spans.
2. Translation of baseband between radio terminals.
3. Drop & insert of baseband spans.
4. Drop & insert of (b) (7)(E).

Equipment shall be equipped with all related interface cards, cabling, cross-connect terminations, and related accessories. Equipment shall be suitable for mounting on (b) (7)(E). Active equipment shall operate from an external power source supplying a nominal (b) (7)(E), contractor to specify. Locations with (b) (7)(E) will be indicated on a case by case basis.

Active equipment shall be equipped with an (b) (7)(E) that can be interfaced to a RTU, for interconnection to a network management system. Active equipment shall be capable of being managed by the network management system. A local visual indicator shall indicate an alarm condition.

Site Drop & Insert Requirements

Contractor shall design and provide drop and insert capabilities at each site to meet the needs of their overall system design and any other requirements specified in this SOW. Drop and insert arrangements shall be designed in a manner that allows efficient maintenance operations and

timely and cost effective expansion to accommodate TACCOM growth and other CBP requirements.

The CBP prefers that contractors will provide either (b) (7)(E) drop and insert capabilities. Interface to the Base/Repeater equipment shall be (b) (7)(E) connectors and likely a router. Dual Routers are preferred with configurations that support automatic rerouting in the event of a site router failure.

Jackfields & Interconnect Panels

All circuit interfaces shall be wired to a (b) (7)(E) as appropriate, providing front-panel connector access.

Network Management System

A network management system (NMS) comprised of hardware and software is currently in use at CBP's NLECC. The NMS enables CBP's system administrators to monitor, control, and diagnose the managed devices furnished by the contractor. The GFE product is the Solarwinds' Orion Network Performance Monitor. CBP prefers (b) (7)(E). The system architecture shall be based on a server-client type network environment. Alternatively, some focus areas may have newly installed NMS hardware to support the existing backhaul network in the focus area. In this instance, every attempt shall be made to interface to the GFE NMS at the NLECC.

Each site shall support at least 32 control and alarm functions. It shall be equipped to support at a minimum (b) (7)(E) at each site or the number provided plus a (b) (7)(E) for growth, whichever is greater.

Microwave Antenna Systems

The antenna systems at each site shall be specified by the contractor as required to meet the system performance requirements stated in this specification and the regulatory requirements of the NTIA.

It is CBP's objective to use dish-antennas with the smallest possible diameter equipped with radomes, to meet the stated path engineering requirements. Space diversity dish-antenna configurations are not preferred. The contractor shall furnish all antennas, side arms, pipe mounts, stabilizing bars, radomes, feedlines and related accessories, and mounting hardware necessary for a complete and fully functional installation.

Enterprise Architecture Compliance

All solutions and equipment shall meet DHS Enterprise Architecture policies, standards, and procedures as it relates to this SOW. Specifically, the Contractor shall comply with the following Homeland Security Enterprise Architecture (HLS EA) requirements:

1. All developed solutions and requirements shall be compliant with the HLS EA.
2. All IT hardware or software shall be compliant with the HLS EA Technology Reference Model (TRM) Standards and Products Profile.
3. All data assets, information exchanges and data standards, whether adopted or developed, shall be submitted to the DHS Enterprise Data Management Office (EDMO) for review and insertion into the DHS Data Reference Model.
4. The encryption functions for all equipment shall be (b) (7)(E) compliant
5. Network hardware provided under the scope of this Statement of Work shall be IPv6 compatible without modification, upgrade, or replacement

The Contractor shall conform to the federal enterprise architecture (FEA) model and the DHS and CBP versions of the FEA model as described in their respective EAs. Models will be submitted using Business Process Modeling Notation (BPMN 1.1, BPMN 2.0 when available) and the CBP Architectural Modeling Standards for all models. Universal Modeling Language (UML2) may be used for infrastructure only. Data semantics shall be in conformance with the National Information Exchange Model (NIEM). Development solutions will also ensure compliance with the current version of the DHS and CBP target architectures.

Where possible, the Contractor shall use DHS/CBP approved products, standards, services, and profiles as reflected by the hardware software, application, and infrastructure components of the DHS/CBP TRM/standards profile. If new hardware, software and infrastructure components are required to develop, test, or implement the program, these products will be coordinated through the DHS and CBP formal technology insertion process which includes a trade study with no less than four alternatives, one of which shall reflect the status quo and one shall reflect multi-agency collaboration. The DHS/CBP TRM/standards profile will be updated as technology insertions are accomplished.

All data assets, information exchanges and data standards, whether adopted or developed, shall be submitted to the DHS EDMO for review and insertion into the DHS Data Reference Model. Submittal shall be through the CBP Data Engineering Branch and CBP EA.

