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Performance Work Statement

Ground Based Air Defense Systems New Equipment Training



Section J, Attachment 1 Version 1 05 November 2021

Revision	Date	Summary of and Reason for Change

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Appendix A - Government Furnished InformationA-

1.0 Scope

This Performance Work Statement (PWS) defines the effort required to analyze, design, develop, implement, evaluate, support, and manage training products, and deliver training for the Program Manager, Ground Based Air Defense (PM GBAD) portfolio of Program of Records (PoR) and Joint Urgent Operational Need System (JUONS). It includes associated Subject Matter Expertise (SME) and program management requirements to support this effort. The performance standards for each objective are located in the Quality Assurance Surveillance Plan.

Unless stated within this PWS, the Contractor shall provide all personnel, tools, materials, supplies and other resources necessary to perform the work described herein, to include providing the deliverables defined within the Contract Data Requirements Lists (CDRLS) identified throughout the PWS.

2.0 Applicable Documents and Government Furnished Information/Property

The following documents, of the exact issue shown, form a part of the PWS to the extent specified herein. In the event of a conflict between the documents referenced herein and the contents of this PWS, the contents of this PWS shall take precedence.

With the exception of those documents listed in paragraph 2.2 the Contractor may obtain the specifications, standards, plans, drawings, data item descriptions, and other pertinent documents cited in this PWS from the on-line Acquisition Streamlining and Standardization Information System (ASSIST).

2.1 Handbooks (Guidance Only)

• MIL-HDBK-29612/2A Instruction Systems Development/Systems Approach to Training and Education.

2.2 Other Government Documents and Publications (Required)

- NAVMC 1553.1A. Marine Corps Instructional Systems Design/Systems Approach to Training and Education Handbook
- MCO 1553.2B Management of Marine Corps Formal Schools and Training Detachments
- Federal Standard Mandatory Compliance 1, Defense Federal Acquisition Regulation Supplement (DFARS) Clause 252.204-7012 (Safeguarding Unclassified Controlled Technical Information) Version 2.0 August 2015
- Federal Standard Mandatory Compliance 2, NIST Special Publication 800-171, Revision 1, Protecting Controlled Unclassified Information in Nonfederal Systems and Organizations
- Federal Standard Technical Evaluation Criteria 1, NIST Special Publication 800-171A, Assessing Security Requirements for Controlled Unclassified Information (CUI).

2.3 System and Other Program Management Office (PMO) Documentation

- NIST Special Publication 800-171 (Rev. 1) (NIST SP 800-171)
- GBAD Configuration Management Plan, GBAD_CMP_1_1_20200427

2.4 Government Furnished Property

The Government will provide Government Furnished Property (GFP) for the performance of this contract. The Contractor shall follow all appropriate guidance for the proper use, storage, transportation, care, and accountability of GFP. The Contractor shall have an acceptable property management system as defined in FAR 45.105. If the Property Management System has not been approved by the Defense Contract Management Agency (DCMA), the Contractor shall have a plan for a system of internal controls to manage GFP in accordance with FAR Clause 52.245-1.

The Contractor shall manage, control, use, preserve, protect, repair and maintain government property within its possession in accordance with its approved Property Management Plan. The Contractor shall initiate and maintain the processes, systems, procedures, records, and methodologies necessary for effective control of government property.

During the period of performance, the Contractor shall disclose, in writing to the Contracting Officer's Representative (COR), within seven business days, any significant changes to their property management system. The Contractor shall perform an accountability function for GBAD assets in their possession. The Contractor shall be responsible for receipt, accountability, security, storage, and reporting requirements in accordance with the GFP clauses of the contract and the required CDRLs, for the GFP provided.

The Contractor shall inspect all inventory received, and identify and report status to include any discrepancies or deficiencies to the Government in accordance with CDRL B001. The Contractor shall be responsible for ensuring Contractor personnel who transport any equipment in commercial vehicles are properly licensed and insured according to State laws and regulations. The Contractor shall report GFP issues, GFP status, maintenance and repair actions monthly in accordance with CDRL B001.

3.0 Overview of GBAD Portfolio and NET Requirements

The GBAD portfolio includes the Marine Air Defense Integrated Systems (MADIS) Family of Systems (FoS), Fixed Site FoS, Medium Range Intercept Capability (MRIC), and legacy and potential future weapon systems that will defend against Unmanned Aircraft Systems (UAS) and Fixed Wing/Rotary Wing (FW/RW) threats in support of maneuver forces and Counter-UAS (C-UAS) intended for defense of critical infrastructures and personnel. The defense of maneuver forces requires an integrated and in-depth air defense umbrella based on the rapid kill chain sequence of "detect", "track", "identify", and "defeat". This doctrinal task sequence provides the foundation for the concept of operation enabling the GBAD Portfolio to use organic and/or non-organic data to acquire, engage, and negate or destroy aerial threats inflight by kinetic and non-kinetic means. The GBAD portfolio achieves success by employing a dispersed, integrated, and composite defense comprised of layers of GBAD systems protecting the Marine Air-Ground Task Force (MAGTF) operating across the full range of military operations while considering standoff, lethality, range, and effectiveness. .

The Contractor shall be responsible for New Equipment Training (NET) on the following systems; MADIS FoS which includes Future Weapons Systems (FWS) Increment 1 Program of Record (PoR), referred to as MADIS, Light-MADIS (L-MADIS) JUONS and its associated PoR; the Fixed Site FoS which includes Expeditionary-MADIS (E-MADIS), Installation Counter Small Unmanned Aircraft Systems (I-CsUAS) Urgent Statement Operational Need (USON) and its associated PoR, Compact Laser Weapon System (CLaWS), Man Portable C-UAS (MP-CUAS) USON, MRIC,

legacy Advanced Man Portable Air Defense System (AMANPADS); and potential future weapon systems that would modernize the existing systems within the GBAD portfolio.

The following is a discussion of the GBAD portfolio individual systems. The periods of performance listed in Contract Section F and the line item structure detailed in Contract Section B delineate when each program requires NET. PWS Section 7.0, and Tables 2 through 6 provide the projected training schedule. "System Time Events" and "CUAS Family of Systems" mentioned in Section 7 Tables 2 and 4 are allocated periods for programmatic functions as required by the PMO and should not be considered as part of NET events.

3.1 Future Weapons Systems (FWS) Increment 1 Program of Record (PoR)

The MADIS is an integrated system of systems, mounted on board the Joint Light Tactical Vehicle (JLTV), providing an air defense capability On-The-Move (OTM) and At-The-Halt (ATH). It consists of two subsystems, the Mk1 and Mk2, which operate together as a single fighting unit that supports the Low Altitude Air Defense (LAAD) Battalions' GBAD capability. The Mk1 includes a Remote Weapon Station (RWS) launched Stinger Missile, multi-function electronic warfare (EW) capability, direct fire weapon, optic, and a shoulder fired Stinger Missile for dismounted operations. The Mk2 includes a RWS, an integrated Mode 5 Identification Friend or Foe (IFF) interrogator, a Surface-to-Air C-UAS capability, multi-function EW capability, 360 degree radar, direct fire weapon, optic, and Beyond Line of Sight (BLOS) gateway / server capability. Initial Operational Capability (IOC) for the MADIS is planned for 2024 and is defined as one platoon per LAAD Battalion equipped with both MADIS Mk1 and Mk2 subsystems fielded and an initial training package. Full Operational Capability (FOC) for the MADIS is planned for 2028 and is defined as defined as defined as defined as delivery of the full Approved Acquisition Objective (AAO) along with spares and defined training support materials.

MADIS NET package Master Lesson Files (MLF) CDRL F005, which include products in CDRLs F002-F011 and F012-F013, as required, will consist of both operator/crew training, including operator level maintenance instruction, and maintainer NET packages. The Contractor shall be responsible for completing the operator/crew NET package, currently in draft (an estimated 5% of development effort has been completed), and the complete development of the maintainer NET package. All draft documentation for operator/crew NET including the CTTL will be delivered as Government Furnished Information (GFI) at contract award. Figure 1 is the Integrated Program Plan MADIS and depicts the major milestones of the program. Figure 2 is the course structure developed for the MADIS NET Course. The MADIS NET Course shall be 280 instruction hours (35 training business days) or less and shall not exceed 24 students per course. Based on lessons learned from each event, this course may require updates to the training package and duration.

