

(DRAFT) Performance Work Statement

for

**Mobile After Action Review (MAAR) Mobile Production Unit (MPU) and Mobile Video Unit (MVU)
End of Life Replacement**

at the Joint Readiness Training Center (JRTC)



**U.S. Army Program Executive Office for
Simulation, Training, and Instrumentation (PEO STRI)**

12350 Research Parkway

Orlando, FL 32826-3276

Engineering

Prepared By: _____

Tuan Nguyen

Lead System Engineer, JRTC IS

Date: _____

Concurrence: _____

Paul Smith

Chief Engineer, PM CTIS

Date: _____

Acquisition Logistics

Prepared By: _____

Nathan Kraemer

Lead Acquisition Logistician, JRTC IS

Date: _____

Concurrence: _____

Robert Capote

Lifecycle Acquisition Mgr., PM TRADE

Date: _____

Program Management

Submitted By: _____

Randi Kahl

Project Director, JRTC IS Life Cycle

Date: _____

Approved By: _____

LTC Kenneth Walters

**Product Manager, Combat Training
Instrumentation System (CTIS)**

Date: _____

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**Performance Work Statement
for**

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1.0 SCOPE

This Performance Work Statement (PWS) defines the effort required for the replacement of Mobile Production Center (MPC) and the procurement of Mobile Video Unit (MVU) at The Joint Readiness Training Center, Fort Polk, Louisiana.

A MPC is comprised of a Mobile After Action Review (MAAR) Theater, Mobile Production Unit (MPU) and a Power and Antenna Trailer (PAT).

The MAAR provides seating for 30 personnel and presentation/recording equipment. The MPU provides an edit station with all associated audio, video, and digital control/interface equipment to support the creation and presentation of an AAR and the recording of the AAR. It also provides both high and low sides Core Instrumentation System (CIS) Training and Analysis Facilities (TAF) workstation for Situational Awareness (SA). The trailer mounted generator provides all electrical power required for the MPC and MAAR, and the antenna provides Microwave capability. Each system is completely self-sufficient with integral lighting, electrical power distribution, and Heating, Ventilation and Air Conditioning (HVAC).

In addition, the effort will include as an option for the procurement of Mobile Video Units (MVUs). MVUs provide the recording of audio and video of the field exercises and field AARs in a stand-alone environment and transmit those recordings real-time via microwave or fiber optic links to the CIS where it is recorded and displayed in the CIS TAFs and over the Closed Circuit Television (CCTV) system.

The Government is looking to procure two (2) sets of MAAR/MPUs and eight (8) MVUs.

2.0 APPLICABLE DOCUMENTS

The following documents of issue shown on the document summary list form a part of this PWS to the extent specified herein. In the event of a conflict between documents referenced herein (section 3) and the contents of this PWS (section 4), the contents of the PWS shall be the governing requirement.

2.1 Department of Defense Specifications

None

2.2 Availability of Department of Defense Specifications

Copies are available on the WWW at URL: <http://assist.daps.dla.mil/quicksearch>

2.3 Department of Defense Standards

MIL-STD-130 Identification Marking of U.S. Military Property

MIL-STD-31000 Technical Data Packages

GEIA-STD-0007-A Logistics Product Data

2.4 Availability of Department of Defense Standards

Copies are available on the WWW at URL: <http://assist.daps.dla.mil/quicksearch/>

2.5 Department of Defense Directives

DODD 8570.01 Information Assurance (IA) Training, Certification, and Workforce Management

2.6 Availability of Department of Defense Directives

Copies are available on the WWW at URL: <http://www.dtic.mil/whs/directives/>

2.7 Department of Defense Instructions

DODI 8500.01 Cybersecurity

DODI 8510.01 DOD Information Assurance Certification and Accreditation Process (DIACAP)

DODI 8582.01 Security of Unclassified DoD Information on Non-DoD Information Systems

2.8 Availability of Department of Instructions

Copies are available on the WWW at URL: <http://www.dtic.mil/whs/directives/>

2.9 Other Government Documents, Drawings, and Publications

AR 380.5 Marking and Labeling

Copies are available on the WWW at URL http://www.apd.army.mil/pdf/r380_5.pdf

AR 25-2 Information Assurance

Copies are available on the WWW at URL http://www.apd.army.mil/pdf/r25_2.pdf

PEO STRI BAM PEOSTRI Basic Accreditation Manual

PM TRADE Configuration Management Procedures

Copies of the above documents are available at PEO STRI, ATTN: SFAE-STRI-PM CTIS, 12350 Research Parkway, Orlando, FL 32826-3276

2.10 Other Documents and Publications

CNSSI 1253 Security Categorization And Control Selection For National Security Systems

NIST SP 800-53 Security and Privacy Controls for Federal Information Systems and Organizations

3.0 REQUIREMENTS

The contractor shall provide all required software and hardware, installation, and configuration efforts for the MPC and MVU at JRTC Ft Polk, Louisiana.

The project actions associated with this effort cannot interfere with JRTC training; therefore, the contractor shall consider the impact of having to work around the training rotation schedule (provided upon request) and the limited availability of JRTC assets to support this project when preparing the technical approach.

The MPC shall be able to communicate to the CIS located in Building 1560. The connection shall include the use of the eight fiber-optic access sites, the Forward Operation Bases that have fiber, and microwave capability to the tower sites.

The MPC shall provide:

- All preparation, presentation, recording and printing functions are performed the same way as they are in the fixed AAR theaters.
- Transmission of data, audio and video information between the CIS and MPU via both fiber optic cable and microwave radio system.
- Full mobility to AAR sites throughout the JRTC Instrumentation System (JRTC IS) maneuver area.
- CTC IS TAF workstation capability for SA.

