Marine Corps Systems Command
Quantico, Virginia

Statement of Work

for

Transition Switch Module

29 October 2003

Prepared for:
Marine Corps Systems Command (C4I)
Quantico, Virginia 22134

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1 SCOPE. This SOW sets forth the work efforts required to design, develop, integrate, test, produce and prepare associated documentation, fabricate, provide logistic support, provide technical support, provide field service support, provide training, develop technical manuals and deliver the TSM.

This SOW includes the associated Program Management, System Engineering, Configuration Management, Quality Assurance, Testing, Integrated Logistics Support, Maintenance Planning, Supply Support, Technical Publications, Support and Test Equipment, Operations and Maintenance Training and System Testing.

The contractor is responsible for providing the necessary materials, services, and support documentation needed to complete the tasks identified in this SOW.

The scope of work includes support of the Government conducted Joint Interoperability Certification, Operational Test & Evaluation (OT&E) and retrofit of the Engineering Development Models (EDMs) to the final configuration of the TSM following OT&E and environmental testing. It is the Government's intent to leave the EDMs at the contractor's facility as GFE for development of continued technology insertion initiatives throughout the period of contract performance.

Innovative approaches, which meet or exceed the system requirements, will receive a higher rating.

COTS/GOTS modification. Excessive modification without justification will result in a lower rating.

Marine Corps Common Hardware Suite (MCHS) – The offeror's design shall use processors found on the MCHS. Compelling technical argument for the selection of a alternate processors must be provided.

OPTION:

It is the Government's intent to pursue technology insertion throughout the life of the TSM program. Emerging technologies will be inserted into the TSM program when the Government determines they have sufficiently matured.

The contractor shall perform a detailed technical assessment of the production TSM. This assessment shall address the projected TSM life cycle usefulness in terms of technology obsolescence and evolutionary development for all major end items in the TSM. The assessment shall include a projection of industry trends and future developmental technologies that will overcome identified end of life cycle or obsolete equipment.

The contractor shall recommend alternatives that address issues of interoperability, technology insertion, integration and modernization, cost breakdown as well as a systems engineering process necessary to implement these alternatives.

In support of this assessment, the contractor shall perform specialized in-depth analysis of potential improvements in the TSM. This may require making use of EDM's, or prototyping of hardware and/or software as necessary. In addition, specific mission-oriented investigations and experimentation may be accomplished.

The contractor, at the discretion of the government, shall be required to develop a detailed cost estimate for given alternatives. The estimate, at a minimum, shall include the requisite changes to TSM hardware/software baseline, production drawings, technical manuals, training materials, testing, integration, etc. In addition, the contractor shall provide a cost estimate to retrofit and refurbish fielded TSM's components to match given alternatives.

2 APPLICABLE DOCUMENTS. The following documents of the exact date and issue specified form a part of this Statement of Work (SOW) to the extent specified herein. In the event of conflict between the applicable documents and this SOW, the SOW shall take precedence. All second tier and below references cited in mandatory compliance documents shall be considered as guidance only. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 Military Standards and Specifications - Mandatory Compliance.

MIL-PRF-29612B	31 Aug 01	Training Data Products
MIL-PRF-49506	11 Nov 96	Logistics Management Information
MIL-STD-129P	15 Dec 02	Military Marking for Shipment and Storage
MIL-STD-196E	17 Feb 98	Joint Electronics Type Designation System
MIL-STD-461E	20 Aug 99	Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment
MIL-STD-882D	10 Feb 00	System Safety
MIL-STD-2073-1D(1)	10 May 02	DoD Standard Practice for Military Packaging

2.2 Military Standards and Specifications - Guidance Only.

MIL-STD-1686C	25 Oct 95	Electrostatic Discharge Control Program for Protection of Electrical and Electronics Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)

2.3 Federal Standard - Mandatory.

Not Applicable.

2.4 Drawings.

Not Applicable.