INDIVIDUAL TASKS (Knov	COLLECTIVE TASKS (Crew Events					
(72XX/59XX)	(72XX/59XX)			(72XX)	(72XX/59XX)	
Course Intro/Safety Intro to MADIS System Tour Config/Embark INFRASTRUCTURE JLTV Power Distribution CCS Communications Network PNT	CM262/ CUAS Suite	T <u>RACK</u> MTN KOR-24A	IDENTIFY IFF TacView MFOCs	DEFEAT LW30, XM-914 E1, Ammu MVPA-II, Dismounted Defi Block (2B) TD 16-25 (59X) SYSTEM MAINT Fault Isolation Component Replacement	eat SYSTEM ADMIN CPA Network admin VADSI/ COMMs	OPERATIONS Configuration For Operation Position Roles and Responsibilities Section Kill Chain Operations Platoon Kill Chain Operations Culminating Event

Figure 2 - MADIS Operator NET Course Structure

3.1.1 MADIS Additional Training

MADIS may require additional trainers to support up to four training events (three Operator NET

and one Maintainer NET) depicted in Table 2, option year 4. The Contractor shall provide the required NET training in accordance with the developed NET packages.

3.1.1.1 MADIS Delta Training

Delta Training, as described in paragraph 4.9.1, may be required in option years 4 and 5. This training would consist of no more than 24 instructional hours per event per year to address major Engineering Change Proposal (ECP) changes only. The Contractor shall develop and conduct the NET events as depicted in Table 2.

3.1.2 L-MADIS JUONS and associated PoR

L-MADIS JUONS is an integrated system of systems, mounted on board the Light Tactical Vehicle (LTV), providing an air defense capability On-The-Move (OTM) and At-The-Halt (ATH). It consists of two subsystems, the Mk1 and Mk2, which operate together as a single fighting unit that supports a MAGTF commander's GBAD capability. The Mk1 serves as the command and control vehicle for the L-MADIS team while the Mk2 serves as the Early Warning / Electronic Warfare vehicle with its embedded capability to detect, track, identify and defeat low, slow, small unmanned aircraft systems.

The Contractor shall conduct L-MADIS JUONS NET events utilizing the current NET package. Two NET events, 120 instruction hours (15 days), are planned per year until Jan 2025 as reflected in Table 3 with a not to exceed student count of 24 students per event. The Contractor shall perform minor updates (less than 5% per year) to this package.

L-MADIS POR is similar in capability to the JUONS with the exception of an updated Command and Control (C2) suite, including data processing hardware, and an Ultra-Light Tactical Vehicle (ULTV) as the prime mover vice the LTV. Initial Operational Capability (IOC) for L-MADIS is estimated for 4QFY24 and is defined as delivery and acceptance of three systems. The L-MADIS Figure 3 is the LMADIS POR IPP.

The Contractor shall develop and deliver the Operator NET package MLF CDRL F005, which includes products in CDRLs F002-F011 and F012-F013, as required, for the L-MADIS PoR prior to LMADIS IOT&E. The Contractor shall update an existing Government furnished CTTL and JUON Operator NET package, requiring no more than a 30% update; updates are a result of engineering changes to hardware and are depicted in Figure 4. LMADIS PoR NET shall be 200 instruction hours (25 days) or less and shall not exceed 24 students per course. The first draft of LMADIS Operator course expected delivery is prior to System Verification Test (SVT) #2.

3.1.2.1 L-MADIS JUONS and associated PoR Delta Training

Delta Training, as described in paragraph 4.9.1, may be required in option year 5. This training would consist of no more than 24 instructional hours per event per year to address major ECP changes only. The Contractor shall develop and conduct the NET events as depicted in Table 3.

	System				
Function	1, 2, 4, 5, 8, 9, 10	3*, 7, 11, 12	6	UC2	PoR
Vehicle Platform	Х	х	Х	Х	
Venicie Platform					Х
Power Generation	Х	X	X	X	
		X	X	X	X
Power Distribution	X				
		Х	X	Х	Х
Detect	X				
		X	X	X	X
Power Support	X	X	X	X	X
GPS Location	X	X	X	X	X
Heading (OTM INU)	X				
		X	X	X	X
UHF/VHF Voice/Data Comms	X	X	X	X	X
Voice/Data Link16 Comms	X	X	X	X	X
Defeat	X				
		X	×	X	X
RF Detect	Х				
		X	X	X	X
	×	X	×		
Computing/Network				X	X
				X	X
			X**	X	X
Track/ID	Х	×	X**	V	
-	× ×	×		X	×
Display	X	X	V	×	×
	, v	X	X	X	X
C2 Software	X	×	X		×
				Х	Х

Figure 4 – Changes to L-MADIS PoR

3.1.3 Fixed Site Family of Systems

The Fixed Site FoS is a group of systems individually providing varying levels of air defense capabilities at fixed locations. It consists of Expeditionary MADIS (E-MADIS), the I-CsUAS USON, and its associated PoR, Compact Laser Weapon System (CLaWS), and Man Portable C-UAS (MP-CUAS) USON. E-MADIS and I-CsUAS USON are discussed in this section. MP-CUAS USON and CLaWS are discussed in 3.1.3.4 and 3.1.3.5, respectively.

3.1.3.1 E-MADIS

The E-MADIS provides C-UAS capabilities with multiple fixed RADAR faces, optics, a passive detection system, and an EW capability, ruggedized tablets programmed with a C-UAS software application, and all associated ancillary equipment such as, but not limited to, an all-weather enclosure, network switches, Small form-factor pluggable modules, data and network cables. The Contractor shall deliver minor updates (5% or less) to the E-MADIS NET package, 40 instruction hours (5 days), and conduct NET events as shown in Table 4 not to exceed a student count of 20. The current MLF will be provided as GFI upon contract award.

3.1.3.2 I-CsUAS USON

The I-CsUAS USON provides small C-UAS capabilities through the use of an integrated Commercial-Of-The-Shelf (COTS) tower for detect, track, and identify functions while defeat capability is provided similar to the E-MADIS system.

The Contractor shall augment the I-CsUAS NET, conducted by the COTS tower Original Equipment Manufacturer (OEM), by conducting the NET portion involving the EW defeat capability only. The NET shall not exceed 12 instruction hours (1.5 days) with all required documentation delivered as GFI upon contract award. Anticipated NET events are provided in Table 4 and none will exceed a student count of 20.

3.1.3.3 I-CsUAS PoR

I-CsUAS PoR will provide similar capabilities as the I-CsUAS USON and expects to have a PoR milestone decision in FY23 with a fielding decision in FY24. NET development and conduct of events, expected not to exceed 40 instruction hours (5 days), is an option and if exercised, Instructor and Key Personnel Training (I&KPT) along with existing training documentation would be provided to the Contractor as GFI. In the case where the option is exercised the NET team shall deliver a MLF, CDRL F005, which includes products in CDRLs F002-F011 and F012-F013 as required and shall develop and deliver minor updates (less than 5% per year) to this package. I-CsUAS NET events are no more than one event per year starting in FY24, as shown in Table 4. Figure 5 is the I-CsUAS PoR IPP. Student count will not to exceed 20.

3.1.3.4 Man Portable C-UAS (MP-CUAS) USON

Man Portable C-UAS USON is a capability proposed to detect and defeat small Unmanned Aircraft System(s) (sUAS) specifically focused on Commercial-Of-The-Shelf (COTS) Group 1-2 sUAS platforms. It is expected to be released and fielded in FY22 and have passive detection capability with both kinetic and non-kinetic means of defeat

The Contractor shall develop all training package MLF CDRL F005, including products in CDRLs F002-F011 and as required F012-F013, utilizing existing component training material where appropriate, and conduct NET for man portable C-UAS with no more than 12 NET events not to exceed 40 instructional hours per event required as shown in table 4, and a not to exceed student count of 20 students per event.

3.1.3.5 Compact Laser Weapon System (CLaWS)

CLaWS supports a JUONS within the GBAD portfolio as a containerized Line of Sight (LOS) directed energy weapon system with a 5kW laser for CUAS engagements with operation expected to extend from FY23 to FY25. CLaWS includes a tracking system with a mid-wave infrared camera, optical tracker, and laser rangefinder, allowing the operator to acquire and track moving targets. This system also provides high resolution imagery for the operator to perform intelligence, surveillance, and reconnaissance operations to support base defense. Naval Surface Warfare Center (NSWC) Dahlgren developed the NET package MLF and conducts training with the Army PD CRAM expected to conduct the C2 (FAAD) training. The Contractor shall provide an observer for NSWC Dahlgren conducted training events and deliver an After Instruction Report; there are eight anticipated NET events through FY25 as shown in Table 4 with 80 instructional hours per event with a maximum student count of 20 per event.

3.1.4 Stinger Training System (STS)

Stinger Training System (STS) is Virtual Reality Task Trainer. STS supports operational and Tactical Stinger proficiency training that utilizes a Virtual Reality solution with high fidelity target models and terrains. The STS will be operated within a clasroom environment or can be transported and operated at field locations. The STS Virtual Stinger Trainer software allows instructors to monitor student performance, assess and provide guidance, and develop additional scenarios for training. The STS comes with default scenarios and has a feature that allows users to create additional scenarios as needed. The STS draft NET package will be delivered as GFI upon contract award. The Contractor shall develop and deliver minor updates (maximum of 5%) to the NET as well as conduct the NET, which shall not exceed 40 instruction hours (5 days) per event with a maximum student count of 20 students per event. The validation of the STS NET package will be provided by the OEM. Verification will be conducted by an authorized Government representative prior to the execution of NET. The planned events are set forth in Table 5 which is the STS IPP.