The contractor shall install MPC and MVU equipment in shelters which are safely mounted on Army vehicles, provided as GFE, for transportation over paved road and cross country. These vehicles, with mounted shelters, shall be transportable over U.S highways without special permits.

These Mobile facilities shall have a setup and tear down time of 3 hours or less, with a 4 man crew (daylight condition).

The contractor shall conduct in-plant and on-site integration test to verify correct functionality and compatibility of both hardware and software.

3.1 Mobile Production Center (MPC)

3.1.1 External Power Cords and Cable Bundles

The contractor shall provide power Cords and cable bundles to connect MPU, MAAR vehicles, and Power and Microwave Antenna trailer which will be deployed as a system within 250 feet of each other.

3.1.2 Intercom

The contractor shall provide an intercom system for voice communication between MAAR and MPU shelters.

3.1.3 Mobile After Action Review (MAAR)

3.1.3.1 Internal Cameras and Associated Equipment

The contractor shall provide the MAAR shelter two (2) cameras with associated equipment. These cameras and associated equipment shall be connected to the MPU for video and audio recording control and storage. The cameras shall be capable of High Definition (HD) and Standard Definition (SD) recording and have an integrated pan/tilt/zoom mechanism.

3.1.3.2 Flat Panel Television, Smart Board and Printer.

The contractor shall provide the MAAR shelter two (2) flat panel televisions and one (1) smart board. The televisions and smart board shall be wall mounted. The televisions shall have 1080P resolution, and be large as possible and still be mounted on the theater front wall. The contractor shall also provide monochrome laser printer with cable required for computer connection.

3.1.4 Mobile Production Unit (MPU)

3.1.4.1 Audio/Video Control Stations

The contractor shall provide one (1) Audio/Video Control Station, also known as the Video Switcher, and one (1) audio/video recording control station in the MPU. The video switcher shall control the audio/video presentation in the MAAR. The switcher shall be able to display audio/video data from Blu-Ray media, Digital Versatile Disc (DVD), or being received via fiber or Microwave connection to CIS AAR production center. The audio/video recording control station shall control the operation of MAAR internal cameras. The MPU shall be equipped with HD and SD Digital Video Recorder (DVR) and a Blu-Ray DVD Player.

3.1.4.2 CIS TAF Workstations

The contractor shall provide two (2) CIS TAF workstations in the MPU, one dedicated classified and one dedicated unclassified. These workstations shall be connected to CIS via Fiber Optics Network (FON) or Microwave link. The operators shall be able to display the data from these workstations in the MAAR. The MPU shall also be equipped with a monochrome laser printer to print data from these workstations.

3.1.5 Power and Microwave Antenna trailer

For each MPC, the Microwave Mast Assembly and Compressor shall be installed on the MPU if possible, otherwise a trailer shall be provided for installation and transportation.

The trailer shall be capable of being towed on graded dirt/sand and gravel-top roads at 35 mph (56 km/h) without any damage to the shelter, its contents, and not damage system hardware such that system performance would be degraded.

The trailer shall be capable of being towed on an off paving roads with random potholes, uneven surfaces, washboards, and rocks at 15 mph (24 km/h) without any damage to the shelter, its contents, and not damage system hardware such that system performance would be degraded.

The ground clearance of the trailer shall be a minimum of 12 inches as to allow for ample ground clearance while driving on all field conditions.

The trailer's tire ply shall be sufficient to support the trailer requirements. The tire foot print shall be consistent with the trailer dimensions and shall conform to tire, wheel, and transportation requirement standards of SAE J700, DOT, and FHSA.

The shelter shall be able to be towed at 65 mph (105 km/h) on paved roads without any damage to the shelter, its contents, and not damage system hardware such that system performance would be degraded. At slower speeds below 35mph (56.33 km/h), the trailer shall be able to transport over grades of up to 20 percent grade down and up hills without any damage to the shelter, its contents, and not degrade system performance. The trailer shall be capable of 90 degree turns while being moved forward or in reverse.

A spare tire shall be provided.

3.1.5.1 Microwave Mast Assembly

For each MPC, the contractor shall provide a telescopic Microwave Mast Assembly and associated compressor.

The Mast shall be fully erected to 80 feet, minimum. The Microwave Mast Assembly shall have an automated/semi-automated means to raise and lower the tower and have a manual back-up capability. The Microwave Mast Assembly shall be capable of operating in winds of up to 70mph (113 km/h) at full height with all equipment and antennas installed in all weather extremes with a 1.6 performance margin of safety, meaning the tower shall withstand 1.6 times additional load of equal force to the maximum load it was designed to support. The Microwave Mast Assembly shall provide redundant safety features to prevent over extending or over retracting the mast/tower. The Microwave Mast Assembly shall provide a continuously engaging safety stop feature to preclude catastrophic mast/tower retraction should a hoisting strap or cable malfunction. The Microwave Mast Assembly shall provide the capability to lock out autonomous and remote operation while maintenance is being performed on the tower

3.1.5.2 Power Generator

The contractor shall provide a power generator that would adequately power to the MPC with 33% spare capacity at full load and startup. The contractor shall provide sufficient onboard fuel storage capacity to operate the MPC at maximum load for least 48 hours of operation before refueling. The power supply and distribution system shall conform to applicable National Fire Protection Association (NFPA) standards. The generator shall be mounted for ease of maintenance and removal.

3.2 Mobile Video Unit (MVU)

The contractor shall provide MVUs equipment for video and audio recording of field exercises, and the transmission of those recordings real-time via microwave or fiber optic links to the CIS where it is recorded and displayed in the CIS TAFs and over the CCTV system.