2.5 Handbooks - Guidance Only.

MIL-HDBK-61A	7 Feb 01	Configuration Management Guidance
MIL-HDBK-502	30 May 97	Acquisition Logistics
MIL-HDBK-512A	31 Oct 01	Parts Management
MIL-HDBK-29612-1A	31 Aug 01	Guidance for Acquisition of Training Data Products and Services (Part 1 of Part 5)

2.6 Other Government Documents. Unless otherwise stated, the following documents may be obtained from the Document Automation and Production Service, Building 4/D, 700 Robbins Avenue, Philadelphia, PA 19111-5094, or visit http://dodssp.daps.mil.

DoDD 4650.1	24 Jun 87	Management and Use of the Radio Frequency Spectrum
NTIA Manual		National Telecommunications and Information Administration

2.7 Non-Government Documents.

ANSI X3.27	1987	File Structure and Labeling of Magnetic Tapes for Information Interchange

(Application for copies of ANSI X3.27 should be addressed to the American National Standards Institute, 1819 L Street, NW, 6th Floor, Washington, DC 20036 or visit www.ansi.org.)

ASME-Y14.34M	11 Jun 97	Parts Lists, Data Lists, and Index Lists
ASME Y14.100M	30 Jan 98	Engineering Drawing and Related Documentation Practices

(Application for copies of ASME documents should be addressed to the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017-2392 or visit www.asme.org.)

ASTM-D3951	21 Dec 90	Packaging, Commercial

(Application for copies of ASTM-D3951-98 should be addressed to the American Society for Testing and Materials, 100 Burr Harbor Drive, West Conshohocken, PA 19428-2959 or visit www.astm.org.)

JESD625-A	Dec 1999	JEDEC Standard Requirements for Handling Electrostatic Discharge-Sensitive (ESDS) Devices
ANSI EIA649	1 Feb 99	National Consensus Standard for Configuration Management

(Application for copies of EIA documents should be addressed to Electronic Industries Alliance Corporate Engineering Department, 2500 Wilson Boulevard, Arlington, VA, 22201 or visit www.eia.org.)

IEEE/EIA 12207	1997	Standard for Information Technology – Software Life Cycle Processes

(Application for copies of IEEE/EIA 12207 should be addressed to the Institute of Electrical and Electronics Engineers, PO Box 1331, 445 Hoes Lane, Piscataway, NJ 08855-1331 or visit www.ieee.org.)

NAS 411	11 Mar 94	Materials Hazardous Management Program

(Application for copies of NAS 411 should be addressed to the Aerospace Industries Association of America, 1250 Eye Street, NW, Suite 1200, Washington, DC 20005-3924 or visit www.aia-aerospace.org.)

2.8 Forms.

DD Form 1494	Aug 96	Application for Equipment Frequency Allocation

3 REQUIREMENTS. The contractor shall perform all tasks required and delineated in this SOW to design, develop, integrate, test, produce, deliver and prepare associated documentation, provide logistic support, provide technical support, provide field service support, provide training, develop technical manuals and deliver the TSM in the quantity specified in the contract. Maxium production rates will be 20 TSMs per month with a long lead time of 120 days. The contractor shall provide all materials, equipment, hard tooling, personnel, and facilities necessary to manufacture, fabricate, integrate, produce, and deliver the types and quantities of deliverables specified by the contract. Upon successful completion of developmental test, operational test, and first article test, the Government may exercise contract options for integration, production, and fielding. The contractor shall obtain all necessary licensing and permissions required to ship deliverables worldwide.

3.1 Program and Data Management.

3.1.1 Program Management. The contractor shall establish and maintain program management practices throughout the period of performance. Program management practices shall provide visibility into the contractors' organization and techniques used in managing the program, specifically subcontractor and data management. Documentation shall be readily available to Government representative(s) during planned visits.

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

3.1.2 Subcontractor Management. The contractor is responsible for performance of requirements delineated in this SOW, and shall institute appropriate management actions relative to subcontractor performance. Requirements that are contractually specified shall apply to subcontractor performance; however, the contractor shall be accountable for compliance of subcontractors and is responsible for ensuring all deliverable products comply with the contract requirements.