3.1.5 MRIC

MRIC is a medium range cruise missile defense system. Currently in the prototype stage, MRIC system consists of the Ground/Air Task Oriented Radar (G/ATOR), a subset of Common Aviation Command and Control System (CAC2S) components, and surface-to-air launcher. The MRIC capability is anticipated to deploy as a battery or independent platoon(s) to defend permanently and operationally fixed sites in the designated area of operation. Figure 7 is the MRIC IPP.

The Contractor shall develop and conduct the MRIC NET package which consists of operator NET with trouble shooting and operator level maintenance content. The MRIC NET package will consist of the existing subsets of the CAC2S, 120 instruction hours (15 days), and G/ATOR, 120 instruction hours (15 days) courses; however, the Contractor will only be required to develop the MRIC portion, which shall not be more than 40 instruction hours (5 days), of this package including, but not limited to, emplacement and displacement of the launcher, loading and unloading the launcher, as well use of the operations interface equipment. Student count shall not exceed 20 students. A CTTL will be provided as GFI upon contract award.

4.0 Overall Performance Requirements

The Contractor shall analyze, design and develop, implement, evaluate, support, and manage the PM GBAD portfolio training products and deliver training. For this effort, the Contractor shall use NAVMC 1553.1A Marine Corps Instructional Systems Design/Systems Approach to Training and Education Handbook; and MCO 1553.2B Management of Marine Corps Formal Schools and Training Detachments.

The number of events and training duration in Tables 2 through 7 are expressed in notional business days. If changes to the schedule are required, the COR will notify the Contractor fifteen (15) business days prior to the training event.

The Contractor is required to deliver the following training, including but not limited to: New Equipment Training (NET), Delta Training based on Engineering Change Proposals (see 4.9.1) and on occasion, Pilot Training (see 4.9.2). The Contractor shall provide SME and program management

NET Performance Work Statement (PWS)

support in accordance with this PWS.

The Contractor shall incorporate Analysis, Design, Development, Implementation and Evaluation (ADDIE) Agile Instructional Model in accordance with NAVMC 1553.1A. Figures 8 and 9 summarize the ADDIE process while Table 1 shall be used as guidance for division of product development. The exit and entrance criteria to divisions within each phase of the ADDIE's model should include government involvement.

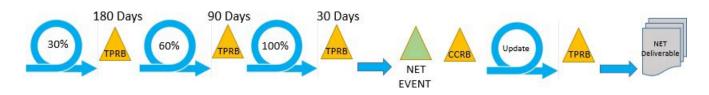
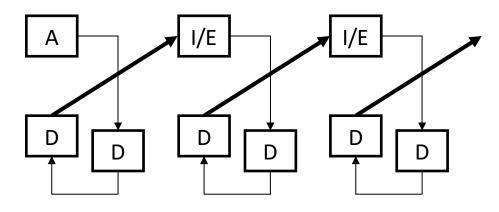


Figure 8 - Notional Delivery/Review Cycles



A= Analyze D= Design D= Develop I/E= Implement /Evaluate/Test

Figure 9 - ADDIE AGILE Model

Table 1: The ADDIE Agile New Equipment Training Curriculum Development

Item	Deliverable	30% Mark	60% Mark	80 % Mark	100% Mark
1	Critical Training Task List (CTTL)- Learning	Outline	Draft 1	Draft 2	Government Approval
2	Course Map and Design	Outline	Draft 1	Draft 2	Government Approval
3	Test Package	Outline	Draft 1	Draft 2	Government Approval
4	Master Lesson File (MLF) – Operator- Maintainer	Outline	Draft 1	Draft 2	Government Approval
4a	Lesson Plan (LP) Outline				Government Approval
4b	Media/Instructional Visual Aids	Outline	Draft1	Draft 2	Government Approval
4c	Instructor Guide	-	-	Draft	Government Approval

Item	Deliverable	30% Mark	60% Mark	80 % Mark	100% Mark
4d	Trainee Guide	Outline	Draft 1	Draft 2	Government Approval
4e	Analysis Report (LAR)/ LAWS and LOWS	Outline	Draft 1	Draft 2	Government Approval
4f	Operator risk Assessment Worksheets (ORAW)		Draft 1	Draft 2	Government Approval
4g	Instructor Preparation Guide	Outline	-		Government Approval
5	Concept Card	Outline	-		Government Approval
6	Curriculum of Instruction /Syllabus	Outline	-		Government Approval
7	Updates	Outline	-		Government Approval

4.1 Data Management, Quality Assurance and Delivery

The Contractor shall use a configuration management process to include specific labeling and numbering schemes for documents and files, identification between documents and files, tracking scheme, versions and releases, and change control identification. Any documents or files delivered to the Government shall be in accordance with the GBAD Configuration Management Plan (CMP).

The Contractor shall have a quality assurance process for curriculum development that includes the content approval reviews between the content writer and developmental editor for proofread, copy right review, and the final 10% QA review by the training and curriculum manager before delivery to client.

The Contractor shall maintain a structure for custom workflows and document/artifact collaboration, distribution, and storage on the centralized, unclassified Marine Corps Enterprise Information Technology Services (MCEITS) Data Management System (DMS) site and assist with customizing SharePoint features. The Contractor shall post MADIS NET CDRL products on the MCEITS DMS.

4.2 **Program Management**

The Contractor shall establish and maintain program management practices throughout the life of this contract. Program management practices shall include, but are not be limited to, visibility into the Contractor's organization and techniques used in managing the program, including subContractor and data management. The Contractor shall plan and monitor the execution of all tasks and shall notify the COR of contract issues that prevent the Contractor from meeting requirements. The Contractor shall submit a monthly performance status in accordance with the Monthly Status Report (MSR), CDRL B001. Contractor format is acceptable; however, to ensure information compatibility, the Contractor shall ensure all CDRLs, data, correspondence, etc. are provided in a format approved by the receiving Government representative.

4.3 **Post Award Conference**

The Contractor shall host a Post Award Conference (PAC) at the location designated by the Government no later than 20 calendar days after contract award. The purpose of the PAC is to achieve a clear and mutual understanding of the contract operations and performance. The Contractor, at a minimum, shall introduce their team structure and personnel and present program implementation processes to be utilized under this contract. The Contractor shall provide Meeting Minutes, Meeting Agenda, and Briefing Material in accordance with CDRLs B002, B003, and B004 respectively.

4.4 Training Guidance Conference

The Contractor shall host a Training Guidance Conference (TGC) no later than 30 calendar days after initial contract award and exercise of each option at a location designated by the Government. This may be in person or by other means. The purpose of the conference is to review the Contractor's draft Training Program Plan (TrPP) and identify and resolve potential problems. Agreements reached in the TGC shall be reflected in the final TrPP. The Contractor shall provide Meeting Minutes, Conference /Meeting Agenda, and Briefing Material in accordance with CDRLs B002, B003, and B004 respectively. The Contractor shall provide updates to the Government of significant changes to personnel and potential impacts that may impede program implementation processes and provide mitigation strategies to ensure uninterrupted achievement of program objectives in accordance with the CDRL B001.

4.5 Meetings, Formal Reviews, Working Groups, and Technical Reviews

The Contractor shall develop meeting agendas and briefing material associated with Training Product Reviews, In-Progress Reviews, working groups and conduct of GBAD systems portfolio NET briefs in accordance with the Meeting Agenda and Briefing Material, CDRLs B003 and B004 respectively, and document the sessions with meeting minutes in accordance with the Meeting Minutes, CDRL B002. This development of the agenda and materials shall be performed with Government personnel advising on content.

The Contractor shall document action items, prior to adjournment of all reviews, to include assignment of responsibilities and due dates. All action items shall be included as part of the review minutes. The Contractor shall host a Training Products Review Board (TPRB) after each NET conduct, chaired by the Government, within 7 calendar days of receipt of the Government comments against a deliverable as dictated in the applicable CDRL unless otherwise directed by the Government. The TPRB shall be conducted in person, via web-based meeting applications or via teleconference. Upon conclusion of the TPRB and adjudication of comments, the Contractor shall incorporate the Government comments and submit the final document as directed for the applicable F-series CDRLs.

4.6 Configuration Control and Technical Changes Report – Study Services

The Contractor shall attend bi-weekly GBAD Configuration Control Board (CCB) meetings. The Contractor shall receive and assess Government approved hardware and software Engineering Change Proposals (ECPs) and Design Change Notices (DCNs) to determine the impact to NET materials and the conduct of instruction. At a minimum, the Contractor can expect the MADIS and C-UAS integrator(s) to provide quarterly cyber security updates and an annual software maintenance update to the baseline configuration through the ECP process which may require an update to the NET package. Upon receipt of the ECPs or change requests, the Contractor shall analyze the information for potential changes necessary to the training curriculum. The Contractor shall report on the scope of NET material impacts and propose the necessary changes to the design and delivery

of NET to the Government for approval prior to implementation in accordance with Request for Information, CDRL B005. The Government shall provide comments to the Contractor within 14 calendar days of receiving this data deliverable. If changes are required, the Contractor shall resubmit the deliverable no later than 7 calendar days after receipt of Government comments.