The MVU shall provide a bi-directional interface with the CIS via backhaul wired and wireless network to transmit classified video and audio of field training events. The MVU interface shall support streaming of high definition video resolution 1080i. The Communications Infrastructure shall provide a network capacity for 2 simultaneous transmissions of High Resolution video and audio data from each MVU.

The MVUs shall capture and transmit recordings of field training events. The MVU shall be capable of providing digital video and audio for Electronic News Gathering and field production operations. The MVU wireless camera shall toggle off the wireless connection between the camera and the MVU to support local recording and storage of classified video. The remote video recording devices shall support day and night recording, wired and wireless capabilities of streaming high definition (HD) video resolution 1080i to the MVU.

3.3 Shelters

3.3.1 Heating Ventilation and Air Conditioning (HVAC)

For each shelter, the contractor shall provide the HVAC units. The shelter HVAC units shall be mounted in such a way to allow a service time of one hour to remove and replace components. The HVAC air intake shall be positioned away from the diesel exhaust. The HVAC system shall be thermostatically controlled by the operators and accurate within $\pm 1.5^{\circ}\text{F}$ (0.83°C).

3.3.2 Environmental Conditioning and Insulation

The shelter shall be capable of establishing and maintaining internal temperatures of no more than 78°F (25.5°C) in extreme heat of 120°F (49°C) with Solar Loading, operating equipment and occupants within 60 minutes after start up. Additionally, the shelter shall be capable of establishing and maintaining internal temperatures of at least 62°F (16.6°C) in extreme cold of -10°F (-23°C) with 30 mph (48.3 kph) wind speed, operating equipment, and occupants within 60 minutes after start up.

3.3.3 Acoustical Noise Levels

The control of acoustical noise generation and penetration shall be in accordance with 29 CFR 1910.95. In addition, the acoustical noise level in operational areas when in full use of internal equipment, HVAC system and generator shall not exceed 80dB at the workstations.

3.3.4 Storage

The shelter shall have internal storage cabinets throughout for operator and shelter supplies. The storage compartment shall be capable of securing the internal items during transportation. Dedicated Shelter storage shall be provided for the cameras and printer.

3.3.5 Flooring

Shelters shall be configured with non-slip, non-porous flooring that can be cleaned and maintained.

3.3.6 Wall Covering

The interior wall covering shall be easy to maintain, stain resistant, and provide sound absorption to prevent echoing

3.3.7 Shelter External Configuration

3.3.7.1 Shelter Doorway Access

Shelter Access and egress characteristics of the shelter shall be as follows:

- a. Steps: The shelter shall have non-skid retractable/removable/lockable steps with a means to limit tracking in mud, dirt and sand. The steps shall include hand railings for added safety depending upon the number of steps and height of the shelter above the ground.
- b. Overhang: The shelter shall have a drip edge above the doorway.
- c. Door seals: The door and doorway (kick plate) shall have weather-stripping to prevent wind driven water, dirt and dust from entering the shelter when the door is closed.
- d. Door Locks: The shelter shall have mechanical push button lock doors for personnel access.
- e. Door size: Doorway opening shall be large enough for safe ingress/egress of personnel and to allow for all internal components to be removed and replaced.

f. Awning: retractable awnings shall be provided outside the door.

3.3.7.2 External Access Panels

An external interface shall be provided for power to the shelter. These panels shall also provide bidirectional communications links for voice, data, video and audio signals.

3.3.7.3 Exterior Lighting

The contractor shall provide recessed lighting sufficient to illuminate the entire surroundings of the shelter out to a radius of 50 ft for maintenance, setup, and operator safety in accordance with MIL-STD-1472F, Table XV, (Repair Work, General).

3.3.7.4 Coatings

The coatings used on the exterior of the shelter shall prevent corrosion. The shelter shall have a permanent paint of Field Drab 33105 IAW FED-STD-595B. Selection of color for all surfaces, excluding optics, shall be the low visibility, lusterless, non reflective type. Commercial advertisements and logos shall not appear on the shelter or trailers.

3.3.8 Shelter Power

The contractor shall provide suppression, power conditioning and Uninterruptable Power Supply (UPS) back up battery for up to 30 minutes of operation limited to computational systems, lighting and other critical systems needed to ensure safe and graceful shutdown of the MPC. The power system shall be capable of being monitored from the MPU, reporting status information related to generator performance, remaining fuel, etc. The power supply and distribution system shall conform to applicable National Fire Protection Association (NFPA) standards.

3.3.9 Light Switches and System Switches

Shelter switches shall be conveniently located and logically configured to simplify access.

3.3.10 Interior Lighting

The contractor shall provide a minimum of two variable lighting controls enabling operators to choose full or half illumination. Light placement shall minimize workstation glare. Lighting mounted on the ceiling shall hang no lower than 78 inches (1.98 m) above the floor of the shelter. Emergency wall mounted/powerd rechargeable handheld flashlights shall be provided near the doorway. The shelter lighting shall conform to Occupational Safety and Health Administration (OSHA) standards (29 CFR 1915.82 (lighting)).

3.3.11 MAAR Shelter

The contractor shall provide a customized extendable shelter per MAAR. The shelter size when not extended shall not exceed the maximum size allowable for transportation on U.S. highways. When extended it shall be large enough to accommodate all equipment/devices in operating set up and 30 personnel.

3.3.11.1 Shelter vehicles

The shelter for MAAR shall be securely mounted on a Heavy Expanded Mobility Tactical Truck (HEMTT)(M985A4 CARGO TRUCK).

3.3.11.2 Seats and Tables

The contractor shall provide 30 folding chairs and 2 folding tables of the size 30”x60”. Chairs and tables shall be commercial grade.

