

**STATEMENT OF WORK
(SOW)**

**FOR MULTIFUNCTIONAL INFORMATION DISTRIBUTION
SYSTEM (MIDS) ON SHIP (MOS)
PRODUCTION & ENGINEERING SERVICES**

1 May 2014

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ACRONYM LIST

ATS – Acceptance Test Station
BER – Beyond Economical Repair
BIT – Built In Test
CCP – Contract Change Proposal
CI – Configuration Items
CM – Configuration Management
COTS – Commercial Off-the-Shelf
CSAR – Configuration Status Accounting Reports
DMSMS - Diminishing Manufacturing Sources and Material Shortages
ECR – Engineering Change Request
EMC – Electromagnetic Compatibility
EMCON – Emissions Control
GFP – Government Furnished Property
GIDEP - Government Industry Data Exchange Program
HPA – High Power Amplifier
HPPI – Host Primary Power Interface
HWCI – Hardware Configuration Items
ICD – Interface Control Documents
IETM – Interactive Electronic Technical Manual
ILS – Integrated Logistics Support
IPT – Integrated Product Team
LRU – Line Replaceable Unit
LVT – Low Volume Terminal
MIDS – Multi-Functional Information Distribution System
MOS - Multi-Functional Information Distribution System On Ship
NII – Networks and Information Integration
NCP- Navy Communications Processor
NOR – Notice of Revision
NRFF – Notch Radio Frequency Filtering
NSIO – Navy Ship Input/Output
OCD – Operator Control & Display
PCA – Physical Configuration Audit
PMR – Program Management Review
PRR – Production Readiness Review
PTD – Provisioning Technical Documentation
RF – Radio Frequency
RFD – Request for Deviation
RM&A - Reliability, Maintainability, and Availability
SC – System Control
SCA – Shipboard Cabinet Assembly
SCR – Software Change Request
SPS – System Performance Specification
SRU – Shop Replaceable Unit
SSPP – System Safety Program Plan
TACAN – Tactical Air Navigation
TC – Terminal Controller
TRR – Test Readiness Review
UID – Unique Item Identification

**MIDS ON SHIP
PRODUCTION & ENGINEERING SERVICES
STATEMENT OF WORK**

1.0 SCOPE

1.1 Introduction

This contract is for the acquisition of Multi-Functional Information Distribution Systems (MIDS) On Ship (MOS), MOS spares, Integrated Logistics Support (ILS), maintenance and repair services, documentation, configuration management, and engineering services.

1.2 Background

The MOS and associated Link-16 Radio Terminal Sets, collectively referred to herein as MOS, and their associated antennas provide full Link-16 capability for increased situational awareness and interoperability. MOS complies with ASD (NII) policy establishing Link-16 as the Department of Defense (DoD) primary data link for all Services and Defense Agency Command and Control and Intelligence and, where practical, weapon systems applications. This requirement was previously fulfilled by SPAWAR Contract N00039-08-D-0007, which expired in Aug 13.

1.3 Objective

This contract covers the fabrication, integration, testing, and delivery of a maximum of twelve (12) MOS Systems (MOS) for shipboard application over a two-year base period. The MOS system shall be implemented such that a qualified MIDS LVT 4 (w/ NSIO software) provided as GFP can be integrated into the MOS system and meet all SOW and System Performance Specification requirements. The term "qualified" is defined as hardware and software that have successfully completed formal qualification testing in accordance with a Government-approved test plan and procedure. All deliverables including documentation shall reflect the integration of a Government-qualified MIDS LVT 4 (w/NSIO software) terminal. Link 16 antennas and MIDS LVT 4 terminals will not be procured under this contract.

This will be a build-to-print effort to manufacture the existing shipboard MOS Lot 4 system. The system will be manufactured and qualified in accordance with the MOS Lot 4 Technical Data Package (TDP) provided as GFI on this contract, and the MOS SPS.

2.0 APPLICABLE DOCUMENTS

2.1 Military Specifications

- a. MIL-PRF-29612B, Training Data Products, 31 Aug 2001

2.2 Military Standards

- a. MIL-STD-130N, Identification Marking Of U.S. Military Property, April 2013
- b. MIL-STD-1553B, Digital Time Division Command/Response Multiplex Data Bus, 15 Jan 1996
- c. MIL-STD-882E Standard Practices for System Safety, May 2012

2.3 Other Publications

- a. ANSI/ASQC Q9001 Quality Management Systems Requirements
- b. MOS-PRF-15001, System Performance Specification for the MOS System and Associated Link 16 Systems and Spares, 11 Oct 2006

- c. DD254, Contract Security Classification Specification, Department Of Defense, Dec 1999
- d. Memorandum of Agreement between Department of Defense and Department of Transportation Regarding the 960-1215 MHZ Frequency Band, 31 Dec 2002f.
- e. U.S. Department of Commerce, National Telecommunications and Information Administration, NTIA Manual
- f. ANSI/EIA-649B, National Consensus Standard for Configuration Management, Apr 2011
- g. DoD Diminishing Manufacturing Resources and Material Shortages (DMSMS) Guidebook, Sep 2009
- h. DoD 4650.1 – R1, Link-16 Electromagnetic Compatibility (EMC) Features Certification Process and Requirements, 26 Apr 2005
- i. Department of the Navy (DON) Policy on Digital Product/Technical Data, Assistant Secretary of the Navy, Research, Development and Acquisition (ASN RDA) Memorandum, 23 Oct 2004
- j. MOS Lot 4 Technical Data Package, dated 6 Mar 14.
- k. Level II Interactive Electronic Technical Manual for Operations and Maintenance of MOS

3.0 TECHNICAL REQUIREMENTS

3.1 Hardware Requirements (CLINs 0100, 0300, 0400, 0500)

Each MOS System delivered under this contract shall connect to existing host shipboard electrical, signal, power, cooling, and physical interfaces to meet the requirements of the MOS SPS (MOS-PRF-15001, System Performance Specification for the MOS System and Associated Link 16 Systems and Spares, 11 Oct 2006) and manufactured and tested in accordance with the MOS Lot 4 Technical Data Package, dated 6 Mar 14.