The Contractor shall include in the report the required GFI resources needed to implement, and an expected schedule to complete the changes. The Government will assess the proposed changes and determine if the changes are significant enough to warrant a verification of content and pilot of the revised lessons. Once proposed training changes are approved by the Government, the Contractor shall ensure changes are fully incorporated in the NET materials in a timeline mutually agreed to by the Government and the Contractor. Upon completion of this update, the Government will determine if a delta NET event is required. The validation and verification are similar to Government approval of changes to curriculum. This assesses the training material to determine if it is within the course structure framework, and the Contractor provides justification for changes to the training content that ensures content accuracy with no changes to the course flow.

4.7 Data Management

The Contractor shall support the Government in management of all NET documentation and source files in their native format within the Public Key Infrastructure (PKI) protected, centralized, unclassified MCEITS DMS. The Government shall have unlimited rights to technical data developed or delivered under this contract.

4.8 New Equipment Training (NET) Integrated Master Schedule (IMS)

The Contractor shall develop and maintain a contract level Integrated Master Schedule (IMS) in accordance with CDRL B006 for all efforts to be performed under this contract. The IMS delivered with CDRL B006 will serve as the initial Performance Measurement Baseline – any required updates will be made to this initial version. The Contractor's initial IMS shall:

- Define all tasks required to execute the contract base period.
- Define top-level task required to execute contract. These top-level tasks shall be expanded into appropriate detailed tasks upon option CLIN execution.
- Define the program's critical path.
- Define all internal and external schedule dependencies and resources (hours and material dollars) necessary to execute the contract IMS.
- Include any sub-Contractor tasks required to accomplish contract execution.

The Contractor shall ensure that all NET tasks are identified in the Contractor IMS for the life of the contract. The Government must approve in advance all changes to the baseline IMS.

4.9 Training Products and Services

The Contractor shall provide technical and analytical services, and instructional support to develop, maintain, and deliver performance-based, criterion-referenced Operator and /or Maintainer NET and other training products for the GBAD Portfolio.

Training products and services shall include the formal delivery of instruction to gaining units in conjunction with fielding, documenting curriculum deficiencies noted during NET, analyzing and resolving training deficiencies, and adjudicating deficiencies with the Government via the Training Products Review Board.

Training products and services shall include updates of training products to incorporate Government approved hardware and software configuration changes which have been implemented. The Contractor shall propose required changes to training delivery strategies, provide inputs to NET schedules, and deliver onsite NET. The Contractor will use MIL-HDBK-29612/2A, Instructional Systems Development/Systems Approach to Training (SAT) and Education and NAVMC 1553.1A, Marine Corps Instructional Systems Design/Systems Approach to Training and Education Handbook. The Government will have final approval on the format of all curriculum products and may direct minor deviations from these references as required.

The Contractor shall propose instructional technologies to enhance instruction, minimize reproduction of course materials, and to support refresher training. Future revisions or updates shall not deviate in design from the Operator and /or Maintainer NET or other training products packages delivered for fielding without prior consent from the Government.

4.9.1 Delta Training

Delta Training is the training of new knowledge or skills required as the result of a change in procedures, equipment or software modifications, or the introduction of new technologies integrated into existing or legacy systems. Delta training targets experienced users, is short in duration, and typically tailored to the specific knowledge or skills required. Delta Training packages shall be developed and delivered in a similar fashion to NET.

4.9.2 Pilot Instruction

The Contractor shall provide pilot instruction for newly developed courses. This will be the presentation to a class of any materials for a new or updated system NET package. Upon completion of the pilot course(s), the Contractor shall make any required updates and incorporate any feedback provided to further refine the NET package to the final product.

4.10 Training Personnel

The Contractor shall provide qualified personnel, including the Training Manager, Curriculum Manager, Instructional Systems Designer, Lead operator and Maintainer Instructors, and Senior Instructors who have advanced knowledge of the subject and experience in training learners in a given particular subject area. Instructors shall have the experience and capability to develop an instructional plan and administer assignments and evaluations to trainees. Instructors must be part of curriculum development team and provide their feedback as part of the After Instruction Report.

4.10.1 Training Manager

The Contractor shall appoint and provide a Training Manager as the single Point of Contact (POC) for training, courseware and product development, revisions, updates, and implementation matters. The duties of the Training Manager shall include ensuring the training products are developed to instructional design principles, revised, and updated to support instructionally sound training outcomes. The Training Manager shall ensure the training products incorporate curriculum, design or procedural changes or both, and ensures instructors are adhering to the training schedule and lesson plans. The Training Manager shall coordinate and supervise the conduct of NET. The following qualifications and experience are required:

1. Have a minimum of five (5) years of proven experience as a project manager in the

development and presentation of military training programs. (Required)

- 2. Possesses a bachelor's degree. (Required)
- 3. Master's degree or Program Management Professional (PMP) certification is highly desirable, but not required.

4.10.2 Curriculum Manager

The Curriculum Manager shall have background in project management, at least three years of experience as a curriculum manager, with a Curriculum Development Course completion certificate completed within the past five years (USMC Curriculum Development Course preferred). The Curriculum Manager shall ensure training products are developed in accordance with Systems Approach to Training and Education/Instructional Design and adult learning principles and format requirements. The Curriculum Manager shall also maintain version control of training products throughout the design, review and revisions cycles. The Curriculum Manager directly supports the Training Manger by providing technical expertise in the design and development of training products. The following qualifications and experience are required:

- 1. Have a minimum of five (5) years of experience as a Lead or Senior Curriculum Developer for a military and/or civilian technical training program. (Required)
- 2. Successful completion of military curriculum developer courses, completion of a military Formal School Instructor Course or equivalent industry recognized technical training instructor program. (Required)
- 3. Have a minimum of one (1) year of experience as an Academics Chief or Curriculum Manager for a military program(s). (Required)

4.10.3 Instructional Systems Designer (ISD)

The Contractor shall provide an Instructional System Designer (ISD) who shall have sufficient proficiency in course design and development, preferably in vocational or technical education, with at least a Bachelor's degree from an accredited university. The ISD will plan, coordinate, and develop components of instructional design, course map, structure, and oversee and quality control curriculum through the curriculum development, execution and evaluation process. The following qualifications and experience are required:

- 1. Possesses a bachelor's degree (or higher degree) in instructional systems design. (Required)
- 2. Have a minimum of three (3) years of experience in design and development of instructional programs. (Required)

4.10.4 Course Team Leads

The Contractor provided Team Leads shall have proficiency in the design, development, and delivery of military instruction, including technical language and terms associated with the operation and maintenance of the GBAD portfolio. The required proficiency for Team Lead is defined as successful completion of military curriculum developer courses, completion of a military Formal School Instructor Course or equivalent industry recognized technical training instructor program. Instructors shall be familiar with tactical employment of weapons systems supporting the mission of Low Altitude Air Defense (LAAD) as well as operator/field-level maintenance tasks. The Contractor shall designate a primary and alternate Team Lead for each period of instruction in support of NET and ensure the cadre of instructors are adequate to support concurrent, dispersed NET events and

curriculum management activities as described in the PWS. The following qualifications and experience are required:

- 1. Successful completion of military curriculum developer courses, completion of a military Formal School Instructor Course or equivalent industry recognized technical training instructor program. (Required)
- 2. Have a minimum of one (1) year of experience as operator or maintainer training team leads as applicable, for similar military program(s). (Required)
- 3. The Operator Course and Maintainer Course Team Leads shall have instructional design knowledge and experience is highly desirable but not required.