3.3.12 MPU and MVU Shelter

S-280 shelter shall be used for MPU and MVU.

3.3.12.1 Shelter vehicles

The shelter for MPU and MVU shall be securely mounted on an Army 5 Tons truck (M939).

3.3.12.2 MPU Operator Work Station

The shelter shall provide an office-type environment with workstation seating to accommodate three (3) operators with a floor to ceiling height of not less than 78 inches. Each operator workstation shall contain a desk-top area comprised of 2 CIS TAF workstations and other workstation which devices required for the control and operation of the MPC. The contractor shall provide 3 mesh multi adjustment roll around chairs suitable for long duration seating.

3.3.12.3 MVU Operator Work Station

The shelter shall provide an office-type environment with workstation seating to accommodate three (3) operators with a floor to ceiling height of not less than 78 inches.

3.3.12.4 Equipment Rack Area

The shelter shall provide an integrated network of accessible servers in the equipment rack area. The equipment rack area shall host all equipment required for MPC and MVU operation. Individual future growth space of at least 100% or 36 inches (whichever is greater) shall be provided for the server area. The equipment rack area shall have a positive pressure filtered cooling design (based on 100% growth) and incorporate sound proofing for operator protection and comfort.

4.0 GENERAL REQUIREMENTS

4.1 Program Management

The contractor shall provide the overall management and administrative support to ensure that the requirements of the PWS are satisfied. The contractor shall define and monitor metrics and Technical Performance Measures (TPMs) to evaluate the performance of each critical technical and management process and conformance of the evolving products with contract requirements. The contractor shall provide documented program status and accomplishments, upcoming activities, identified issues and their resolution; a program integrated master schedule (IMS), and any other relevant items in periodic reports. The contractor shall implement, manage, update, and maintain the program in accordance with (IAW) the timelines defined in the IMS. All information delivered or presented at program reviews shall originate from the IMS and shall contain all critical events and exit criteria, accomplishments, predecessor and successor events, and their dependencies. The IMS shall address total program activities including activities performed by subcontractors. The IMS shall identify critical path to be used to assess project progress, schedule risk and corrective actions required to mitigate risk. IMS will be part of the Monthly Report.

(DI-MGMT-80227) Contractor's Progress, Status and Management Report

4.2 Financial Management

The contractor shall plan, budget, schedule, and control resources allocated to meet requirements of the contract. The contractor shall document and track status of all appropriated funds associated with the contract to include payments, cancellations and invoices against each contract line item and sub-line item.

4.3 Meetings and Technical Reviews

The contractor shall plan, host and conduct meetings and technical reviews as defined herein. All meeting and technical reviews shall occur at a timeframe in the program recommended by the contractor and approved by the Government. The contractor shall document the results of the meetings/reviews, including any resulting action items and update briefing charts.

(DI-MISC-80711) Scientific and Technical Reports

(DI-ADMN-81373) Presentation Material

4.3.1 Post Award Conference

A post award conference shall be held at a mutually agreed contractor facility within 15 - 20 days after contract award. The conference shall introduce key Integrated Product Team (IPT) participants with emphasis on top level management of the program, identify points of contact and discuss both parties understanding of the scope of work, agree on metrics that shall be used as management indicators, identify the partnering approach, and other contract issues.

4.3.2 Integrated Product Team (IPT) Meetings

The contractor shall plan and conduct the monthly IPT meeting via telephone. The contractor shall address the full spectrum of program management concerns including program management, program status, schedule, program risk (cost, schedule and performance), and review and track action items.

4.3.3 Test Integration Working Groups (TIWGs)

The contractor shall plan and participate in TIWGs as part of the monthly IPT meetings to support the following:

- a. Assist in managing the system test and evaluation process throughout the system.
- b. Develop and document the test and evaluation strategy.
- c. Ensure that the test and evaluation of the system is planned and conducted to sufficiently verify all the requirements and stress the system in its represented environment.

4.3.4 Technical Design Review (TDR)

The contractor shall conduct a TDR to demonstrate the technology of the JRTC MPC and MVUs. The TDR shall be a formal technical review of the basic design approach. The TDR shall cover the progress and technical adequacy of the selected design approach. The TDR shall allow the Government to evaluate the technical risk associated with the selected design approach. The TDR shall include a subsystem block and functional diagram, concept and theory of operation, design standards and logistical considerations (including training and manuals). The TDR shall be conducted at JRTC Fort Polk, LA and shall be conducted 60 days after Post Award Conference.

4.4 Systems Engineering (SE)

The contractor shall provide an overall system engineering approach and activities necessary to maintain the allocated baseline and to deploy a complete and functional system. System engineering includes all planning, organizing, and control to ensure that the operational needs and requirements are delineated as functional requirements. The contractor shall include into the Systems Engineering process considerations for supportability, maintenance concepts, obsolescence, and total ownership cost management (reduction). The system engineering approach shall be one of an incremental build when applicable. Each build shall add functionality to the previous build, so that the final build shall be one that is tested and verified at acceptance testing. Systems integration includes the integration of technical components, organizational components, and verification (final acceptance testing). The area of system integration may make use of technical laboratories, prototype systems, and pilot systems. The development of these systems shall include all necessary safety, reliability/maintainability engineering, Manpower and Personnel Integration (MANPRINT), pollution prevention, and human factor considerations. The contractor shall employ a quality engineering program to measure and track key processes and establish metrics and process control systems.

4.4.1 Hardware and Software Integration

The contractor shall perform all activities to integrate and assemble the hardware and software to achieve a fully functional system, with all support systems, to seamlessly integrate with the existing JRTC Instrumentation Systems (JRTC-IS) without degrading current capabilities.