The Contractor shall record a Government Point of Contact, as identified by the COTR, with all equipment, material and services, such that the Government is the owner of record for present and future warranty; help desk and maintenance agreement actions.

GENERAL DESIGN AND INSTALLATION REQUIREMENTS

The following general design and installation requirements must be followed:

1. Prior to any digging, the Contractor shall complete buried utility location, either through use of the local utility locator services, if available, or through whatever means necessary to ensure that there is no disruption of existing buried facilities.
2. Where applicable, the Contractor shall place Underground Utility indicator tape in conduit trench and/or fuel line trench at an 8 inch depth below ground level.

3. The Contractor shall be responsible to correct any and all damages caused by Contractor's employees, subcontractors, and/or representatives and agents while performing this contract.
4. All site work to be performed shall be IAW manufacturer's installation specifications, technical manuals, and with the (b) (7)(E) standards and guidelines for communications sites.
5. The Contractor shall provide transportation for all designated equipment/materials to all sites and to transport unused equipment/materials to their original locations. The Contractor shall also be responsible for packaging, loading and, off-loading all equipment/materials. The Contractor shall be responsible for cleanup and removal of all debris resulting from work being performed on a daily basis. All trash shall be removed from the job site as required to maintain a clean work environment at all times. The Contractor shall keep the work area neat, orderly and free from accumulation of waste materials. Upon completion of work at each tower site, the contractor shall remove all tools, equipment, obstructions, and debris.
6. A COTR-designated, on-site Government point-of-contact must inspect the specific location of the planned construction site to determine suitability with respect to the overall site function. The Contractor shall receive construction location approval from the Government prior to beginning construction.
7. The Contractor shall use appropriate hardware, sealer, and covers to facilitate installation in accordance with manufacturer's specifications.
8. Throughout the contract period, the Government reserves the right to perform random inspections and/or to contract with other organizations performing such services to ensure the Government's interest is protected.
9. Where applicable, the Contractor shall coordinate all work with designated Government representatives in order to minimize interference with Government operations.
10. The Contractor shall level and compact the ground surface, in accordance with (b) (7)(E) to ensure that the area is sufficient for supporting the tower and equipment. Geo-tech stabilizing cloth shall be installed on leveled ground. New gravel shall be installed over the stabilizing cloth. The gravel shall be leveled and compacted.
11. The Contractor shall install all equipment and materials in accordance with manufacturers' specification and shall conform to (b) (7)(E). All installations shall follow applicable federal, state or local jurisdictional codes whether incidental or superseding the standards specified in (b) (7)(E) while developing or installing equipment at the site.
12. The Contractor shall follow Federal, state and/or local building and electrical codes, where applicable, and shall secure all necessary permits and approvals.

DELIVERABLES

All materials and information developed or produced under this SOW, including but not limited to design drawings, documents, presentations, hardware, software and configurations, are the property of the Government.

The required deliverables for this project are shown in Table 10. The Contractor shall provide the deliverables in both hard copy and soft copy to the COTR and the CO using standards Microsoft suite (i.e., Word, Excel, Visio, Project) unless annotated below in Table 10. Signed documents such as leases will be provided as Adobe Acrobat (PDF) format.

Table 10: CBP P25 TACCOM Systems Modernization Project Required Deliverables

Deliverable	Referenc ed SOW Section	Frequen cy	Due Date(s)
Subcontracting Report.	0	One time only, updated as required	30 days after award
Contractor Information Technology Security Plan	Error! Referenc e source not found.	One time only, updated as required	Initial: 30 days after award Update: 15 days after Government review
Project Management Plan (PgMP)	Error! Referenc e source not found.	30 days after award/ Quarterl y as needed	Initial: 30 days after award Update at a minimum quarterly
Quality Assurance Surveillance Plan (QASP)	4.1.2	45 days after award Quarterl y as needed	Initial: 45 days after award Update: 15 days after Government review
Systems Engineering Management Plan (SEMP)	0	45 days after award Quarterl y as needed	Initial: 45 days after award Update at a minimum quarterly

Deliverable	Referenc ed SOW Section	Frequen cy	Due Date(s)
Project Manager Identified	0	One time only, updated as required	Proposal/Kick-off
Work Breakdown Structure (WBS)	0	One time only, updated as required	IAW project Schedule
Kick-off Meeting	0	One time only, updated as required	20 days after contract award
IT Security Plan	9.6	One time only, updated as required	30 days after contract award
Weekly Status Meetings	0	Weekly	Initial meeting begins after the first week after the project kick-off
Monthly Status Meetings	0	Monthly	Every four weeks- may be combined with the one weekly (every fourth weekly can be a monthly)
Monthly Status Reports	0	Monthly	Provided within five days of the monthly meeting
American Reinvestment and Recovery Act (ARRA) reports	0	Quarterly	Provided within ten days of end of each Quarter