4.10.5 Operator Instructors

The Contractor shall provide Operator Instructors who meet the following criteria:

- 1. Have a minimum of three (3) years of proven experience as an instructor in a Formal Learning Center, military, or technical training program
- 2. Successful completion of a military Formal School Instructor Course and military curriculum developer courses, or completion of or equivalent industry recognized technical training instructor program

In addition to the above, the collective capability of the Operator Instructor Team (Primary and Alternate instructors) shall have expertise in LAAD Operations by having served in all of the following:

- 1. Designated Senior Instructor per Marine Aviation Weapons and Tactics Squadron 1 (MAWTS-1), Control, and Communication (C3) Course Catalog
- 2. LAAD Enhanced/Tactics Instructor (LETI) or Senior Instructor
- 3. LAAD or Air and Missile Defense (AMD) Platoon Commander, Team Lead, Section Leader
- 4. Tank, Light Armored Vehicle (LAV), Avenger Master Gunner

4.10.6 Maintainer Instructors

The Contractor shall provide Maintainer Instructors who meet the following criteria:

- 1. Have a minimum of three (3) years of proven experience as an instructor in a Formal Learning Center, military, or technical training program
- 2. Successful completion of a military Formal School Instructor Course and military curriculum developer courses, or completion of or equivalent industry recognized technical training instructor program

4.10.7 Instructors

In addition to the above, the collective capability of the Operator and Maintainer Instructor Teams (Primary and Alternate instructors) shall have technical expertise in all of the following:

- 1. Tactical Data Framework (TDF) setup and integration
- 2. Tactical Data Link (TDL) with Link-16 (RF and JREAP A/B/C) and Link-11 A & B installation, operations, and maintenance

- 3. Command and control communications systems installation, operations, and maintenance
- 4. Tactical data network administration
- 5. Turret-based, direct fire weapons platform installation, operations, and maintenance
- 6. Electro-optic/infrared, laser systems installation, operations and maintenance
- 7. Air defense radar systems and associated IFF equipment installation, operations, and maintenance
- 8. Maintenance management

4.11 Training Program Plan (TrPP)

The Contractor shall prepare and deliver a TrPP which describes the Contractor's plan of action for completing the revisions and updates of Operator and Maintainer training products and the coordination for and conduct of planned training events. The Government will use the TrPP to assess the Contractor's approach to curriculum development. Per the CDRL F001, the plan should address Contractor training organizational structure, organizational interfaces with the Government, training development methodology, key Contractor training personnel, Contractor training development Plan of Action and Milestones (POA&M), Contractor activities, Contractor training deliverable schedule (draft and final), scheduled meetings, In-Process Review (IPR) schedule, level of effort, training related travel, and Contractor requested data for all training deliverables. The TrPP shall identify where training related information can be found in the Contractor training IMS provided to the Government. The plan shall be a living document and updated by the Contractor as per the CDRL. The Contractor shall prepare a TrPP in accordance with CDRL F001.

4.12 Training Materials Development

4.12.1 Critical Training Task List (CTTL)

Using the Government provided Master Operations and Maintenance Job Task Data, the Contractor shall update and deliver a final operations, maintenance/administration CTTL for all systems.

The CTTL shall be performance based and identify those tasks selected for training development and shall include the job tasks, sub-tasks, and steps necessary to operate, maintain, and support the GBAD portfolio. Task data shall include task selection criteria to include, but not limited to, difficulty, importance, frequency and criticality, and the conditions and standards by which successful performance will be measured. Each task and sub-task shall have an alphanumeric numbering scheme to support traceability and curriculum management.

4.12.2 Learning Analysis Report (LAR)

The Contractor shall develop and deliver a LAR in accordance with CDRL F003, Learning Analysis Report (LAR). The LAR shall identify the terminal learning objectives (TLOs) and enabling learning objectives (ELOs), instructional methods, learning events, training tools and aids, and media planned for instructional delivery for GBAD portfolio NET. Using Critical Job Task analysis data, the Contractor shall analyze the selected job tasks and sub-tasks to determine the required knowledge, skills and abilities (KSAs) necessary to achieve successful task completion. The Contractor shall use learning analysis data to develop appropriate terminal and enabling learning objectives, establish performance criteria related to tasks and objectives, and group and sequence objectives to support course design. A matrix may be used to show the commonality of learning objectives which may span across both the GBAD Portfolio courses. Each task and associated TLOs and ELOs shall have

an alpha-numeric numbering scheme to support traceability and curriculum management. Each task and associated TLOs and ELOs will have an alpha-numeric numbering scheme to support traceability and curriculum management.

The Contractor shall determine the appropriate methods and instructional media to be used and provide all method and media analysis data to support instructional delivery. The Government will approve the proposed methods and media approach prior to training development.

4.12.3 Instructional Media Requirements Document

The Contractor shall develop an Instructional Media Requirements Document (IMRD) to address changes identified in the revised LAR. The Contractor shall continue to employ instructional methods, learning events, training tools/aids, and media previously used for instructional delivery. However, if changes to current method and media are required to accommodate new or revised training objectives, the Contractor shall describe their methods and media selection methodology, provide all methods and media analysis data, and propose primary and alternate methods and media requirements to support instructional delivery of critical training tasks. The Government will review the proposed methods and media approach, and if acceptable to the Government, will provide approval prior to training development. The IMRD shall be delivered in accordance with CDRL F012 and F013.

4.12.4 Training Visual Aids, Slides, Videos

The Contractor may propose development of training videos for updating an existing course due to engineering changes or during the development of a course when the Contractor believes sufficient complexity of individual training tasks exist. Any video shall support and/or enhance on the job performance and unit sustainment training (acceptable formats include .mp4, .mov, .flv, .wmv, .avi) that are web-based. No more than five minutes worth of video per 40 instructional hours shall be scoped with a maximum file size per video not to exceed 500 MB and codec H264.

The Contractor shall first provide an Instructional Media Design Package to provide the scope, design, and development approach for the video for Government review and approval. Upon Government approval, the Contractor shall develop the Instructional Media Package, CDRL F012 as applicable, as well as CDRL F013, which contains the video products (prototype, final) and all source audio and visual data files required to maintain the videos and provide life cycle support for them.

4.12.5 Training Test Package

The Contractor shall deliver a Training Test Package for each GBAD Portfolio course of instruction in accordance with CDRL F004, Training Test Package. The Contractor shall ensure the test package includes written test items and a performance evaluation checklist for the examination of an individual's KSAs, and achievement of TLOs and ELOs based upon the LAR and Lesson Plans (CDRL F003 and F005, F006 respectively). For the written test items, the Contractor shall develop knowledge-based questions and form a test bank. Each cognitive ELO shall have, at a minimum, three knowledge-based questions in the curriculum package test bank. The correct response shall be indicated for each test item in the test bank. The test bank shall provide traceability from each test item to the TLOs and ELOs and the critical task from which it was derived. The test items shall be written to evaluate the student's comprehension of knowledge-based learning objectives. These

written test items shall consist of multiple choice, matching, and fill-in-the-blank questions. True-False questions shall be kept to a minimum of one question per lesson, and the Contractor shall provide justification for using true and false questions. Each set of test items developed for a single learning objective should be unique, avoiding reverse design or distractors that are too similar or obvious.

The Contractor shall develop a series of quizzes and associated answer keys for each course. The quizzes shall be administered after major content sections as deemed instructionally appropriate. Quizzes shall be administered to determine student comprehension before proceeding to the next block of instruction. Quizzes shall not exceed 20 questions nor have less than one question per knowledge based ELO. Questions shall be drawn randomly from the test bank. For the performance-based portion of the Test Package, each learning objective will be assessed using performance evaluation checklists. The Contractor shall develop the performance evaluation checklists to evaluate the student's ability to perform specific Operator and Maintainer task and subtasks. The Government will provide the basic format to be used. The Contractor shall develop the performance. The evaluator copy shall contain instructions to the evaluator and student and the student copy shall contain only instructions to the student.

4.12.6 Operator and Maintainer NET Master Lesson Files (MLF)

The Contractor shall develop, maintain, and deliver MLF CDRLs F005 and F006 for each lesson for each GBAD portfolio NET package based on the LAR and according to the planned Curriculum Outline of Instruction (COI), as explained in paragraph 4.12. The Contractor shall develop Operator and Maintainer lesson materials to support the instructional requirements to meet the approved course learning objectives. The Contractor shall deliver each product of the MLF adhering to NAVMC 1553.1A Marine Corps Instructional Systems Design/Systems Approach to Training and Education Handbook. All MLF products shall be packaged by lesson and executable file using Microsoft Office Products. The Government will review and assess all products to ensure they meet USMC format and data points using the NAVMC 1553.1A. Each MLF shall contain the items listed in paragraphs 4.12.5.1-4.12.5.10 below.

4.12.6.1 Learning Analysis Worksheet (LAW)

The Contractor shall develop and deliver a LAW in accordance with CDRL F005, Operator Master Lesson Files and CDRL F006, Maintainer Master Lesson Files. The LAW contains the KSAs derived from the LAR and required to execute each task associated with that lesson.

4.12.6.2 Learning Objective Worksheet (LOW)

The Contractor shall develop and deliver a LOW in accordance with CDRL F005, Operator Master Lesson Files and CDRL F006, Maintainer Master Lesson Files. The LOW contains the TLOs and ELOs derived from the LAR, Test Items supporting each ELO, and identifies the Methods and Media required to support the ELO.

4.12.6.3 Concept Card

The Contractor shall develop and deliver Concept Cards in accordance with CDRLs F005, Operator Master Lesson Files and F006, Maintainer Master Lesson Files. One Concept Card shall be produced for each lesson. The concept card describes the outcome of the lesson, contains the methods, media, academic hours, student to instructor ratio, TLOs and ELOs.