4.4.2 Software and Hardware Configuration Control

The contractor shall adhere to the PM TRADE Configuration Management (CM) Procedure. The contractor shall obtain approval of the Government IPT prior to committing to use any version of any COTS product. The contractor shall ensure that all COTS products included in the system deliverable configuration are commercially supported for a period of not less than two years after Government acceptance.

4.4.3 Engineering Change Proposals (ECP)

The contractor shall document and the IPT shall review all changes to established baselines and all changes to the requirements (other than the functional baseline), including changes to the statement of work, contract data requirements list (CDRL), and the contract schedule. In coordination with the government, the contractor shall hold a requirements review on all proposed routine changes prior to the submittal of the engineering change proposal in order to clarify requirements, format and content. Depending upon the criticality of the proposed changes, this review may take the form of a teleconference, a formal meeting at a Government facility, or a formal meeting at the contractor's facility. Minutes shall be a historical record to allay any miscommunications. The contractor shall develop an Engineering Release Record (ERR) for each approved ECP.

(DI-CMAN-80639C) Engineering Change Proposal
(DI-SAFT-80103B) Engineering Change Proposal System Safety
(DI-CMAN-80463C) Engineering Release Record

4.5 Quality Assurance (QA)

The contractor shall implement a QA program using industry-accepted best practices that comply with ISO 9001 and software QA (SQA) in accordance with the contractor's internal SQA processes to ensure the system requirements are met. The contractor shall utilize measurement points that will provide maximum visibility into processes. The contractor shall select the proper methods to analyze these processes to continuously improve the system.

4.6 Safety Assessment and Health Hazard Analysis

The contractor shall utilize a safety process to identify, evaluate, document and eliminate or control hazards throughout the systems life cycle. The safety process shall impose management controls in order to eliminate any hazards or reduce the associated risk of a system or equipment hazard to a level that is acceptable to the Government. The contractor shall ensure the components are safe for personnel to transport, install, operate, maintain, support and dispose of. The contractor shall identify hazards, assess the risk, track hazards, mitigate hazards, verify corrective actions have been implemented and verify hazards

have been eliminated or reduced to acceptable risk levels. The system shall not incorporate any asbestos or suspended glass fiber materials. The system shall preclude exposure of personnel or the environment to excessive levels of toxic, carcinogenic, or otherwise hazardous materials as defined by the Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), or the Department of Transportation (DOT). Polyvinylchloride (PVC) shall not be used in crew compartments or confined spaces. The contractor shall provide the Safety Assessment and Health Hazard Report.

(DI-SAFT-80106B) Health Hazard Assessment Report

(DI-SAFT-80102B) Safety Assessment Report (SAR)

4.7 Risk Management Framework /Cybersecurity

The contractor shall integrate Cybersecurity into their programmatic processes, document decisions, specify and track requirements, document certification efforts, identify possible solutions, and maintain operational systems security in accordance with (IAW) DoDI 8500.01, DoDI 8510.01, CNSSI 1253, NIST SP 800-53, DoDI 8582.01, AR 25-2, and the PEO STRI Basic Accreditation Manual (BAM). The contractor shall support migration from existing DoD Information Assurance Certification and Accreditation Process (DIACAP) accreditations to performing accreditations under the Risk Management Framework (RMF) in accordance with (IAW) 8500.01 and DoDI 8510.01. The use of classified data must be addressed in accordance with AR 380-5. The contractor shall deliver the system in an acceptable state of Information Assurance Vulnerability Alert (IAVA) and Security Technical Implementation Guide (STIG) compliance. All personnel performing Cybersecurity functions shall be trained and certified in accordance with DoDD 8570.01. The contractor shall secure all unclassified DoD information on Non-DoD information systems in accordance with DoDI 8582.01.

(DI-MISC-80711A) Scientific and Technical Reports

4.8 Test and Evaluation

The contractor shall plan, coordinate, establish and implement a test and evaluation program. The contractor shall prepare acceptance test plans for Government approval. The contractor shall prepare test plans and procedures for use in conducting any Government-witnessed tests. If the contractor chooses to perform phased deliveries, the contractor shall prepare a test plan and procedures for each phased delivery.

The installation and testing of the equipment at the JRTC cannot interfere with the training operations; therefore, the contractor shall work around the training rotation schedule. The contractor shall identify support resources and infrastructure necessary for test and evaluation activities. If the contractor requires Government support or assets for a test, the contractor shall submit a request for approval to the Government at least 120 days prior to the start of test. The contractor shall host a Test Readiness Review prior to the start of any Government-witnessed test.

(DI-NDTI-80566A) Test Plan

(DI-NDTI-80603A) Test Procedure

(DI-NDTI-80809) Test/Inspection Report

4.8.1 Test Readiness Review (TRR)

The TRR shall occur before any Government witnessed testing begins, and shall normally last not more than one day. Prior to the start of test event, the contractor shall present evidence that documentation is complete, the system is ready, prior test(s) were successful or open issues have been addressed. There shall be reasonable confidence that the system to be tested can satisfactorily pass the test. This review shall determine what actions are required to ensure resources, training, and test hardware will be in place to support the successful conduct of the test, and to ensure that test, documentation, design maturity and configuration, and data systems has been adequately addressed. The contractor shall document action items and coordinate and track resolutions for each item until closure.

(DI-MISC-80711) Scientific and Technical Reports

4.8.2 Rotational Exercises

The contractor shall provide the necessary technical personnel to support two (2) rotational exercise.

4.8.3 Test Discrepancies

The contractor shall utilize a suspense system to ensure timeliness of analysis and corrective action of each test discrepancy. Government concurrence is required prior to the closeout of a discrepancy.