3.1.1 Overall Modular System Description (CLIN 0100)

Each MOS system ordered shall be built, tested, and delivered to the Government as a system. The MOS systems shall be comprised of common hardware modules providing the functions and complying with the requirements listed in the following paragraphs. Each MOS System delivered under this contract shall provide Built-In-Test (BIT) fault isolation capability to the Shop Replaceable Unit (SRU) and Line Replaceable Unit (LRU) level to meet the requirements of the MOS SPS.

3.1.1.1 Shipboard Cabinet Assembly (SCA)

The SCA shall be built, tested, and qualified to meet the requirements of the MOS SPS. Additionally, each SCA delivered with a MOS System shall incorporate safety design features to meet the requirements of the MOS SPS.

3.1.1.2 MIDS Low Volume Terminal (LVT)

Every system configuration delivered on this contract shall utilize a qualified MIDS LVT 4 (w/NSIO software) provided as GFP under this contract.

3.1.1.3 High-Power Radio Frequency (RF) Transmit Module

The system shall include a High-Power RF Transmit module. The High-Power RF Transmit Module shall be capable of providing either a 200-watt output or a 1000-watt output using the MIDS LVT RF exciter signal as a source. The power level shall be via an input from the operator. The High-Power RF Transmit Module shall be built, tested, and qualified to meet the requirements of the MOS SPS.

3.1.1.4 Antenna Interface

The antenna interface function shall be built, tested, and qualified to meet the requirements of the MOS SPS. The antenna interface shall be capable of effectively

transferring the RF output signal from the MIDS LVT or the High-Power RF Transmit module to the antenna(s).

3.1.1.5 Host Primary Power Interface (HPPI)

The HPPI function shall be built, tested, and qualified to meet the requirements of the MOS SPS.

3.1.1.6 Operator Control and Display (OCD)

The OCD function shall provide system interface between the operator and the system to meet the requirements of the MOS SPS.

3.1.1.7 System Control (SC)

The SC function shall allow the operator to locally initialize, control, and monitor the system, view and change data, and monitor BIT performance to meet the requirements of the MOS SPS.

3.1.1.8 System Status Display (SSD)

The SSD function shall provide system information to the operator to meet the requirements of the MOS SPS.

3.1.1.9 External Controls

The Shipboard Cabinet Assembly and modules delivered with each MOS System shall include controls, displays, and processing to meet the requirements of the SPS.

3.1.1.10 Notch Radio Frequency (RF) Filtering (NRFF)

Each MOS System delivered under this contract shall provide notch filtering of the RF outputs to prevent interference with Tactical Air Navigation (TACAN) and Identification Friend or Foe (IFF) reception to meet the requirements of the MOS SPS.

3.1.2 Ordering Configuration Definition (CLIN 0100)

MOS System: The MOS configuration shall be comprised of all the hardware components, functions and requirements as described in SOW section 3.1.1, and contain the following modules: SCA; MIDS LVT (supplied as GFP); High-Power RF Transmit Module; Antenna Interface; HPPI; OCD; SC; SSD; External Controls for Power On/Off, Standby Mode and EMCON and NRFF. All system modules, with the exception of the NRFF module, shall be housed within the SCA.

3.1.3 Technical Manual Copies (CLIN 0100)

One (1) electronic copy of the MOS Interactive Electronic Technical Manual (IETM) in CD/DVD format shall be included with each MOS system delivered under the contract.

3.1.4 Spares (CLIN 0400)

The contractor shall fabricate, test and deliver individual spare parts to support the MOS System as required under deliver orders (except MIDS LVT spares which will not be procured under this contract). The quantity of spares purchased shall be determined by the Government. The following spare parts are examples of parts that may be ordered by delivery order under the contract. This is a reflective list and may not reflect all spare parts. Pricing for each spare will be negotiated prior to awarding the delivery order.

<i>Part Number</i>	<i>Description</i>
4-850-01	Remote Power Supply(RPS) P/N 270-2731-010
987-0638-001	RT INTERFACE/DISCRETE ASSY
988-9111-101	EXCITER/IPF
988-9790-001	RF POWER AMPLIFIER
967-0008-001	DISPLAY, LCD, FLAT (use PN C200A087101)