Deliverable	Referenc ed SOW Section	Frequen cy	Due Date(s)
Master Project Schedule: To be completed after the Project Kickoff meeting and delivered in electronic and paper form, using Microsoft Project format. (Schedule should track progress)	0	Monthly	Initial: 2 weeks after Kickoff. Update: 7 days after Government review. Updates weekly and provided as requested – formally published with the Monthly reports
Stage 2 Deliverables			
System Requirements Review	0	N/A	IAW project schedule
System Design	4.2.2	N/A	IAW project schedule
Stage 3 Deliverables.			
System Design <ul style="list-style-type: none"> • RF and Network Design Drawings Including Back haul system design -- To be delivered in electronic and paper form, using Microsoft Word, Excel, Visio and AUTOCAD formats • RF site design drawings stamped by a certified PE-- To be delivered in electronic and paper form, using Microsoft Word, Excel, Visio, and AUTOCAD formats • Bill of materials required for system and site development (after CDR) • Codeplug development Approach 	0	IAW design milestones	IAW with kickoff and Project Schedule

Deliverable	Referenc ed SOW Section	Frequen cy	Due Date(s)
Design Reviews <ul style="list-style-type: none"> • PDR • CDR • Component test plan (if required) 	0	One time only, updated as required	-IAW with kickoff and Project Schedule -Materials due 10 days prior to PDR/CDR -Government review 10 days following PDR/CDR -Remediation 10 days subsequent to notification
Stage 4 Deliverables.			
Test Plans <ul style="list-style-type: none"> • Unit Test Plan and Procedures • Sub-system Test Plan • Integration Test Plan and Procedures • Functional and Performance Test Plan and Procedures • System Test Plan and Procedures • Fixed Network Equipment Test Plan and Procedures (e.g., Staging Plan • Civil Test Plan • Acceptance Test Plan 	0	Draft and Final	IAW with Project Schedule
Stage 5 Deliverables.			
System Staging Plan and Results	4.5.1	N/A	IAW project schedule
Transition/Migration Plan	0		
Training Plan	4.5.3		

Deliverable	Referenc ed SOW Section	Frequen cy	Due Date(s)
Stage 6 Deliverables.			
Build-out <ul style="list-style-type: none"> • Installation Checklist • Site civil infrastructure build-out completed according to site design and specification (i.e., Completed Focus Area Sites) • FNE installed and optimized • Final codeplug developed and programmed in 4,200 subscribers • Test Readiness Review • Red-line system Manual • As Built Documentation 	0	N/A	IAW with kickoff and Project Schedule
Acceptance Testing readiness and burn in completed	0	N/A	IAW project schedule.
Acceptance Testing and Report Completed	4.6.3	N/A	IAW project schedule.
RF Coverage Test Completed and Report complete	0	N/A	IAW project schedule.
Training <ul style="list-style-type: none"> • User Training Materials • User Training • System documentation provided 	0	Draft and Final	IAW Project schedule.
Certification and Accreditation (C&A) packages delivered/Authority to Operation (ATO) received	0	One time only, updated as required	IAW Project schedule.
Site Construction and Maintenance Manual To be delivered in electronic and paper form, using Microsoft Word, Excel, Visio and AUTOCAD formats	4.6.7	One time only, updated as required	Initial: IAW with kickoff and Project Finalization. Update: 14 days after Government review
Digital Photographs (jpg or bmp)	4.67	One time only, updated as required	IAW Project schedule

Deliverable	Referenced SOW Section	Frequency	Due Date(s)
<p>System Documentation To be delivered in electronic and paper form, using Microsoft Word, Excel, Visio, and AUTOCAD formats</p>	4.6.7	One time only, updated as required	IAW Project schedule
<p>Site Close out Package</p>	4.6.7	One time only, updated as required	IAW Project schedule
<p>Site Construction Manual/Site Close out package. One will be provided per focus area. To be delivered in electronic and paper form, using Microsoft Word, Excel, Visio and AUTOCAD formats.</p>	4.6.7	One time only, updated as required	Initial: IAW with kickoff and Project Finalization. Update: 14 days after Government review
<p>Bills of Materials (BOM)</p>	4.7.1	Per milestone schedule	IAW Project schedule milestones
<p>Upgraded and Modernized Systems including CBP P25 TacCom Systems, Console positions and necessary infrastructure</p>	At project close-out	One time only, updated as required	IAW Project schedule

GOVERNMENT FURNISHED EQUIPMENT AND INFORMATION

Information and equipment necessary to accomplish the tasks of this SOW that is held by the Government will be furnished to the Contractor. All such Government Furnished Information and Equipment remain the property of the Government at all times.