4.12.6.4 Lesson Plan

The Contractor shall develop and deliver an Operator/Maintainer Lesson plan in accordance with CDRL F005, Operator Master Lesson Files and CDRL F006, Maintainer Master Lesson Files. The lesson plan shall include course and lesson titles and be numbered to reflect its appropriate sequence in the course of instruction. Header information shall include the title and address of the GBAD Program Office. The content of the lesson plan shall contain the required instructor notes, graphics, media and time cues, and transitions to support effective, consistent delivery of content and enable student mastery of the learning objectives.

4.12.6.5 Trainee Guide

The Contractor shall develop and deliver Operator and Maintainer Trainee Guides for each lesson in accordance with CDRL F005, Operator Master Lesson Files and CDRL F006, Maintainer Master Lesson Files. The student guide shall duplicate the Operator and Maintainer lesson plan, except for all instructor notes, media cues, instructor instructions and time cues.

4.12.6.7 Operation Risk Assessment Worksheets (ORAW)

The Contractor shall deliver the ORAW in accordance with CDRL F005, Operator Master Lesson Files and CDRL F006, Maintainer Master Lesson Files. The ORAW shall be produced for each lesson that contains practical application, lab/maintenance exercises, and field exercises. The ORAW shall identify possible hazards to personnel and equipment, implement controls and hazard mitigation strategies, and document cease training criteria.

4.12.6.8 Instructor Preparation Guide (IPG)

The Contractor shall develop and deliver the IPG for each lesson file in accordance with CDRL F005, Operator Master Lesson Files and CDRL F006, Maintainer Master Lesson Files. The IPG shall provide the instructor with information that is critical to the preparation for implementing the lesson file. The IPG shall contain detailed information so that the instructor understands what resources are necessary for the lesson file.

4.12.6.9 Curriculum Outline of Instruction (COI)

For each course of instruction, the Contractor shall maintain and deliver a COI in accordance with CDRL F007, Operator and Maintainer Curriculum Outline of Instruction. The COI shall identify the training schedule of events and include a breakdown of individual topics indicating the purpose, learning objectives, time allotted for each session, academic hours by type of instruction, instructional materials required, facility and instructor requirements, media and training support equipment, reference materials, type of instruction (practical exercise, demonstration, lecture), tools and Test, and Measurement and Diagnostic Equipment (TMDE) required for each period of instruction. The Contractor shall also maintain and deliver updated COI as necessary.

4.12.6.10 Job Aids

The Contractor shall develop and deliver Operator and Maintainer job aids in accordance with CDRL F008, Operator and Maintainer Job Aids. Job aids typically address the completion of critical and complex tasks for which additional support will enhance human performance of mental and physical human-system interfaces and minimize safety risks. Contractor proposed job aids will be approved by the Government prior to development. Examples of relevant job aids include, but are not limited

to, those which provide quick reference or support completion of set-up, operations, critical maintenance, and displacement tasks, and where access to Technical Manual (TM) is limited. Job aid types include, but are not limited to: hard cards, pocket checklists, procedural guides, worksheets, kneeboards, and additional supplemental student materials. Job aids shall be legibly printed on subdued colored medium weight and weatherized (example: treated paper or laminated) card stock paper able to withstand the detrimental effects of the outdoor environment (direct sunlight, water, humidity, and other weather related incidents).

5.0 Conduct of New Equipment Training (NET)

The Contractor shall conduct GBAD NET courses employing various instructional methods including lectures, demonstrations, practical applications, and pilot training sessions prior to NET delivery. Courses shall support developmental and operational test events; Instructor and Key Personnel Training (I&KPT); and GBAD portfolio fielding's. I&KPT may be tailored to the target audience and shall also cover classroom set up and preparation, operational risk management strategies, unique instructional and facilitation delivery techniques, and use or application of any training aids or devices.

The instructors shall present and deliver the training in accordance with the techniques of military instruction per NAVMC 1553.1A, Marine Corps Instructional Systems Design/Systems Approach to Training and Education Handbook. The Maintainer course shall be designed as multiple MOS dependent blocks of instruction supplemented with facilitation techniques, classroom activities, and visual media to reduce training days and informal lecture classroom time.

Training days shall be no more than eight (8) hours in duration, and shall be conducted Monday through Friday per the COI unless prior approval is granted by the Government. No less than seventy-five (75) percent of each course shall be practical application hands-on training. The student to instructor ratio shall not exceed 20: 2 (Primary/Alternate) for lectures and shall not exceed 10: 1 for hands-on training, practical exercises and practical application.

The Contractor shall utilize the principle end item to the maximum extent possible. In addition, the use of MADIS Desktop Trainer (MDT), MADIS Gunnery Trainer (MGT), and the MADIS Virtual Trainer (MVT), developed under separate efforts, can be utilized to substitute the principle end item if the Government has accepted delivery of the systems in time for employment during NET. Maximum class size for each course is one LAAD platoon of twenty-four (24) students. At the conclusion of Operator and Maintainer NET, students that have successfully met the academic requirements shall receive a certificate of completion from the Contractor that is signed off by both the Contractor and a representative from the Government. The final training day length mentioned above is subject to change and is contingent upon final approval by the Government of CTTL and course design.

Prior to each NET event, all courseware and applicable technical manuals and reference material shall be updated on the Government furnished tablets. The Marines will complete the Instructor Rating Form (IRFs) on these tablets as well, the results of IRFs shall be captured in the After Action Report (AAR).

Instructors will be evaluated by both the Government and the target audience on their knowledge (lesson content) and proficiency (platform techniques, communication skills, questioning techniques, employment of media, and instructor and student interaction) at each scheduled training

events throughout the conduct of fielding. Evaluation criteria will be in accordance with this PWS, NAVMC 1553.1A, and Lesson Observation Checklist.

The Contractor shall conduct a Culminating Training Event (CTE) for both the Operator and Maintainer courses based on approved course design for GBAD portfolio. The CTE shall be conducted on the last day of training unless otherwise directed. Each CTE may be tailored to the individual unit mission and shall not exceed 16 instruction hours.

The CTE will enable operators and maintainers to demonstrate mastery of key tasks they learned during NET in a unit/crew environment. Operators and maintainers shall be presented a scenario and execute a series of predetermined tasks based on course learning objectives. The Contractor shall propose use of training systems for CTE. These tasks shall require operators and maintainers to work as individuals and to collectively perform duties associated with set-up, operations, maintenance and tear-down of the MADIS or C-UAS platform.

The CTE shall include a pre-brief, drill event, and debrief. The Contractor, in conjunction with the Government, shall determine the tasks to be executed. The Contractor shall develop a CTE Instructor Preparation and Conduct Guide to support preparation, timely set up and conduct of the event CTE. The guide shall include individual and collective checklists to enable assessment of personnel during the conduct of the CTE. The Contractor shall deliver the CTE Instructor Preparation and Conduct Guide in conjunction with the course Master Lesson Files (CDRLs F005, F006).

The CTE checklists shall include those tasks, drawn from the curriculum objectives that the operators and maintainers would logically be expected to perform in the performance of their duties during a mission. The CTE checklists shall be used to assess mastery of those tasks and include instructor observations and recommendations for remediation and follow-on practice. The observations captured during the CTE shall be presented to the participants during the debrief portion of the CTE.

The Contractor shall prepare two copies of the completed checklists upon conclusion of the CTE debrief. One copy will be provided by the Government to the unit and the original shall be submitted to the Government in conjunction with the After Instruction Report (CDRL F010).

5.1 Course Material Production

The Contractor shall provide the following to support NET:

- Printed or digital copies of Operator and Maintainer Job Aids (minimum one (1) per system)
- Printed or digital copies of course materials for each student to include course syllabus, trainee guide, student handouts, and any supplemental materials. If printed, student materials shall be in color and bound.
- Printed or digital Functional Block Diagrams from the Technical Data Package (one per system)
- Printed Master Lesson Files for Instructor, Alternate Instructor, and one observer
- Printed or digital written quizzes and performance examinations for each student; each quiz shall have an associated test key
- CTE Instructor Preparation and Conduct Guide and a CTE Worksheet
- Printed or digital Instructional Rating Forms for each student
- Printed End of Course Critiques (EOCC) for each student

- All products, digital or printed, shall be appropriately marked in accordance with the classification marking policy including, but not limited to, marking Controlled Unclassified Information.
- A Master digital copy with course map, design, and all MLF materials shall be delivered to the gaining unit upon completion of training.
- Student Attendance Roster; containing the student's full name, rank and military command. The Contractor shall ensure all students are accounted for every day. The Student Attendance Roster shall have the dates and name of the training course. The Student Attendance Roster shall be submitted with the Course Completion Report to the Government.

The Government will coordinate with each gaining command for use of local resources, classroom space and ranges. Each gaining command will provide the below in sufficient quantity for each NET event:

- MADIS and C-UAS to include ancillary equipment
- General Purpose Tool kits for Maintainer training
- Shop Support Equipment for Maintainer training
- Shop Safety, Personal Protective Equipment (PPE) for Operator and Maintainer training.