C200A014-101	FAN, TUBE AXIAL (FAN & HARNESS)
C200A081-101	TRANSCEIVER (Same as NR1001SB-T & 1A6A4A5)
C200A087-101	DISPLAY, LCD
H200A123-101	REGULATOR, VOLTAGE
H274A214-01	CPU MODULE
H407A004-102	CONVERTER, FREQUENCY
H408A002-201	BLOWER #1
H501A009-101	POWER SUPPLY (T1104)
H504A041-102	TRANSFORMER, CURRENT
H504A079-101	TRANSFORMER, POWER
H517A020-101	FILTER RFI - EMI
H517A021-101	FILTER,BAND PASS
H522A098-01	ASSEMBLY TERM CONTROL CONTROL
H523A082-01	PNL
H536A034-02	POWER FILTER
H536A041-02	SWITCH, INTERLOCK
M23071/7-001	FAN
P310A037-01	PIU
676-4525-030	AMPLIFIER-CONVERTER
676-4526-040	POWER SUPPLY/PRE-DRIVER
676-4527-032	PROCESSOR/LEFT I/O
676-4528-030	COUNTER ASSEMBLY I/O
676-4530-030	CHASSIS ASSEMBLY (ESDS)
817-9008-002	HIGH POWER AMPLIFIER GROUP (HPAG)
817-9013-010	ANTENNA SUBASSEMBLY
817-9016-002	NCH FILTER (NFG)
817-2089-003	POWER INTERFACE UNIT (PIU) CCA
817-7355-001	LIMITER, ELECTRICAL, MX-10988/URC-107 (V) 7
H200A323-01	CONTROL STATUS ASSEMBLY
H200A342-01	INDUSTRIAL PNL MOUSE ASSY (JOYSTICK)
H315A249-101	CONTROL/STATUS PANEL ASSEMBLY
H503A003-01	RELAY ASSEMBLY
H503A006-01	TERMINAL POWER RELAY ASSY
H538A726-01	DISCRETE CCA
H538A727-01	POWER SUPPLY CCA (T1040)
H542A068-02	CABLE
H600A036-01	THERMISTOR
P600A061-01	INTERFACE ASSEMBLY
U10025	BATTERY (5 yrs - JA/2 ships/6 mo.; KS/3 mo.)

3.1.5 Configuration Data List (CLINs 0100, 0400)

A copy of the Configuration Data List (CDRL A027) containing the As-Built configuration shall be delivered along with each system or spare delivered under this contract.

3.1.6 Obsolescence Approach (CLINs 0300, 0500)

3.1.6.1 Obsolescence Approach –Issues known at RFP release (CLIN 0300)

The contractor shall resolve all potential obsolescence issues related to the manufacture and qualification of all units. The contractor shall identify obsolete parts, describe the proposed replacement, and describe the production and system qualification impact for

each obsolete part. Currently there is a potential obsolescence issue with the H274A214-01 CPU Module and the 944-2477-002 HPA A4 Card.

3.1.6.2 Obsolescence Approach – Issues unknown at RFP release (CLIN 0500)

The Contractor shall produce a maximum of twelve (12) identical units. However, if during the life of this contract, the manufacture of hardware or software listed in the schedule is discontinued, the Contractor shall provide to the Contracting Officer, at the time the Contracting Officer is advised of the intent to discontinue, a description of the hardware or software to be considered as a substitute for the discontinued hardware or software.

3.1.6.3 For each item of hardware or software offered as a substitute, the Contractor shall certify and provide documentation in accordance with FAR Subpart 15.4 to support that:

3.1.6.3.1 The functionality for the substitute hardware or software is equal to or greater than the hardware or software for which the substitute is offered;

3.1.6.3.2 The unit price for the substitute is no greater than the unit price of the hardware or software for which the substitute is offered;

3.1.6.3.3 The maintenance cost to the Government will be no greater than the maintenance cost for the hardware or software for which the substitute is offered;

3.1.6.3.4 All support costs which are borne by the Government will be no greater than the support costs for which the substitute is offered.

3.1.6.4 The Government shall at its sole discretion determine the technical acceptability of any hardware or software offered as a substitution. If a substitute is offered which fails to meet all of the above criteria, the substitution will be subject to mutual agreement. Disapproval of a substitution shall not give rise to or in any way entitle the Contractor to any extension of time, equitable adjustment, or suspension of liquidated damages or other credit provided under this contract.

3.1.6.5 No substitutes are authorized for the first 180 days of the contract.

3.1.7 Technical Data Package Update (CLIN 0500)

If any documents listed under SOW Section 3.7.1 are revised during this contract, the contractor shall provide a one-time delivery to the Government of the fully updated Technical Data Package in accordance with CDRL A030, Technical Data Package. This Technical Data Package shall consist of the final revision of all the documents listed in this SOW under section 3.7.1. Revisions to the TDP and the requirement for a PCA after contract award shall be accomplished through a negotiated task order if required.

3.2 Software Requirements (CLIN 0100)

The systems delivered shall execute the MIDS and MOS unique software/firmware. The system shall operate with the following:

- a. Navy Ship Input/Output (NSIO), version 4.10A
- b. Navy Communications Processor (NCP), version 1.07
- c. Terminal Controller (TC), TC 1.09A/2.01
- d. MIDS Core, version 9.06
- e. 2.4 Kbit/s and 16 Kbit/s Voice, version 1.07
- f. Boot Codes: NSIO Boot V14R0, NCP Boot V14R0

The listed software/firmware, with the exception of the TC software, will be provided installed in the MIDS LVT that has been approved and will be provided as GFP under this contract.

The TDP describes the MOS Systems that are compatible with existing GFP MOS software. Modification of GFP software shall be avoided, if possible. If the contractor determines that a modification to GFP software is unavoidable, the contractor shall formally request a modification by providing a Software Change Request (SCR) in accordance with CDRL A024, Technical Report – Study/Services. The SCR shall provide the following information:

- a. Identification of GFP software Configuration Items (CI),
- b. Statement of the problem in functional terms,
- c. Technical description of the proposed change,
- d. Description of steps taken to adapt system design to operate with existing GFP software, and
- e. Technical Impact if SCR is not approved (e.g., Explanation of what technical requirement(s) will not be met?).

The Government will maintain configuration control of GFP software. All proposed changes must be approved by the Government.

3.3 First Article Testing (CLIN 0200)

First article testing shall be limited to tasks associated with Functional Performance Tests (FPT), EMC Features, and Acceptance Test Station Approval. The contractor shall complete the FPT and have Acceptance Test Station approval prior to Government acceptance of any MOS system under this contract. The Government may, at its discretion, waive some of these testing and certification requirements if the equipment has previously demonstrated functionality and/or certification, using Government-approved tests, and no hardware changes have been incorporated that affect function or performance characteristics of the articles previously tested and certified.