Any Government Furnished Information needed by the Contractor in order to perform the SOW will be provided by the Government through the COTR, and will be returned to that same contact upon completion of this SOW. This information will be provided as reference materials and will include all available site information, initial designs, requirements and specifications necessary to complete the design. It should be noted that the SOW takes precedence over reference materials provided.

The Government has previously acquired LMR equipment for use in the TACCOM modernization. As directed by the Government or design, the Contractor shall use this equipment in the design and implementation of the LMR. Appendix C defines whether new towers, shelters or generators are required at each site or existing assets (e.g., leased RF sites, towers, and shelters, powers systems and generators, land-line circuits) can be reused. The Contractor shall treat these existing assets as Government Furnished Property. It should be noted that in some cases this property may be leased from commercial or other government agencies.

CBP will provide the necessary subscriber equipment in the quantities listed below for testing:

- Ten (10) portables for sub-system testing (including batteries and chargers)
- Ten (10) mobile units to be used with the above mentioned ten (10) portable subscribers for staging and site testing and optimization (including batteries and chargers)
- 4,200 mobile and portable subscribers for final code plug installation (including batteries and chargers)

Additionally, CBP will provide at least two encryption key loaders and as necessary to conduct testing.

In addition, the Contractor and Government shall identify and mutually agree upon required Government Furnished Equipment including but not limited to office space, desk, phones, computer, network access, copiers and facsimile. Any such equipment will be provided by the Government through the COTR, and will be returned to that same contact upon completion of this SOW.

The Government furnished information shall include detailed requirements documents including the design and specifications (as provided within the SOW) and the detailed Requirements Traceability Matrices (RTMs) for RGV shall be provided ten (10) days prior to the start of services (Kick off).

To meet connectivity requirements, the Government will order the necessary land-line circuits. However, the Contractor shall coordinate all land-line circuit requirements with the Government.

PLACE OF PERFORMANCE AND HOURS OF OPERATION

Should any effort be required by this SOW to be performed at specified Government facilities, the Contractor shall abide by Department of Homeland Security directives regarding provisions for authorized entrance and exit at these facilities. Hours of work are generally 8:00 AM – 5:00 PM, Monday – Friday, excluding federal holidays. During these hours, all Contractor staff, whether they are located at a Government site or Contractor site must be accessible by telephone.

HOLIDAYS AND ADMINISTRATIVE LEAVE

CBP personnel observe the following days as holidays:

New Year's Day	Labor Day
Martin Luther King's Birthday	Columbus Day
Presidents' Day	Veterans Day
Memorial Day	Thanksgiving Day
Independence Day	Christmas Day

Any other day designated by Federal statute, by Executive Order or by the President's proclamation.

When any such day falls on a Saturday the preceding Friday is observed. When any such day falls on a Sunday, the following Monday is observed. Observance of such days by Government personnel shall not be cause for an extension to the delivery schedule or period of performance or adjustment to the price.

Except for designated around-the-clock or emergency operations, the Contractor personnel will not, without written consent from the COTR and/or the Task Monitor, be able to perform on site under this SOW with CBP on the holidays set forth above. The Contractor will not charge any holiday as a direct charge to the SOW.

In the event CBP grants administrative leave to its Government employees at the site, on-site Contractor personnel shall also be dismissed if the site is being closed. However, the Contractor shall continue to provide sufficient personnel to perform around-the-clock requirements of critical efforts already in progress or scheduled and shall be guided by the instructions issued by the CO or her/his duly appointed representative. In each instance when the site is closed to Contractor personnel as a result of inclement weather, potentially hazardous conditions, explosions, or other special circumstance; the Contractor shall direct its staff as necessary to take actions such as reporting to its own site(s) or taking appropriate leave consistent with its policies.

Work may only be performed on a Federal holiday and/or at the Contractor's site with written consent of the COTR and/or the Task Monitor.

PERIOD OF PERFORMANCE

The period of performance for this SOW shall be 24 months commencing upon the date of award.

SECURITY REQUIREMENTS

The Contractor shall comply with Government administrative, physical and technical security controls to ensure that the Federal Government's security requirements are met. During the course of this task, the Contractor shall not use, disclose, or reproduce data, which bears a restrictive legend, other than as required in the performance of this SOW. The Contractor and its personnel shall be required to sign a non-disclosure agreement prior to working on this task.