4.8.3.1 Test Discrepancy Processing

The contractor shall document, in a Corrective Action Report (CAR) which shall cross reference to the Government Test Incident Report (TIR), a detailed description defining the changes made to the equipment, hardware, and software to correct each discrepancy. Each discrepancy correction that modifies or changes any baseline shall be documented and resolved per the PM TRADE configuration management procedure (Reference PM TRADE Configuration Management Procedure). Discrepancies ready for recheck shall normally accumulate into sufficient quantities to permit at the most cost effective method of testing, based on Government approval.

4.9 Logistics

The contractor shall conduct engineering analyses to establish quantitative and qualitative supportability design guidelines. The contractor shall conduct trade studies, evaluate design and support alternatives, and establish system supportability preliminary design configurations consistent with system readiness and availability and life cycle cost goals. The contractor shall coordinate with existing life cycle support contractors (LCCS) using associate contractor agreements, develop initial fielding plans for the system and verify that the maintenance actions and support structure are aligned with the maintenance concept.

4.9.1 Logistics Support Analysis

The contractor shall identify support resources and infrastructure necessary for test and evaluation activities. The contractor shall analyze existing LCCS support structures and develop and define an optimized support infrastructure for production and deployment. The recommended support resources shall be sufficient to allow another contractor with comparable skills to assume operation, maintenance, and support of the system and sustain the system availability requirement. The contractor shall only use the form, fit, function, and interface requirements in the performance specifications for provisioning, training and maintenance planning.

4.9.2 Supportability Analysis and Logistics Management Information

The contractor shall conduct repair level analyses, develop diagnostic, preventative maintenance and repair procedures, conduct facilities analyses, refine hardware and software maintenance and support concepts, and identify support resource requirements including required spares and support equipment. Using SM&R Codes, the contractor shall develop a listing of which items should be repaired and which should be discarded and the level of maintenance at which the repair should be performed with the associated cost. The contractor shall document the following in a database:

- a. All input data and their corresponding value and source of the data.
- b. Operational scenario modeled, assumptions made, constraints assumed, and non-economic factors imposed.
- c. Maintenance alternatives considered.
- d. Analytical method and models used to perform the economic evaluations.
- e. Discussion of the sensitivity evaluation performed and results obtained.

(DI-SESS-81758) Logistics Product Data

(DI-SESS-81759) Logistics Product Data Summaries

4.9.3 Initial Spare and Repair Parts

The contractor shall recommend the range and quantity of spare and repair parts needed to initially support each fielded system. The contractor recommendations shall include consideration for the support concept for the system, essentiality of the component, price, lead times, and failure factors. The contractor shall combine procurement/production of selected spares with identical items procured/produced for installation on the primary equipment when ordered by the Government. Configuration control shall be maintained for on-order spares as well as for items to be installed on the primary system to ensure that appropriate spares are delivered.

4.9.4 Tools and Test Equipment

The contractor shall identify all tools and test equipment required for the repair and use of the system. This shall include any unique items required to inspect, test, calibrate, service, repair, or overhaul the system or

its constituent components. The contractor shall identify any deficiencies between the tools and test equipment required for support of the system and those available at the intended fielding sites.

4.9.5 Configuration Management

The contractor shall implement an internal configuration management system for identification, control, configuration status accounting, and auditing of all configuration documentation, hardware, and software representing or comprising the product.

4.9.6 Product Definition Data (PDD)

In accordance with MIL-STD-31000A, the contractor shall develop, produce, and maintain product definition data (PDD) that accurately depicts the final product. The PDD is the technical description of items adequate for supporting an acquisition strategy, production, engineering, RMF, and logistics support. The PDD shall disclose complete design, RMF, logistics, manufacturing requirements, and the means of measuring compliance with the requirements. Piece part information (drawings, computer aided design files and meta data.) and associated lists shall provide the necessary design, engineering, RMF, manufacturing, and quality assurance requirements information necessary to enable the procurement or manufacture of an interchangeable item that duplicates the physical, RMF, and performance characteristics of the original product, without additional design engineering effort or recourse to the original design activity. The contractor shall produce and maintain documentation for all electrical assemblies and subassemblies in such a manner to ensure their functional integration without recourse to special test equipment (STE) or installation of the assemblies or subassemblies into a next higher assembly. Utilizing the established logistic repair procedures, the contractor shall identify the higher level components and assemblies to be repetitively procured as spare components and assemblies or which may be procured independently. For each higher level component or assembly, the contractor shall determine and document the functional requirements for the item, the environment in which it must operate, interface and interchangeability characteristics, and criteria for verifying Logistics Support criteria. The contractor shall conduct engineering analyses to establish quantitative and qualitative supportability design guidelines. The contractor shall conduct trade studies, evaluate design and support alternatives, and establish system supportability preliminary design configurations consistent with system readiness and availability and life cycle cost goals. The contractor shall coordinate with existing LCCS using associate contractor agreements, develop initial fielding plans for the system and verify that the maintenance actions and support structure are aligned with the maintenance concept.

(DI-SESS-81000B) Product Drawings and Associated List
Annex to Exhibit B Technical Data Package Option Selection Worksheet

4.9.7 Configuration Verification

The contractor shall verify and audit the system configuration information to ensure that requirement attributes are met and accurately documented. The contractor shall verify system attributes through a systematic comparison with the associated results of system tests, analyses, inspections, demonstrations, or simulation models. The contractor shall maintain surveillance over the configuration management process to ensure that it is being followed and remains in compliance with requirements.