5.2 Course Syllabus

The Contractor shall produce and deliver a syllabus, either hardcopy or electronic, to each student upon the first day of training for each course in accordance with CDRL F009, Course Syllabus. Course syllabi shall contain course objectives, the daily training schedule, criteria for successful completion, names of instructors and instructor contact information.

5.3 Instructional Rating Forms

The Contractor shall reproduce and issue IRFs provided by the Government to be completed by each student immediately following each lesson and shall be submitted to the Government in conjunction with the CDRL F010. The use of automated real time responses and capability that supports data analysis of the IRF is encouraged but not required.

5.4 End of Course Critiques

The Contractor shall reproduce and assist the Government in administering an End of Course Critique (EOCC) provided by the Government to all students the last day of training for each course. The purpose for this data collection is to provide both the Contractor and Government the areas of the training that may need revision. The use of automated real time responses and capability that supports data analysis of the Course Critique is encouraged but not required.

The Contractor shall maintain all EOCCs and deliver them to the government in accordance with CDRL F010.

5.5 After Instruction Report (AIR)

The Contractor shall complete and deliver to the government, an AIR in accordance with CDRL F010. The Contractor shall report all issues that occurred during the training, identify curriculum shortfalls, and surmise the student's EOCCs, IRFs, In addition, the AIR shall provide course completion to include course dates and hours, instructor data, initial and final attendance data (student roster), and basic statistics of trainee performance (trainee average and final test results, passing rates).

5.6 Course Certificates

The Contractor shall provide each student with a course completion certificate using the Government approved format in accordance with CDRL F011. The certificate shall contain: Course Title, Training Location, Total Training Hours, Student's Full Name, Rank, and Military Occupational Specialty (MOS), and the Training Completion Date. The certificate shall be signed by the lead Contractor instructor or Training Manager at the conclusion of each training class and the uniform representative of the program office.

5.7 Course Curriculum Reviews

The Government will host a joint Contractor and Government Course Curriculum Review (CCR) as required in the Quantico, VA area. The Contractor shall develop the CCR agenda, briefing materials and minutes in accordance with CDRLs B002, B003, and B004. The purpose of the CCR is to assess training effectiveness based on observations and student feedback captured in the AIR, identify issues affecting training curriculum, delivery of the training, training support, and any other component that positively or negatively affects the outcome of the training. Components of the CCR shall include a synopsis of student responses from EOCCs, Instructor AIR, Field Service Repair (FSR) maintenance actions, any feedback the Contractor has obtained from the gaining commands of the MADIS/C-UAS, and proposed changes to the NET package. The Contractor shall propose logical points within the NET schedule to conduct CCR in the TrPP. The CCR results shall be documented in accordance with After Instruction Report, CDRL F010. The Government reserves the right to call for an out-of-cycle CCR if ECPs result in anticipated major changes to NET.

5.8 Training Material Updates

The Contractor shall update the training materials, test package, and impacted ancillary training support documents following each NET event, based upon comments received in the course critiques and mutually agreed between the Government and the Contractor. Upon completion of each training class, the Contractor shall provide the Government with Training Materials Change data for the course IAW the applicable CDRLs. The materials contained in the final CDRL delivery shall be ready for the next iteration of NET or as requested by the Government.

Upon completion of the Curriculum Review (para 5.7) and upon Government approval of changes, the Contractor shall incorporate requested configuration changes into all applicable training products. These changes shall be based upon:

- Student responses in the EOCCs
- Course Completion Reports
- Feedback from the Operational Forces
- Curriculum changes to address engineering changes to hardware or software
- Technical Manual changes

The Contractor shall implement the Training Material updates within fifteen (15) working days of the decision to implement. The Contractor shall deliver Training Material development status and deliver products in three iterations of draft one, two, and final for Government review. All changes shall be highlighted or provided in Track Changes in order to expedite review and approval. The implementation will be determined by the Government. The Contractor shall ensure all instructors are educated on the changes and training impacts, and are afforded the necessary time to rehearse changes, as required, prior to delivery at the training event. The Contractor shall maintain

configuration management of all NET curriculum products during the development and material updates. Once approved and accepted by the Government, the Government will maintain version control of all NET curriculum products and authorize which version shall be used prior to conduct of NET events. The Contractor shall dispose of the outdated training products in accordance with Government disposition instructions.

The Contractor shall deliver incorporated training material changes as a complete package unless otherwise requested by the Government. Updated packages shall include the CTTL, LAR, Training Test Package, Operator MLF, Maintainer MLF, Operator and Maintainer Curriculum Outline of Instruction, Operator and Maintainer Job Aids, Course Syllabus (CDRLs F001-F010).

6.0 Training Schedule, Other Direct Charges (ODCs) and Travel Requirements

During execution of this contract the Government anticipates ODCs will be incurred for items such as print materials, binders, and shipping cost (see Paragraph 5.1 above). Laptops, cellular equipment, cellular services, and other items of convenience are not reimbursable as ODCs. Access to Government buildings will be granted for support staff and network accounts established as required. Some aspects of support are likely to require the Contractor to be present at "on-site" Government designated locations for varying durations of time. When this is the case, the Government will provide staff with workspaces and LAN access. Contiguous United States (CONUS) and Outside Contiguous United States (OCONUS) travel is anticipated.

7.0 Travel

In the execution of this effort, the Contractor shall travel to CONUS and OCONUS areas as required to support training. The travel will support both technical and management review meetings, preparation and conduct of training, and other functions. During execution, the Contractor shall travel to support technical and management review meetings and prepare and conduct NET.

The Contractor shall provide a post trip report to provide trip outcome(s) included in the AIR. The Government has estimated the average annual training events required for this contract. This list may change. The estimated number of travel events are detailed in Tables 2-5. The Contractor will be reimbursed for travel on a cost reimbursement basis and travel shall be approved by the COR in advance. See Section G for additional information on travel requirements.

1.0 "System Time Events" are programmatic functions and should not be considered NET events.*Items in red in OP4 are considered part of the Option for additional MADIS support

1.0 "System Time Events" and "CUAS Family of Systems" are programmatic functions and should not be considered NET events.

2.0 ICsUAS PoR, MP-CUAS, and CLaWS are OPTION CLINs and are discussed in paragraphs

3.1.3.3, 3.1.3.4, and 3.1.3.5 respectively.

3.0 The acronym JP spelled out is Japan in the above table

8.0 Service Contract Reporting Requirements

Services Contract Reporting (SCR) requirements apply to this contract. The Contractor shall report required SCR data fields using the SCR section of the System for Award Management (SAM) at following web address: <u>https://sam.gov/SAM/</u>.

Reporting inputs will be for the labor executed during the period of performance during each Government FY, which runs October 1 through September 30. While inputs may be reported any time during the FY, all data shall be reported no later than October 31 of each calendar year. Contractors may direct questions to the help desk, linked at <u>https://sam.gov/SAM/</u>.

9.0 Security Requirements

This contract will require the Contractor to have a Secret Facility Clearance and will require certain contractor personnel to obtain and maintain classified access eligibility. The contractor shall have a valid Secret Facility Clearance and a Secret Safeguarding Level prior to classified performance at the contractor's facility. The prime contractor and all sub-contractors (through the prime contractor) shall adhere to all aspects of 32 CFR Part 117 NISPOM and DoD Manual 5220.22 Volume 2. All personnel identified to perform on this contract shall maintain compliance with Department of Defense, Department of the Navy, and Marine Corps Information and Personnel Security Policy to include completed background investigations (as required) prior to classified performance. This contract shall include a DoD Contract Security Classification Specification (DD-254) as an attachment.

Facility Security Officers (FSOs) are responsible for notifying the MCSC AC/S G-2 Personnel Security Office (PERSEC Office) via encrypted e-mail to MCSC_Security@usmc.mil or 703-432-3374/3952 if any contractor personnel performing on this contract receives an unfavorable adjudication. The FSO must also notify the PERSEC Office, within 24 hours, of any adverse/derogatory information associated with the 13 Adjudicative Guidelines concerning any contractor performing on this contract, if they have been issued a CAC, a MCSC Building Badge and/or granted classified access. The FSO shall notify the Government (written notice) within 24 hours of any contractor personnel added or removed from the contract that have been issued a Common Access Card (CAC) and/or a MCSC Building badge/access.