Contractors hired for work within the United States or its territories and possessions, and who require access to Government owned or controlled facilities, information systems, security items or products and/or sensitive but unclassified information shall either be U.S. Citizens or have lawful permanent resident status.

All Contractor staff requiring access to sensitive CBP data must be able to pass full Background Investigation (BI) clearances prior to starting work at CBP. This process can take from six weeks to 12 months. Contractor staff requiring access to sensitive CBP data can start with an interim BI, but will have limited access to resources and applications.

The Contractor's manufacturing, staging, site development, and equipment installers will not be required to complete the BI process, but will require escort by BI cleared Government or Contractor staff.

CLEARANCE REQUIREMENTS

Only personnel who require access to CBP or DHS IT Systems (e.g., networks, routers, databases) or require access to sensitive data (e.g., frequency of operation) will require a full field five-year employment background investigation (BI). All other personnel such as manufacturing, staging, site development and equipment installers employed by the Contractor or responsible to the Contractor for the performance of work under this contract do not need a BI. The Contractor shall submit within ten (10) working days after award of this contract a list containing the full name, social security number, and date of birth of those people who claim to have successfully passed a background investigation by CBP, or submit such information and documentation as may be required by the Government to have a background investigation performed. The information must be correct and be reviewed by a CBP Security Official for completeness.

The Contractor shall notify the COTR, CO, Task Monitor and the OIT Automated Information System (AIS) Security Division, Information Systems Security Branch (ISSB) via phone, FAX, or electronic transmission, no later than one work day after any personnel changes or access requirements occur. Written confirmation is required for phone notification. This includes, but is not limited to, name changes, resignations, terminations, and reassignments to another contract. The Contractor shall provide the following information to OIT AIS Security Division, Information Systems Security Branch (ISSB) at Tel. (703) 921-6116 and FAX (703) 921-6570:

Full Name

Social Security Number
Effective Date
Reason for Change

REQUIRED SECURITY FORMS

Normally, such documentation will consist of SF-85P, "Questionnaire for Public Trust Positions" or SF-86, "Questionnaire for Sensitive Positions (For National Security)" TDF 67-32.5, "U.S. Customs Authorization for Release of Information"; FD-258, "Fingerprint Chart"; and a Financial Statement. The forms are obtained from CBP by contacting the COTR for the contract. Failure of any Contractor personnel to pass a background investigation shall be cause for the candidate's dismissal from the project and replacement by a similar and equally qualified candidate as determined and approved by the CO/COTR/Task Monitor. This policy also applies to any personnel hired as replacements during the term of the SOW.

IDENTIFICATION BADGES

Contractor employees shall be required to wear Government (i.e., CBP) Issued identification badges at all times when working in Government facilities.

GENERAL SECURITY

All Government furnished information must be protected to the degree and extent required by local rules, regulations, and procedures. The Contractor shall conform to all security policies contained in the (b) (7)(E)

All services provided under this SOW must be compliant with DHS Information Security Policy, identified in (b) (7)(E)

CONTRACTOR EMPLOYEE ACCESS

(a) *Sensitive Information*, as used in this Chapter, means any information, the loss, misuse, disclosure, or unauthorized access to or modification of which could adversely affect the national or homeland security interest, or the conduct of Federal programs, or the privacy to which individuals are entitled under section 552a of title 5, United States Code (the Privacy Act), but which has not been specifically authorized under criteria established by an Executive Order or an Act of Congress to be kept secret in the interest of national defense, homeland security or foreign policy. This definition includes the following categories of information:

(1) Protected Critical Infrastructure Information (PCII) as set out in the Critical Infrastructure Information Act of 2002 (Title II, Subtitle B, of the Homeland Security Act, Public Law 107-296, 196 Stat. 2135), as amended, the implementing regulations thereto (Title 6, Code of Federal Regulations, Part 29) as amended, the applicable PCII Procedures Manual, as amended, and any supplementary guidance officially communicated by an authorized official of the Department of Homeland Security (including the PCII Program Manager or his/her designee);