3.3.1 Functional Performance Testing (CLIN 0200)

The Functional Performance Testing shall be conducted on a MOS System utilizing the MIDS LVT 4 terminal. The FPT shall be conducted in accordance with, and meet the requirements of, the MOS SPS. The contractor shall provide Functional Performance Test Procedures for each test in accordance with CDRL A002 Test Procedure and a Functional Performance Test Report for each test in accordance with CDRL A003 Test/Inspection Report.

The contractor shall deliver the FPT article to the Government after completion of testing. The test article will not require any refurbishment given the non-destructive nature of the FPT. The FPT article shall then undergo normal inspection and acceptance procedures in accordance with section 6.3 of this SOW. The unit shall be delivered to the Government with the run-time required to perform FPT, ATP, dry runs, and troubleshooting tests and shall otherwise be in like-new condition.

The approved Function Performance Test Procedures, CDRL A002-001B, included in the TDP, describes in detail the scope of each of the above tests to be conducted. The Contractor shall follow the test procedures and complete each test as listed in the approved Functional Performance Test Procedures CDRL A002-001B.

3.3.2 EMC Features Certification (CLIN 0200)

This procurement shall comply with paragraph 2.3.i, 2.3.j, and 2.3m references affecting transmission of Link-16 waveforms in the 960-1215 MHZ frequency band. Any changes

to the hardware or software from the TDP configuration that affect the transmit characteristics of the MOS system shall necessitate a new EMC Features Certification in accordance with the DoD approved specification and methodology referenced in paragraph 2.3.

Each MOS system shall meet the EMC Features Certification requirements of the MOS SPS. Any MOS configuration delivered under this contract shall demonstrate compliance with EMC Certification requirements. An EMC Features Certification test shall be required if any new R/F components that have not been previously certified or are not in the TDP are integrated into the MOS system. An EMC Features Certification test shall be required for any MOS system that has modified R/F hardware or software from the TDP configuration. The contractor shall provide EMC Features Certification Test Procedures for each test in accordance with CDRL A002, Test Procedure; and an EMC Features Certification Test Report in accordance with CDRL A003, Test Inspection Report.

3.3.3 Acceptance Test Station (ATS) (CLIN 0200)

The ATS used by the contractor shall provide test capabilities that exercise every function of the system to be delivered to the Government and test these functions against all performance parameter requirements. The ATS shall provide the test data as well as the performance parameter requirements against which the test data can be compared. A preliminary design description and performance specification of the ATS shall be provided at the Production Readiness Review. A final design description, performance specification, and Interface Control Document for the ATS shall be provided to the Government 30 days prior to the Test Readiness Review. The ATS design shall demonstrate the capability to interface with the MOS system. The contractor shall supply the Acceptance Test Station design description in accordance with CDRL A025, System/Subsystem Design Description, an Acceptance Test Station Performance Specification in accordance with CDRL A026, Performance Specification Documents, and Acceptance Test Station Interface Control Documents (ICDs) in accordance with CDRL A023, Interface Control Document.

3.3.3.1 Acceptance Test Station Validation and/or Qualification

The Government will evaluate the contractor's ATS prior to its use for test of production MOS Systems. The contractor shall provide a demonstration of their ATS capability to perform an Acceptance and Functional Performance test. The Government evaluation will be performed using a known, fully operational GFP MOS to test the integrity of the ATS. The demonstration shall be conducted at the contractor's test facilities and a Government evaluation team may witness the ATS demonstration. The contractor shall prepare a Government-approved test procedure to demonstrate the following:

- a. Acceptance Tests
 1. Terminal Initialization
 2. Synchronization
 3. Message processing
 4. TOA Accuracy
 5. RF Characteristics
 6. EMC Features
 7. Low and High Power Transmit Mode
 8. Blanking
 9. Receiver Sensitivity
 10. Voice
 11. Built-In-Test
 12. Power Interrupt

b. Functional Performance Tests

1. 1553 Multiple Bus Interface
2. External Time Reference
3. Input Power
4. Input Power Transient
5. A/J Margin Performance

The contractor shall demonstrate that the ATS can successfully perform all of the listed Acceptance and Functional Performance tests automatically for the High Power MOS system.

The contractor shall supply an Acceptance Test Station Test Procedure in accordance with CDRL A002, Test Procedure, thirty (30) days prior to the Test Readiness Review. Upon successful completion of the ATS demonstration, the Government shall grant approval of the ATS to conduct testing of production systems to be delivered under this contract.

3.3.4 Test Readiness Review (CLIN 0200)

Thirty (30) days prior to the start of FPT, EMC Features, and ATS Certification (if required), the contractor shall demonstrate test readiness at a Test Readiness Review (TRR). At the TRR, the contractor shall provide technical details of the systems that the contractor intends to test to satisfy the terms of the contract and meet the requirements of the MOS SPS. These materials shall be delivered to the Government no later than 10 calendar days prior to the scheduled TRR in accordance with CDRL A024, Technical Report – Study/Services. The contractor shall not begin formal testing activities until notification of a successful TRR is received from the Government. The TRR shall be held at the contractor's facilities or by teleconference and to the maximum extent possible, be coordinated with other scheduled meetings or reviews so as to minimize travel expenses. The contractor shall provide an agenda in accordance with CDRL A020, Meeting Agenda; and Meeting Minutes in accordance with CDRL A010, Report, Record of Meeting/Minutes. At a minimum, the Program Manager and Chief Engineer shall be present at the TRR. A follow-on TRR may be scheduled at the discretion of the Government to resolve any deficiencies the Government has identified.