(DI-SESS-81646) Configuration Audit Plan

4.9.8 Unique Identification (UID) of Tangible Items

The contractor shall coordinate among the IPT members to determine items requiring unique identification including embedded subassemblies, components and parts, and identify the UID to be used for each item. The contractor shall provide unique item identification, or a DoD recognized unique identification equivalent, for all identified items delivered. UID marking design for each item shall be both machine readable and human readable in accordance with MIL-STD-130N, paragraph 5.2.

(NOTE: For more guidance, <http://www.acq.osd.mil/dpap/pdi/uid/index.html> and Defense Acquisition Guidebook, Chapter 4, systems engineering UID considerations.)

(DI-MGMT-81804A) Unique Identification (IUID) Marking and Verification Report

4.9.9 Maintenance Concept

The contractor shall develop a maintenance concept that consists of two levels of maintenance; Field and Sustainment. Field Maintenance, also known as on-system maintenance, repairs and returns equipment to the operator or user. Field Maintenance shall include that maintenance considered to be operator level, and direct support. Field Maintenance consists of preventative maintenance daily readiness check and services, adjustments to controls and other maintenance that can be accomplished by the operator or trained technician with the aid of special tools, support equipment, additional training knowledge or skills, either on site or at a LCCS maintenance facility. It includes system activation, adjusting and aligning to specific parameters, troubleshooting, removal and replacement of failed components. Sustainment Maintenance, also known as off-system maintenance, primarily repairs and returns equipment and components to the supply systems Sustainment Maintenance consists of off-site maintenance capabilities conducted at the LCCS contractor or a designated contractor facility. It includes the use of designated repair points operated by the LCCS contractor, original manufactures and vendors, in order to overhaul, rebuild, replace or calibrate failed equipment.

4.9.10 Technical Publications

The contractor shall describe each operation and maintenance task in detail and in logical, systematic steps for the work to be accomplished. The operations and maintenance instructions shall accurately provide the technician with all the information needed to keep the equipment operational. It shall provide system and subsystem oriented instructions for installation, operation, maintenance, and testing. All tools, test equipment and consumable items required to accomplish any maintenance or installation shall be identified just prior to and as part of the task. Government furnished material, government technical manuals or government-approved commercial operation and maintenance manuals shall be used as references for system and subsystem maintenance. All government technical manuals and COTS manuals shall be reviewed to ensure changes, updates, revisions, or supplementation is not required to reflect the components actually being installed. All publications shall reflect the configuration of fielded hardware as documented in the product baseline. The contractor shall prepare Operator's Manuals that provide instructions suitable for use by the intended audience of the system. The Operator's Manual shall also include operator

maintenance tasks such as preventive maintenance checks and services, inspection, lubrication, adjustment, and operator level repair and replacement tasks as needed. The contractor shall identify and document maintenance tasks for both levels of the maintenance concept. The contractor shall identify all required spare parts, consumables, tools, and test/support equipment associated with each task and identify the level of maintenance which each task shall be performed.

(MIL-STD-40051-2B) Operator Manual for Page Based Technical Information

(MIL-STD-40051-2B) Maintenance Manual for Page Based Technical Information

(See Annex to Exhibit C) Requirement matrix for Page Based Operator and Maintenance Manuals

(DI-TMSS-80527C) Commercial Off The Shelf Manuals & Associated Supplemental Data

4.9.10.1 Publications In-Process Reviews (IPR)

The contractor shall host and co-chair publication reviews to ensure the technical publications are being prepared according to contracts. Each IPR shall be scheduled to coincide with a system level program reviews defined in the integrated master plan. The contractor shall act on reported decisions and discrepancies resulting from or associated with each IPR. Each review shall include a review of incorporated corrections or comments from previous IPRs prior to proceeding with the current IPR. If any IPT member identifies previous IPR comments that are not included in the technical publications, the IPR shall be considered incomplete.

4.9.10.2 Validation

Validation shall be accomplished on all technical publications, changes, supplemental data, and revisions thereto. Publications shall be validated by the contractor prior to start of government acceptance testing. A technical publication shall not be ready for validation or verification until the following conditions have been fulfilled:

- a. Engineering technical review has been completed.
- b. Information, illustrations and parts lists reflect correct configurations of the system and equipment, to include all engineering changes. Engineering drawings should be up to date and in approved format.
- c. Procedural instructions are readily understandable by the intended user and adequate to perform all operations and maintenance functions.
- d. All procedures have been performed to assure accuracy and performance requirements.
- e. Adequacy of data is checked to ensure that it supports the approved maintenance and support plan.
- f. Hardware of the proper configuration is available for the validation and verification effort.
- g. All safety hazards identified in the safety assessment report are resolved and identified within the text as cautions or warnings necessary to protect the equipment or personnel as appropriate.

h. The use of any hazardous material has been identified.

(DI-TMSS-81819A) Technical Manual Validation Certificate

4.9.10.3 Verification

Publications shall be verified by the Government prior to acceptance of the system. The contractor shall assist PEO STRI IPT members to verify the Technical Manuals (TM) are accurate. The IPT may choose to perform verification concurrently with the validation effort. Correction of discrepancies and changes resulting from training, testing and reviews shall be incorporated into the TM. The contractor shall provide system equipment, technical and engineering support and facilities as required to aide in the performance of verification effort. The contractor shall incorporate all comments from compliance-reviews, technical accuracy reviews and verification reviews into final submission of TM. Verification shall be rescheduled if more than 15 percent of the manual requires corrections.