- (2) Sensitive Security Information (SSI), as defined in Title 49, Code of Federal Regulations, Part 1520, as amended, "Policies and Procedures of Safeguarding and Control of SSI," as amended, and any supplementary guidance officially communicated by an authorized official of the Department of Homeland Security (including the Assistant Secretary for the Transportation Security Administration or his/her designee);
- (3) Information designated as "For Official Use Only," which is unclassified information of a sensitive nature and the unauthorized disclosure of which could adversely impact a person's privacy or welfare, the conduct of Federal programs, or other programs or operations essential to the national or homeland security interest; and
- (4) Any information that is designated "sensitive" or subject to other controls, safeguards or protections in accordance with subsequently adopted homeland security information handling procedures.
- (b) "Information Technology Resources" include, but are not limited to, computer equipment, networking equipment, telecommunications equipment, cabling, network drives, computer drives, network software, computer software, software programs, intranet sites, and internet sites.
- (c) Contractor employees working on this contract must complete such forms as may be necessary for security or other reasons, including the conduct of background investigations to determine suitability. Completed forms shall be submitted as directed by the Contracting Officer. Upon the Contracting Officer's request, the Contractor's employees shall be fingerprinted, or subject to other investigations as required. All contractor employees requiring recurring access to Government facilities or access to sensitive information or IT resources are required to have a favorably adjudicated background investigation prior to commencing work on this contract unless this requirement is waived under Departmental procedures.
- (d) The Contracting Officer may require the Contractor to prohibit individuals from working on the contract if the government deems their initial or continued employment contrary to the public interest for any reason, including, but not limited to, carelessness, insubordination, incompetence, or security concerns.
- (e) Work under this contract may involve access to sensitive information. Therefore, the Contractor shall not disclose, orally or in writing, any sensitive information to any person unless authorized in writing by the Contracting Officer. For those contractor employees authorized access to sensitive information, the Contractor shall ensure that these persons receive training concerning the protection and disclosure of sensitive information both during and after contract performance.
- (f) The Contractor shall include the substance of this clause in all subcontracts at any tier where the subcontractor may have access to Government facilities, sensitive information, or resources.
- (g) Before receiving access to IT resources under this contract the individual must receive a security briefing, which the COTR will arrange, and complete any nondisclosure agreement furnished by DHS.
- (h) The Contractor shall have access only to those areas of DHS information technology resources explicitly stated in this contract or approved by the COTR in writing as

necessary for performance of the work under this contract. Any attempts by Contractor personnel to gain access to any information technology resources not expressly authorized by the statement of work, other terms and conditions in this contract, or as approved in writing by the COTR, is strictly prohibited. In the event of violation of this provision, DHS will take appropriate actions with regard to the contract and the individual(s) involved.

(i) Contractor access to DHS networks from a remote location is a temporary privilege for mutual convenience while the contractor performs business for the DHS Component. It is not a right, a guarantee of access, a condition of the contract, or GFE.

(j) Contractor access will be terminated for unauthorized use. The Contractor agrees to hold and save DHS harmless from any unauthorized use and agrees not to request additional time or money under the contract for any delays resulting from unauthorized use or access.

(k) Non-U.S. citizens shall not be authorized to access or assist in the development, operation, management or maintenance of Department IT systems under the contract, unless a waiver has been granted by the Head of the Component or designee, with the concurrence of both the Department's Chief Security Officer (CSO) and the Chief Information Officer (CIO) or their designees. Within DHS Headquarters, the waiver may be granted only with the approval of both the CSO and the CIO or their designees. In order for a waiver to be granted:

(1) The individual must be a legal permanent resident of the U. S. or a citizen of Ireland, Israel, the Republic of the Philippines, or any nation on the Allied Nations List maintained by the Department of State;

(2) There must be a compelling reason for using this individual as opposed to a U. S. citizen; and

(3) The waiver must be in the best interest of the Government.

(l) The Contractor shall identify in their proposal(s) the names and citizenship of all non-U.S. citizens proposed to work under the contract. Any additions or deletions of non-U.S. citizens after contract award shall also be reported to the contracting officer.

INFORMATION SECURITY

All services provided under this SOW shall be compliant with (b) (7)(E) [REDACTED], identified in (b) (7)(E) [REDACTED].

The Contractor shall be responsible for Information Technology (IT) security for all systems connected to a DHS network or operated by the Contractor for DHS, regardless of location. This clause applies to all or any part of the contract that includes information technology resources or services for which the Contractor must have physical or electronic access to sensitive information contained in DHS unclassified systems that directly support the missions of DHS and CBP.

The Contractor shall provide, implement, and maintain an IT Security Plan. This plan shall describe the processes and procedures that will be followed to ensure appropriate security of IT resources that are developed, processed, or used under this SOW.

Within 30 days after contract award, the Contractor shall submit for approval its IT Security Plan, which shall be consistent with and further detail the approach contained in the Contractor's proposal. The plan, as approved by the Contracting Officer (CO), COTR and/or Task Monitor, shall be incorporated into the contract as a compliance document.

The Contractor's IT Security Plan shall comply with Federal laws that include, but are not limited to, the Computer Security Act of 1987 (40 U.S.C. 1441 et seq.); the Government Information Security Reform Act of 2000; and the Federal Information Security Management Act of 2002; (b) (7)(E) with Federal policies and procedures that include, but are not limited to (b) (7)(E).