3.4 Non-Recurring Integrated Logistics Support (ILS) Products (CLIN 0500)

If any documents listed under SOW Section 3.7.1 are revised as a result of changes to the MOS system under this contract, the contractor shall provide a one-time delivery to the Government of the fully updated ILS products. The contractor shall develop or update existing documents to deliver technical manuals and provisioning data that reflects the configuration of all MOS prime hardware system delivered under this contract.

3.5 Logistics Requirements (CLINs 0100, 0300, 0400)

The contractor shall perform ILS tasks needed to ensure compliance for all system configurations with the supportability requirements in the MOS SPS, and as described in SOW paragraphs 3.5.1 through 3.5.6.

The contractor shall establish a production support capability program to manage and integrate all logistics support efforts required by this SOW and other engineering and production efforts to meet the product supportability requirements of the MOS SPS. The ILS Program shall apply to all configurations identified in this contract.

3.5.1 Unique Item Identification Coding (CLINs 0100, 0400)

The contractor shall comply with FAR clause 252.211-7003 requiring unique identification for items that have a Government unit acquisition cost of over \$5,000, are serially

managed, are mission essential, are controlled inventory, or are consumable items or materials where permanent identification is necessary. The contractor shall identify, in accordance with CDRL A013, Items Requiring Unique Item Identification (UID), all subassemblies, components, and parts embedded within items that meet the requirement for unique identification as specified in the clause. UID for items valued less than \$5000 is not currently required. Please refer to <http://www.osd.acq.mil/uid> for additional guidance. The contractor shall also comply with marking requirements contained in MIL-STD-130L.

3.5.2 Diminishing Manufacturing Sources and Material Shortages (CLINs 0100, 0300, 0400)

The Diminishing Manufacturing Sources and Material Shortages (DMSMS) forecasting source data is essential information that will enable the identification, forecasting and management of piece part obsolescence impacts and mitigations as a part of the DOD Program Manager's total system life cycle management responsibilities. This data is planned for use in DMSMS forecasting tools using a common data standard that enhances efficiency across programs that may share the data on common items. This data may be obtained during any program life cycle phase using sources such as the preferred parts list, bill of materials, vendor surveys, and inspections. The contractor shall participate in the Government Industry Data Exchange Program (GIDEP) to screen parts prior to their selection. The contractor shall implement an interchangeability parts list that will contain the vendor name, vendor part number, and comparison of the alternate part versus the part it replaces detailing any differences in the specifications, testing, and manufacturing operations performed by the vendor.

The contractor shall be responsible for the maintenance of, or the development of, alternate sources of supply or designs for MOS components, materials, assemblies, subassemblies and units throughout the contract. If DMSMS affects production of MOS, the contractor shall be responsible to pursue and secure DMSMS case solutions such as alternate vendors, substitute parts, or redesign(s) with the approval of the Government. Resolution will be in accordance with procedures outlined in the aforementioned DMSMS Plan.

The contractor shall provide DMSMS forecasting source data in accordance with CDRL A017, Diminishing Manufacturing Sources and Material Shortages (DMSMS) Forecasting Source Data.

The contractor shall develop a plan for identifying, controlling, and avoiding use of Diminishing Manufacturing Sources (DMS) and obsolete technologies using reference 2.3.1 as a guide. The DMSMS Plan shall be delivered in accordance with CDRL A032, Diminishing Manufacturing Sources and Material Shortages (DMSMS) Plan.

3.5.3 Reliability, Maintainability and Availability Tracking (RM&A) (CLIN 0100)

The contractor shall track and report on system and component RM&A during scheduled Program Management Reviews (PMR) and/or Integrated Product Team (IPT) meetings to reduce problems associated with material and parts, workmanship, design, manufacturing-induced failures, Built-In-Test, software and firmware, and specifications. This report shall be updated quarterly and delivered to the Government at the PMR/IPT in accordance with CDRL A024, Technical Report – Study/Services.

3.5.4 Safety Program (CLIN 0100)

The contractor shall establish and conduct a System Safety Program to ensure the requirements of the MOS Performance Specification are met. MIL-STD-882E shall be used for guidance. Safety mishap reporting procedures within the contractor's facility shall be included in the SSPP. The contractor shall also define high and serious risks in terms of the risk level matrix. A System Safety Assessment shall be provided as part of the PMR.

3.5.5 Configuration Status Accounting Information (CLIN 0100, 0400)

The contractor shall develop and maintain procedures that delineate the status of implementation of approved changes. Data elements used shall be identified in accordance with ANSI/EIA-836. For hardware configuration items, Configuration Status Accounting records shall include as a minimum: the drawing number, the Commercial and Government Entity (CAGE) Code, the drawing title, the revision level, and the part number. The contractor shall prepare and maintain the Configuration Status Accounting Reports (CSAR). The CSAR shall be submitted in accordance with CDRL A005, Configuration Status Accounting Information.

3.6 Engineering and Logistics Services (authorized by Delivery Order)(CLIN 0500)

3.6.1 Engineering Services

The contractor shall perform technical studies and investigations in accordance with individual Delivery Orders, which will be issued either for severable or completion purposes as the tasks are defined. Engineering services shall include development of new or modified MOS configurations to support platform integration requirements and develop Engineering Change Requests (ECRs), Notice Of Revision (NORs).

Technical reports will be delivered in accordance with CDRL A024, Technical Report – Study/Services; ECRs will be delivered in accordance with CDRL A004, Engineering Change Proposal; and Notice of Revision (NOR) in accordance with CDRL A033, Notice of Revision.

3.6.2 Logistics Services

3.6.2.1 ILS Products Updates

The contractor shall provide updates to Logistics products delivered under non-recurring ILS Products to reflect system configuration changes and correct errors uncovered during testing and under operational conditions. The products include the Logistics Product Data (CDRL A014) and Provisioning Technical Documentation Supplementary PTD (CDRL A015).