9.1 Common Access Card (CAC)

The COR will identify and only approve those contractor employees performing on this contract that require CACs in order to perform their job function. In accordance with Headquarters, United States Marine Corps issued guidance relative to Homeland Security Presidential Directive – 12 (HSPD-12), all personnel must meet eligibility criteria to be issued a CAC. In order to meet the

eligibility criteria, contractor employees requiring a CAC must obtain and maintain a favorably adjudicated Personnel Security Investigation (PSI). Prior to authorizing a CAC, the employee's Defense Information System for Security (DISS) record must indicate a completed and favorably adjudicated PSI or (at a minimum) that a PSI has been submitted and accepted (opened). The minimum acceptable investigation is a T-1 or a National Agency Check with Written Inquiries (NACI). If a contractor employee's open investigation closes and is not favorably adjudicated, the CAC must be immediately retrieved and revoked. CACs are not issued for convenience.

Facility Security Officers (FSOs) are responsible for notifying the MCSC AC/S G-2 Personnel Security Office (PERSEC Office) at 703-432-3490/3952 if any contractor personnel performing on this contract receives an unfavorable adjudication after being issued a CAC. The FSO must also immediately notify the PERSEC Office of any adverse/derogatory information associated with the 13 Adjudicative Guidelines concerning any contractor personnel issued a CAC, regardless of whether a DISS Incident Report is submitted.

Each CAC is issued with a "ctr@usmc.mil" e-mail account that the individual contractor is responsible to keep active by logging in on a regular basis (at least twice a month), sending an e-mail and clearing any unneeded e-mails. Contractor personnel issued a CAC **are prohibited** from "auto- forwarding" e-mail from their .mil e-mail account to their .com e-mail account. If the "ctr@usmc.mil" e-mail account is not kept active, G-6 will deactivate the account and the CAC will also lose its functionality. Contractor employees shall solely use their government furnished "ctr@usmc.mil" e-mail accounts for work supporting the USMC, conducted in fulfillment of this contract, and shall not use a contractor supplied or personal e-mail account to conduct official U.S. government business. The use of a contractor or personal e-mail account for contractor business or personal use is allowed, but only when using cellular or a commercial internet service provider.

If a contractor personnel loses their eligibility for a CAC due to an adverse adjudicative decision, they have also lost their eligibility to perform on MCSC contracts.

9.2 Cyber Security Requirements

9.2.1 System Security Plan and Plans of Action and Milestones (SSP/POAM) Reviews

- a. Within thirty (30) days of contract award, the Contractor shall make its System Security Plan(s) (SSP(s)) for its covered Contractor information system(s) available for review by the Government at the Contractor's facility. The SSP(s) shall implement the security requirements in Defense Federal Acquisition Regulation Supplement (DFARS) clause 252.204-7012, which is included in this contract. The Contractor shall fully cooperate in the Government's review of the SSPs at the Contractor's facility.
- b. If the Government determines that the SSP(s) does not adequately implement the requirements of DFARS clause 252.204-7012 then the Government shall notify the Contractor of each identified deficiency. The Contractor shall correct any identified deficiencies within thirty (30) days of notification by the Government. The contracting officer may provide for a correction period longer than thirty (30) days and, in such a case, may require the Contractor to submit a plan of action and milestones (POAM) for the correction of the identified deficiencies. The Contractor shall immediately notify the contracting officer of any failure or anticipated failure to meet a milestone in such a POAM.
- c. Upon the conclusion of the correction period, the Government may conduct a follow-on review of the SSP(s) at the Contractor's facilities. The Government may continue to conduct

follow-on reviews until the Government determines that the Contractor has corrected all identified deficiencies in the SSP(s).

d. The Government may, in its sole discretion, conduct subsequent reviews at the Contractor's site to verify the information in the SSP(s). The Government will conduct such reviews at least every three (3) years (measured from the date of contract award) and may conduct such reviews at any time upon thirty (30) days' notice to the Contractor.

9.3 Compliance to NIST 800-171

- a. The Contractor shall fully implement the CUI Security Requirements (Requirements) and associated Relevant Security Controls (Controls) in NIST Special Publication 800-171 (Rev. 1) (NIST SP 800-171), or establish a SSP(s) and POA&Ms that varies from NIST 800-171 only in accordance with DFARS clause 252.204-7012(b)(2), for all covered Contractor information systems affecting this contract.
- b. Notwithstanding the allowance for such variation, the Contractor shall identify in any SSP and POA&M their plans to implement the following, at a minimum:
 - (1) Implement Control 3.5.3 (Multi-factor authentication). This means that multi-factor authentication is required for all users, privileged and unprivileged accounts that log into a network. In other words, any system that is not standalone should be required to utilize acceptable multi-factor authentication. For legacy systems and systems that cannot support this requirement, such as CNC equipment, etc., a combination of physical and logical protections acceptable to the Government may be substituted;
 - (2) Implement Control 3.1.5 (least privilege) and associated Controls, and identify practices that the Contractor implements to restrict the unnecessary sharing with, or flow of, covered defense information to its subContractors, suppliers, or vendors based on needto-know principles;
 - (3) Implement Control 3.1.12 (monitoring and control remote access sessions) Require monitoring and controlling of remote access sessions and include mechanisms to audit the sessions and methods.
 - (4) Audit user privileges on at least an annual basis;
 - (5) Implement:
 - i. Control 3.13.11 (FIPS 140-2 validated cryptology or implementation of NSA or NIST approved algorithms (i.e. FIPS 140-2 Annex A: AES or Triple DES) or compensating controls as documented in a SSP and POAM); and
 - ii. NIST Cryptographic Algorithm Validation Program (CAVP) (see https://csrc.nist.gov/projects/cryptographic-algorithm-validation-program);
 - (6) Implement Control 3.13.16 (Protect the confidentiality of CUI at rest) or provide a POAM for implementation which shall be evaluated by the Navy for risk acceptance.
 - (7) Implement Control 3.1.19 (encrypt CUI on mobile devices) or provide a plan of action for implementation which can be evaluated by the Government Program Manager for risk to the program.

9.4 Cyber Incident Response

- a. The Contractor shall, within fifteen (15) days of discovering the cyber incident (inclusive of the 72-hour reporting period), deliver all data used in performance of the contract that the Contractor determines is impacted by the incident and begin assessment of potential warfighter/program impact.
- b. Incident data shall be delivered in accordance with the Department of Defense Cyber Crimes Center (DC3) Instructions for Submitting Media available at

http://www.acq.osd.mil/dpap/dars/pgi/docs/Instructions_for_Submitting_Me.... In delivery of the incident data, the Contractor shall, to the extent practical, remove Contractor-owned information from Government covered defense information.

c. If the Contractor subsequently identifies any such data not previously delivered to DC3, then the Contractor shall immediately notify the contracting officer in writing and shall deliver the incident data within ten (10) days of identification. In such a case, the Contractor may request a delivery date later than ten (10) days after identification. The contracting officer will approve or disapprove the request after coordination with DC3.

10.0 Naval Criminal Investigative Service (NCIS) Outreach

The Contractor shall engage with NCIS industry outreach efforts and consider recommendations for hardening of covered Contractor information systems affecting DON programs and technologies.

10.1 NCIS/Industry Monitoring

- a. In the event of a cyber-incident or at any time the Government has indication of a vulnerability or potential vulnerability, the Contractor shall cooperate with the Naval Criminal Investigative Service (NCIS), which may include cooperation related to: threat indicators; pre-determined incident information derived from the Contractor's infrastructure systems; and the continuous provision of all Contractor, subContractor or vendor logs that show network activity, including any additional logs the Contractor, subContractor or vendor agrees to initiate as a result of the cyber incident or notice of actual or potential vulnerability.
- b. If the Government determines that the collection of all logs does not adequately protect its interests, the Contractor and NCIS will work together to implement additional measures, which may include allowing the installation of an appropriate network device that is owned and maintained by NCIS, on the Contractor's information systems or information technology assets. The specific details (e.g., type of device, type of data gathered, monitoring period) regarding the installation of an NCIS network device shall be the subject of a separate agreement negotiated between NCIS and the Contractor. In the alternative, the Contractor may install network sensor capabilities or a network monitoring service, either of which must be reviewed for acceptability by NCIS. Use of this alternative approach shall also be the subject of a separate agreement negotiated between NCIS and the Contractor.
- c. In all cases, the collection or provision of data and any activities associated with this statement of work shall be in accordance with federal, state, and non-US law.

10.2 Contractor's Record of Tier 1 Level Suppliers who Receive or Develop Covered Defense Information.

Contractor shall supply Record of Tier 1 Level Suppliers who Receive or Develop Covered Defense Information. The Contractor shall ensure the plan is available for Government review, when asked, for the Contractor's plan to track flow down of covered defense information and to assess DFARS Clause 252.204-7012 compliance of known Tier 1 Level suppliers.

Appendix A - Government Furnished Information

Reference	Document Name						
	NET Packages*						
1	L-MADIS JUON NET Operator and Operator Level Maintenance Master Lesson File and test package						
2	MADIS 1.0 Operator and Operator Level Maintenance Package in draft form (less than 20% complete) NET package developed to date will be provided at contract award.						
3	E-MADIS NET package						
4	Master Operations and Maintenance Job Task Data						
Note:	*NET Packages are provided upon award						