The security plan shall specifically include instructions regarding handling and protecting sensitive information at the Contractor's site (including any information stored, processed, or transmitted using the Contractor's computer systems), and the secure management, operation, maintenance, programming, and system administration of computer systems, networks, and telecommunications systems.

Examples of tasks that require security provisions include-- (1) Acquisition, transmission or analysis of data owned by DHS with significant replacement cost should the Contractor's copy be corrupted; and (2) Access to DHS networks or computers at a level beyond that granted the general public.

At the expiration of the contract, the Contractor shall return all sensitive DHS information and IT resources provided to the Contractor during the contract, and certify that all non-public DHS information has been purged from any Contractor-owned system.

The Government may elect to conduct periodic reviews to ensure that the security requirements contained in this contract are being implemented and enforced. The Contractor shall afford DHS including the Office of Inspector General, DHS and CBP Offices of the CIO, CBP ISSM, COTR and other government oversight organizations, access to the Contractor's and subcontractors' facilities, installations, operations, documentation, databases, and personnel used in the performance of this contract. The Contractor will contact the DHS Chief Information Security Officer (CISO) to coordinate and participate in the review and inspection activities of Government oversight organizations external to DHS. Access shall be provided to the extent necessary for the Government to carry out a program of inspection, investigation, and audit to safeguard against threats and hazards to the integrity, availability, and confidentiality of DHS/CBP data or the function of computer systems operated on behalf of DHS/CBP, and to preserve evidence of computer crime.

Deliverable:

(9.6.a) IT Security Plan

***ACCESS TO UNCLASSIFIED FACILITIES, INFORMATION TECHNOLOGY
RESOURCES, AND SENSITIVE INFORMATION***

The assurance of the security of unclassified facilities, IT resources, and sensitive information during the acquisition process and contract performance are essential to the DHS mission. DHS Management Directive (MD) 11042.1 Safeguarding Sensitive But Unclassified (For Official Use Only) Information, describes how contractors must handle sensitive but unclassified information.

(b) (7)(E)

prescribe policies and procedures on security for IT resources. Contractors shall comply with these policies and procedures, any replacement publications, or any other current or future DHS policies and procedures covering contractors if access to DHS facilities, IT resources or sensitive information is required. Contractors shall not use or redistribute any DHS information processed, stored, or transmitted by the contractor except as specified in the SOW.

SPECIAL CONSIDERATIONS

TRAVEL AND OTHER DIRECT COSTS

The Contractor shall detail their proposed ODCs other than Travel as required to meet the proposed approach. Contractor shall take all reasonable safety precautions when traveling to and visiting RF sites or other sites of interest and will arrange for directions, access and transportation. All overnight travel must be pre-arranged and approved by the COTR.

Contractor Project Manager and up to two Contractor personnel shall meet quarterly at the TACCOM program office located in Springfield, Virginia. The CDR and program reviews shall be conducted at RGV (either McAllen or Edinburg). Travel shall be conducted in accordance with the Federal Travel Regulation.

INVOICE SUBMISSION AND APPROVAL

The Contractor shall submit Invoices for all milestones completed in association with the CLINs for this project. Invoices shall be submitted within ten (10) working days of the completion of the milestone(s) for a CLIN(s). The Contractor shall align monthly invoices with monthly reports such that itemized costs at CLIN levels on invoices can be easily identified and verified within each report.

The Contractor shall be equipped to document their Earned Value data in a system that monitors and reports program and project costs, schedule and technical performance.

The Contractor shall be submitted using a standardized, Government approved format and the Government approved EVM, CLIN and WBS structures in accordance with the prompt payment procedures specified in the Federal Acquisition Regulations. The Contractor reporting system shall be tailored as needed to meet the Government needs.

Invoices shall contain:

- Company name and address.
- Name and address of person to whom payment is to sent, including EFT information, if applicable.
- Name, title, and phone number of person to notify in the event of defective invoices.
- The period being invoiced. This must include the beginning and end dates (dd/mm/yyyy format) of the calendar month or billing cycle period being invoiced.
- Contract/Task Order Number (or Contract Modification Number).
- Total Value of Contract/Task Order (or Contract Modification Value).
- Contract/Task Order Period of Performance.
- The CLIN(s)/milestone(s) being invoiced. This must include the completion date(s) (dd/mm/yyyy format) of the items being invoiced.
- CLIN Tabulation cost by CLIN and milestone.
- Summary Tabulation as follows cost, to date, by CLIN.