3.6.3 Repair Services

The contractor shall perform repair services in accordance with individual Delivery Orders, which will be issued either for severable or completion purposes as the tasks are defined. A Delivery Order Request for Proposal will list items requiring repair. Upon receipt of the Delivery Order Request for Proposal the contractor shall be prepare a quote to analyze and diagnose each item. The quote to analyze and diagnose all items shall be delivered to the Government within 10 days of the Delivery Order Request for Proposal. The deliverable for the analysis and diagnosis will be a quote to repair or return each unit and a determination of whether an item is BER. The quote for repair shall be negotiated and awarded by delivery order modification or separate delivery order.

An item shall be considered BER if the estimated cost to repair, including the cost to analyze and diagnose the failed item, exceeds 80% of the cost of a new item. The cost to analyze and diagnose the failed item shall not exceed 10% of the cost of a new item. If the item is determined to be BER, the contractor shall stop work on that item immediately, notify the Government within three (3) working days and await further instructions. If the contractor determines that the item can be repaired at an estimated cost not to exceed 80% of a new item, the contractor shall be bound to repair the item or provide a new replacement item under the terms shown below at a cost not to exceed 80% of a new item. Repaired or new, Ready for Issue, LRUs, SRUs shall be returned as directed. All quotes for repairs shall include the cost for new components. The contractor shall receive

authorization from the Government prior to completing any repairs by incorporating used parts or components.

3.7 Other Tasks (Authorized by Delivery Order) (CLIN 0500)

3.7.1 Production Technical Data

If ordered, the contractor shall deliver an update of the GFI Production Technical Data Package to reflect any changes, if any, to the Technical Data and Engineering Drawings as described in the following paragraphs. The contractor shall provide the Government with a minimum of "Government Purpose Rights" as described in DFARS 252.227-7013, DFARS 252.227-7014, and DFARS 252.227-7015 for all updates provided under this task.

3.7.1.1 Technical Data

The Technical Data shall consist of the latest version of the following documents, delivered in accordance with the referenced CDRLs:

- a. MOS Production System Intra-Cabinet Interface Control Document (CDRL A023)
- b. Documents that represent the design of developed SRUs by Commercial Support Documentation/Acceptance Test Specification and Commercial Off-The-Shelf (COTS) by Commercial Product Drawings (CDRL A001)
- c. Source Control Drawings for COTS Items (CDRL A001)
- d. The Product Drawings (CDRL A009) and Associated Lists, exclusive of COTS items and non-developed equipment (CDRL A019)
- e. Data Accession List
- f. Special Tooling Drawings/Models and Associated Lists
- g. Configuration Data List. The contractor shall document the as-built configuration of each terminal and spares delivery. This documentation shall include hardware, software, and firmware and shall accompany each terminal and spares delivery as tailored in the CDRL (CDRL A027).

The contractor shall maintain the documents listed above as they are updated. All Government approved ECRs and IPT changes to the documents listed above shall be incorporated prior to delivery.

If anything drives changes to the TDP and the PCA during the course of the contract, the contractor shall provide a one-time delivery to the Government of a final Technical Data Package at the end of the contract in accordance with CDRL A030, Technical Data Package. This Technical Data Package shall consist of the final revision of all the documents listed above.

3.7.1.2 Production Engineering Drawings

The contractor shall prepare and deliver to the Government production quality engineering level 3 drawings for the MOS System in accordance with CDRL A009, Engineering Drawings and MOS Production System Intra-Cabinet Interface Control Document in accordance with CDRL A023, Interface Control Document. Engineering drawings and associated lists prepared by the contractor shall provide design definition sufficiently complete to enable a competent manufacturer to produce and maintain quality control of the items defined in this SOW to the degree that physical and performance characteristics interchangeable with those of the original design are obtained without resorting to additional product design effort, additional design data, or recourse to the original design activity. These engineering drawings shall:

- a. Reflect the end product;
- b. Provide the engineering data for the support of quantity production; and
- c. In conjunction with other related procurement data, provide the necessary data to permit competitive procurement of items substantially identical to the original items.

The engineering drawings shall include details of unique processes, i.e., not published or generally available to industry, when essential to design or manufacture; performance ratings; dimensional and tolerance data; critical manufacturing assembly sequences; input and output characteristics; diagrams; mechanical and electrical connections; physical characteristics including form and finish; details of material identification; inspection, test, and evaluation criteria; necessary calibration information; and quality control data. The contractor shall furnish engineering drawings consisting:

- a. Interface Cable and Connector Drawings (pin out, connector, and type)
- b. Interface Control Drawings between the MIDS Terminal/Host and the TC/Host
- c. Installation (control) drawings providing all information necessary to support installation into the applicable platforms

The contractor shall provide commercial product drawings and specifications of COTS items in accordance with CDRL A001, Commercial Support Documentation; and Acceptance Test Procedures in accordance with CDRL A002, Test Procedure, for new hardware items developed under this contract through an unscheduled modification or ECR. All drawings shall include parts lists, data lists, and index lists in accordance with CDRL A008, Source/Vendor List/Foreign List.