(DI-TMSS-81821) Technical Manual Verification Incorporation Certificate

4.9.11 New Equipment Training (NET)

After installation, verification, and acceptance of the system, the contractor shall provide NET training to the receiving organizations. This training shall be a self-contained course and provide detailed operational and maintenance knowledge of the system. A Training Support Package shall be provided to assist in Train the Trainer activities. The contractor shall develop and provide system operation and maintenance familiarization training through a combination of classroom, written instructions, and hands-on operation. The contractor shall analyze, and prepare all training courseware including program of instruction lesson plans, practical exercises, and a train-the-trainer package to accommodate new equipment training, sustainment training, and training of testers and evaluators. The contractor shall have available draft training materials for each design increment prior to starting the system level Test and Evaluation (T&E). The contractor shall conduct training for key test personnel prior to starting Tests and Evaluations. The contractor shall develop a complete and exportable training support package that integrates training products, materials, and other pertinent information necessary to train the system. The contractor shall design and develop this training support package using instructional systems design processes. For commercial and Non-developmental Items (NDI) courses, existing materials shall be utilized.

(DI-SESS-81524B) Training Evaluation Document

(DI-ILSS-80872) Training Materials

4.9.11.1 Operator Training

The contractor shall plan, develop, conduct, and document the completion of the initial operator course. The course shall provide comprehensive training for operator(s) in the concepts, skills, and aptitude to efficiently operate the system. The course shall provide familiarization with simulator operating techniques

and shall emphasize the utilization of the instructor facility, its functions, and controls. The course shall address the physical and functional descriptions and operation of the equipment including features, advantages, and configurations. In addition, the contractor shall develop and provide operator and maintenance training with respect to the nature, personnel, and criticality of the protective mechanisms in place to secure the assets. This shall include the methods, skills, use and mechanisms to maintain the level of security. The training shall be geared toward the audience and their roles and responsibilities with respect to the system's operation and maintenance (i.e., system administrator, network administrator, hardware maintain, etc).

4.9.11.2 Maintenance Training

The contractor shall plan, develop, conduct, and document the completion of the initial maintainer course for the initial cadre of maintenance personnel prior to government acceptance. The course shall provide comprehensive training for maintainers in the concepts, skills, and aptitude to efficiently operate the system. This course shall consist of instruction in troubleshooting and maintenance, diagnostics to fault isolation, calibration, adjustments, remove and replace procedures, use of built in test, and repair that is beyond operator level maintenance. After completion of the course all personnel shall be capable of operating, maintaining and troubleshooting to the lowest replacement part level.

4.9.11.3 Class Size

For each individual to receive the greatest benefit from the training, maximum class size shall be five (5) trainees. The contractor shall conduct three (3) training sessions at Fort Polk, LA.

4.9.11.4 Course Completion Criteria

The contractor shall develop criterion and performance feedback evaluation reports. The contractor shall provide these reports and student capability assessments to those individuals who complete the subject course.

(DI-SESS-81524B) Training Evaluation Document

4.9.12 Interim Life Cycle Contractor Support

The contractor shall provide logistics and operational support to the PEO STRI Life Cycle Support contractor at the location for a period of ninety (90) days after Government acceptance(s). These efforts shall include the updating of software components (commercial or developed) with the latest product line baseline description; resolve interface conflicts, errors and problems; and to oversee repair to damages and degradations caused by normal wear and tear on the system. The logistic considerations (with supporting documentation) should address the product line, and how it would be best supported, given the possible variations within the product line.

4.10 Contractor Personnel Requirements

4.10.1 AT Level I Training

All contractor employees, to include subcontractor employees, requiring access to Army installations, facilities and controlled access areas shall complete AT Level I awareness training within 90 calendar days

after contract award. The contractor shall submit certificates of completion for each affected contractor employee and subcontractor employee, to the Contracting Officer Representative (COR) or to the contracting officer, if a COR is not assigned, within 15 calendar days after completion of training by all employees and subcontractor personnel. AT Level I awareness training is available at the following website: https://atlevel1.dtic.mil/at_

4.10.2 Access and General Protection/Security Policy and Procedures

All contractor and all associated sub-contractors employees shall comply with applicable installation, facility and area commander installation/facility access and local security policies and procedures (provided by Government representative). The contractor shall also provide all information required for background checks to meet installation access requirements to be accomplished by installation Provost Marshal Office, Director of Emergency Services or Security Office. All contractor workforces must comply with all personal identity verification requirements as directed by DOD, HQDA and/or local policy. In addition to the changes otherwise authorized by the changes clause of this contract, should the Force Protection Condition (FPCON) at any individual facility or installation change, the Government may require changes in contractor security matters or processes.

4.11 Computer Hardware, Enterprise Software Solutions (CHESS) Program

The contractor shall comply with the Army's Computer Hardware, Enterprise Software Solutions (CHESS) program. Under PEO Enterprise Information's Systems (EIS), the CHESS program is the mandatory source for commercial IT purchases. CHESS contracts provide IT products and services that comply with NETCOM, Army and DoD policy and standards. Purchasers of commercial hardware and software must satisfy their IT requirements by utilizing CHESS contracts and DoD Enterprise Software Initiative agreements first, regardless of dollar value. Any purchase made outside of CHESS contracts requires a waiver. A complete list of CHESS contracts and the on-line waiver process can be found at <https://chess.army.mil>.

4.12 Contractor Manpower Reporting Application (CMRA)

The contractor shall report ALL contractor labor hours (including subcontractor labor hours) required for performance of services under this contract for the Power Element Life Cycle Replacement program via a secure data collection site. The contractor is required to completely fill in all required data fields using the following web address: <http://www.ecmra.mil/>. Reporting inputs will be for labor executed during the period of performance during each Government Fiscal Year (FY) which runs October 1 through 30 September. While inputs may be reported any time during the FY, all data shall be reported no later than October 31 of each calendar year. Contractors can find User Guides, Frequently Asked Questions and may direct questions to the help desk at <http://www.ecmra.mil/>.