- Certification by a competent company official that the invoice contains all accrued costs for the month to the best of the official's knowledge.
- COTR information including name, address, email and phone number

Preferred Invoice submission method shall be electronically to both cbpinvoices@dhs.gov and to the COTR's email address. The COTR's email address will be provided at the time of the award.

Hardcopies of the invoices shall be submitted to the COTR. The COTR's address shall be provided at the time of the award.

Simultaneously, one copy of the invoice shall be mailed to the National Finance Center at the following address:

DHS – U.S. Customs and Border Protection
National Finance Center
P.O. Box 68908
Indianapolis, IN 46268

Detail required for Travel (per individual trip):

- Date (start and end) for travel
- CLIN Number
- Travel description
- Travel breakdown (per diem, airfare, care rental, mileage, etc.)
- Copy of Task Monitor documentation approving the travel
- Total price for travel, by trip and total for all travel

Detail required for ODCs (per expenditure)

- Date of expenditure
- CLIN Number
- Reason for ODC expenditure
- Description of ODC
- Total price of ODC

The Task Monitor will be responsible for review and approval of all invoices. The Contractor will be responsible for submitting all invoices directly to the COTR and the Task Monitor. The Contractor's Project Manager(s) and the COTR/Task Monitor will agree on invoice format and content prior to submission of the first invoice.

WARRANTY

Warranty on all parts and labor shall be for a minimum of 12 months from time of system acceptance. After system acceptance, the Contractor shall convey commercial warranties to the Government for the equipment supplied as part of this SOW.

The Contractor shall document all provide a general warranty statement and information as needed.

PERFORMANCE MANAGEMENT AND REPORTING STRUCTURE

PERFORMANCE MANAGEMENT

The Contractor shall manage the tasks in this SOW within the cost, schedule, and performance constraints as approved by the Government.

The Contractor shall conduct reviews with CBP that accurately report cost, schedule, and performance status as measured through an implemented Earned Value Methodology.

The Contractor shall be aggressive in the identification and resolution of risks, issues, and dependencies.

The Contractor shall be proactive in the identification of internal and external dependencies.

The Contractor shall provide monthly status reports on the project progress.

PROBLEM RESOLUTION

Any issues, risks, or changes identified during the course of performing this SOW shall be reported to the COTR and Government Program Manager and the Task Monitor in writing.

The following general procedure will be used to manage project issues and risks:

- Identify and document
- Assess impact and prioritize
- Assign responsibility
- Monitor and report progress
- Communicate issue resolution

A mutually agreed issue escalation process will be defined at the outset of execution for each task.

REPORTING STRUCTURE

The Contractor's Project Manager and staff shall work closely with the COTR and the Task Monitor to direct all services and deliverables specified under this SOW.

All deliverables completed in support of the activities described in this SOW shall be delivered to the respective Task Monitor and the COTR.

NON-DISCLOSURE OF INFORMATION

Any information made available to the Contractor by the Government shall be used only for the purpose of carrying out the provisions of this task and shall not be divulged or made known in any manner to any persons except as may be necessary in the performance of the task. Contractor staff will be requested to sign Non-Disclosure statements.

All materials and information developed or produced under this SOW, including but not limited to design drawings, documents, presentations, hardware, software and configurations, are the property of the Government, and should not include proprietary markings.

SECTION 508 COMPLIANCE

Section 508 of the Rehabilitation Act, as amended by the Workforce Investment Act of 1998 (P.L. 105-220) requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they must ensure that it is accessible to people with disabilities. Federal employees and members of the public who have disabilities must have equal access to and use of information and data that is comparable to that enjoyed by non-disabled Federal employees and members of the public. All deliverables within this work statement shall comply with the applicable technical and functional performance criteria of Section 508 unless exempt.

This Electronic and Information Technology (EIT) system has been determined to be applicable to Section 508. In accordance with (b) (7)(E) [REDACTED] claims for National Security Exception require a review and approval by the DHS Office on Accessible Systems and Technology (OAST), formerly known as the DHS Section 508 Program Management Office.

DHS OAST has reviewed this acquisition request and has determined that a National Security Exception for the purposes of Section 508 applies and is thereby authorized. A memorandum identifying OAST approval will be included in the contract file.

DHS GEOSPATIAL INFORMATION SYSTEMS COMPLIANCE

All implementations shall comply with the policies and requirements set forth in the DHS (b) (7)(E) including the following:

- All developed solutions and requirements shall be compliant with the HLS EA.
- All IT hardware or software shall be compliant with the HLS EA TRM Standards and Products Profile.
- The DHS geospatial data model shall be used building to the (b) (7)(E)
- All data within the (b) (7)(E) whether adopted or developed, shall be submitted to the DHS EDMO for review and insertion into the DHS Data Reference Mod