3.7.2 Physical Configuration Audit

The contractor shall schedule and conduct jointly with the Government a Physical Configuration Audit (PCA) with a production configuration MOS System. The contractor shall verify that the physical characteristics achieved in the Configuration Items (CIs) match those characteristics specified in the CI configuration identification and in the contractor prepared Development Baseline documents (Level 3 Drawings, as defined in DOD-D-1000B and System ICDs). Level 3 requirements shall be flowed down to non-COTS subcontractor-produced items. The contractor shall prepare a Government-approved plan in accordance with CDRL A011 that consists of a description that includes as a minimum the following:

- a. Hardware Configuration Items (HWCIs) to be audited. Identify each HWCI by:
 1. Nomenclature
 2. Specification identification number
 3. Serial Number
 4. Specification identification number
 5. Other identification numbers
- b. Documentation to be audited. Identify the following, as applicable:
 1. Engineering drawings (included lists)
 2. Applicable specifications
 3. Engineering change proposals
 4. Test Plans and procedures
 5. Operating and support manuals
 6. Configuration documentation release procedures
 7. Quality assurance documentation and procedures
 8. Request for deviations/waivers
 9. Software/firmware descriptions, flow charts, manuals and lists
- c. Reference materials. Identify the following document as applicable:
 1. Deviations and waiver list.

- d. Scope of audit.
- e. Location and date.
- f. Team composition.
 - 1. Contractor representatives and their function in the audit
 - 2. Proposed Government participation and functions in the audit.
- g. Administrative requirements.
 - 1. Description of facilities and support equipment to be available.
 - 2. Administrative support to be provided
 - 3. Security requirements

Necessary document updates or changes as a result of the PCA are the responsibility of the contractor. The contractor shall provide to the Government a Physical Configuration Audit Report in accordance with CDRL A012, Configuration Audit Summary Report, upon completion of the audit.

3.8 Program Management and Reporting Requirements (CLINs 0100-0700)

The contractor shall manage all aspects of the contract in accordance with the requirements of SOW Sections 3.8.1 through 3.8.12.

3.8.1 Program Manager

The contractor shall designate a Program Manager who shall have overall responsibility for control and coordination of all work performed. The manager shall act as the single focal point within the contractor's activity for all required program status information. The contractor shall establish a formal organization responsible for accomplishing the tasks outlined in this SOW. The contractor shall identify lead personnel that will be responsible for executing the work under this contract and the applicable chain of command. The contractor shall provide the Government with organizational updates throughout the performance of the contract. The contractor shall identify all subcontractors and major vendors, identify roles and responsibilities between the prime and the subcontractors, and assume the responsibility of managing the subcontractor team performing under this contract. The contractor shall ensure expeditious transfer of appropriate technical data among subcontractors.

3.8.2 Post-Award Meeting

A Post Award Meeting shall be held no later than 30 days after contract award at the contractor's facilities or via teleconference. The post-award meeting shall last no longer than two (2) days. The contractor shall provide an agenda in accordance with CDRL A020, Meeting Agenda; and Meeting Minutes in accordance with CDRL A010, Report, Record of Meeting/Minutes. At a minimum, the Program Manager, Chief Engineer, ILS Manager, Senior Contracts Official, and Senior Financial Official shall be present at the Post-Award Meeting.

3.8.3 Production Readiness Review

The contractor shall present the status of production readiness at a Production Readiness Review (PRR). Prior to the PRR, the contractor shall provide any changes to the technical documentation in the TDP in accordance with CDRL A009 Engineering Drawings and CDRL A019 Parts Lists, respectively, depicting changes to the design described in the TDP and that the contractor intends to build, integrate and test to satisfy the terms of the contract and meet the requirements of the MOS SPS. The contractor shall begin production activities only after the successful PRR and the design has been approved by the Government. The contractor shall provide any proposed Software Change Requests

for GFP software. These materials shall be delivered to the Government no later than 10 calendar days prior to the scheduled PRR in accordance with CDRL A024, Technical Report - Study/Services. The contractor shall not begin formal production activities until notification of a successful PRR is received from the Government. The PRR shall occur no later than 120 days after contract award on a date to be determined at the Post Award Meeting.

The PRR shall be held at the contractor's facilities or by teleconference, and shall be last no longer than two (2) days. The contractor shall provide an agenda in accordance with CDRL A020, Meeting Agenda; and Meeting Minutes in accordance with CDRL A010, Report, Record of Meeting/Minutes. At a minimum, the Program Manager, Chief Engineer, and the ILS Manager shall be present at the Production Readiness Review. A follow-on PRR may be scheduled at the discretion of the Government to resolve any deficiencies that the Government has identified.

3.8.4 Program Management Reviews

The contractor shall conduct semi-annual PMRs, which will be divided into a programmatic and a technical section. The contractor shall address schedule status, progress against major milestones, configuration management, manufacturing, engineering, logistics, reliability, quality assurance, and subcontractor status at all PMRs. The contractor shall develop the PMR agenda in accordance with CDRL A020, Meeting Agenda, and Meeting Minutes in accordance with CDRL A010, Report, Record of Meeting/Minutes, for Government approval. Each PMR shall be held at the contractor's facilities or by teleconference, and shall last no longer than 2 days. At a minimum, the Program Manager, Chief Engineer, ILS Manager, Senior Contracts Official, and Senior Financial Official shall be present at the PMR as applicable for each section.

3.8.5 Cost Data Reporting

The contractor shall develop financial reports quarterly in accordance with CDRL A031, Cost Data Summary Report (DD Form 1921).

3.8.6 Program Report

The contractor shall prepare and maintain a schedule, which permits evaluation of progress against contract milestones. Back-up schedules detailing the activities and interdependencies required to achieve milestones in the schedule shall be prepared and maintained. Schedules shall be presented at PMRs. The contractor shall deliver the schedule in accordance with CDRL A022, Production Report.

3.8.7 Quality Assurance Program

The contractor shall use a quality assurance program that is in conformance to contractual requirements and meets the requirements of ANSI/ASQC Q9001, or an equivalent quality model. The contractor shall maintain documentation describing quality policies, procedures and standards used in the fabrication of parts, system integration and test.

3.8.8 Configuration Management

The contractor shall use a standard Configuration Management (CM) Program. The contractor shall maintain a CM plan based on the CM standard that documents the program and shall be available to the Government for a compliance assessment. All changes to the CM Program shall be presented at the PMRs. The contractor shall be responsible to extend the requirements of the CM Program to its subcontractors, vendors and suppliers under this contract. The contractor shall provide configuration management and control of all configuration items throughout this effort.

3.8.9 Deviation

The contractor shall request a deviation to the established system requirements that cannot be met. The contractor shall submit deviations in accordance with CDRL A006, Request for Deviation (RFD).

3.8.10 Class I ECR and NOR

The contractor or the Government shall initiate ECRs to established Configuration Items (CIs). All contractor-proposed changes shall include marked-up Product Drawings and any other documents to support that change, including estimated cost to implement the resulting changes. Emergency and urgent ECRs shall be submitted to the Government as required to change the functional, allocated, or product baseline. All Class I ECRs shall be submitted in accordance with CDRL A004, Engineering Change Request. Class II changes will not require Government concurrence and shall be provided to the Government for information purposes only.

In conjunction with ECRs, the contractor shall generate a Notice of Revision (NOR) to describe any proposed changes to technical documentation that is being requested by an ECR. The NOR shall be submitted in accordance with CDRL A033, Notice of Revision.

3.8.11 Contract Management

The contractor shall designate and identify a Contract Manager who will serve as single point of contact for all contractual matters related to this contract. This person shall have the authority to bind the company contractually in all aspects pertaining to this contract. All communications with the Government that impact the contract and program performance shall be initiated via the Contracts Manager or the Program Manager. At the government's request, the contractor shall prepare and submit Contract Change Proposals (CCPs) in accordance with the CDRL A034.

The contractor shall perform only the work covered within the scope of this SOW and authorized and defined by individual Delivery Orders (DOs) issued by the Contracting Officer (CO). The DOs will cite the applicable statement of work paragraphs, special management or technical considerations, and a detailed work definition. The contractor shall not initiate work without a properly issued DO. Upon issuance of a Delivery Order Request for Proposal, the contractor shall provide a proposal that includes a plan of action including schedule, technical requirements, staffing level, and estimated cost for Government consideration. Contractor response to Delivery Order Request for Proposals shall be no later than 3 business days for critical requirements and no later than 15 calendar days for routine requests.

3.8.12 Weekly Status Meetings

The contractor shall conduct Weekly Status Meetings, except when superseded by a PMR, in the performance of this task. Weekly Status Meetings shall be conducted via teleconference and shall include the discussion of any information that has impact upon the task activities. The contractor shall develop a Weekly Status Meeting Agenda and Meeting Minutes/Action Items and submit in contractor format.

4.0 GOVERNMENT FURNISHED PROPERTY/INFORMATION (GFP/GFI)

The following GFP will be furnished as described below, and updates will be provided when available.

- a. Fully qualified MIDS LVT 4 terminal with the software described in section 3.2 installed. The Government will provide one MIDS-LVT terminal for each unit ordered within 10 months after Delivery Order award. The Government may elect to provide a single MIDS LVT 4 terminal for use by the contractor on successive deliveries.
- b. A MIDS On Ship (MOS) unit to be provided to the contractor approximately 30 days prior to the scheduled start of ATS Approval Demonstration. The unit shall be

returned to the Government no later than 30 days after completion of the Demonstration.

The following GFI will be provided as described below, and updates will be provided when available.

- a. Interactive Electronic Technical Manual (IETM) for Operations and Maintenance of MOS will be furnished within 30 days of Delivery Order award
- b. The MOS Lot 4 Technical Data Package (TDP) will be furnished
- c. MOS System Performance Specification (SPS) will be provided

5.0 TRAVEL (CLIN 0600)

Travel may be required under this contract and will be further defined and negotiated under Delivery Orders issued by the Government.

6.0 OTHER

6.1 Security

The contractor shall assign personnel having the appropriate security clearance levels, up to and including SECRET and NATO SECRET. The contractor shall maintain a facility that is cleared up to the SECRET level in accordance with the DD254. The contractor shall obtain National Security Agency (NSA) approval for custodianship of cryptographic equipment and material.

6.2 Place of Performance

The contractor shall be required to work at the contractor's facility as well as Government field activities, CONUS and OCONUS, for all aspects of the effort.

6.3 Inspections and Acceptance (CLINs 0100, 0200, 0400)

6.3.1 Acceptance Testing

All hardware will be inspected and accepted at origin. The contractor shall conduct and document an Acceptance Test of each system delivered to the Government utilizing an Acceptance Test Station (ATS) or equivalent at the contractor's facility. The Acceptance Test Procedure shall include EMC Features testing in accordance with the SPS. The contractor shall provide an Acceptance Test Procedure in accordance with CDRL A002, Test Procedure, for Government approval. Final acceptance of the system shall occur after successful completion of the Acceptance Test and the FPT and certifications have been successfully completed for the configuration. The contractor shall retain a copy of each Acceptance Test Report for the length of the contract for review by the Government upon request. The Acceptance Test Report shall be in accordance with CDRL A003, Test/Inspection Report. A Certificate of Conformance per FAR 52.246-15 will be acceptable for all spares deliveries.

6.4 Manpower Reporting

ENTERPRISE-WIDE CONTRACTOR MANPOWER REPORTING APPLICATION

The contractor shall report ALL contractor labor hours (including subcontractor labor hours) required for performance of services provided under this contract for the MOS Lot 4 Follow On 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 the labor executed during the period of performance during each Government fiscal year (FY), which runs October 1 through September 30. While inputs may be reported any time during the FY, all data shall be reported no later than October 31 of each calendar year, beginning with 2013. Contractors may direct questions to the help desk at help desk at: <http://www.ecmra.mil/>