3.1.3 Data Management. The contractor shall establish a single, centralized system for management of all data required under this contract. The contractor, in developing information that will be furnished to the Government, shall make the maximum use of existing data and provide maximum multiple use of technical information. Specific data management functions shall include schedule control for deliverables, maintenance of deliverables, approval of deliverable format, distribution and delivery of data products. The system shall include facilities for storage of all data developed or used for this contract and shall provide equal access to data by the Government. The contractor shall ensure all data is centrally available for Government review to ensure continuity of the system fabrication and supporting documentation. The Government reserves the right to review all data associated with and developed for the TSM.

3.1.3.1 Schedule Planning. The contractor shall maintain an accurate schedule of program events and recommend program schedules, including review and evaluation techniques, which provide for the earliest delivery schedule while at the same time satisfying all requirements in a cost effective manner. The program schedule shall include all significant events, and a Program Planning Milestone Chart shall depict major tasks and events from start to completion of the

contract. The contractor shall notify the Government in writing of any anticipated or projected work stoppages or delays that will impact schedules.

3.1.3.2 Assignment of Responsibility and Authority. The contractor shall identify the organizational elements responsible for the conduct of the activities delineated in this SOW. Responsibilities shall be assigned and clear lines of authority defined for determining and controlling the resources necessary to satisfy each element of this SOW. The following billets shall be considered key personnel. The contractor shall appoint, in writing, all persons filling these billets. The contractor shall notify the Government within ten days of any changes regarding authority, responsibility, or key personnel changes made by the contractor during the period of performance.

a. Program Manager. The contractor shall designate a Program Manager (PM) who shall possess sufficient corporate authority to manage, direct, execute and control all elements of the contract. The PM shall serve as the primary point of contact between the contractor and the Government, and be responsible for the coordination of all contractor activities related to the contract. The Program Manager shall have a minimum of 10 years of experience in Program Management and an education minimum of a Master Degree.

b. Systems Engineer. The contractor shall designate a Systems Engineer who shall possess sufficient authority to manage, direct, execute and control all engineering elements of the contract.

c. Test Engineer. The contractor shall designate a Test Engineer who shall possess sufficient authority to manage, direct, execute and control all test and engineering elements of the contract.

d. Configuration Management (CM) Manager. The contractor shall designate a CM Manager who shall possess sufficient authority to manage, direct, execute and control all CM elements of the contract.

f. Integrated Logistic Support (ILS) Manager. The contractor shall designate an ILS Manager who shall possess sufficient authority to manage, direct, execute and control all ILS elements of the contract.

g. Training Manager. The contractor shall designate a Training Manager who shall possess sufficient authority to manage, direct, execute and control all training related elements of the contract.

3.2 Government Furnished Property.

3.2.1 Government Furnished Equipment/Material. The Government will notify the contractor of the availability of Government Furnished Equipment (GFE/GFM). The contractor shall make any requests for additional GFE/GFM in writing to the Marine Corps Systems Command contracting officer. Such requests are subject to Government approval. If approved, these items

will be provided to the contractor within 60 days of receipt of contractor's written request. Proposals shall list required delivery date of GFE/GFM to meet proposed delivery schedules. The contractor shall provide for accountability, security and storage for the GFE/GFM provided. The contractor shall inspect and inventory all GFE/GFM received and identify and report any discrepancies/deficiencies within 10 days of receipt. The contractor shall provide a written request for disposition instructions for any items received which are inoperable or incorrect. The Government will forward an accountability agreement to the contractor for signature on an annual basis. The Management Control Activity, Marine Corps Logistics Base (Code 571-1/MCA), Albany, Georgia, is the control and coordination point for all Marine Corps GFE/GFM.

DI-MGMT-80389B, Receipt of Government Materiel Report

3.2.2 Government Furnished Information. The Government will furnish the Government Furnished Information (GFI) identified in the contract upon written request from the contractor to the Marine Corps Systems Command contracting officer. The contractor shall notify the Government of any deficiencies in the GFI received.

DI-MGMT-80596, Government Furnished Information Deficiency Report

3.3 Meetings, Formal Reviews, Conferences, and Audits.

3.3.1 Contractor Responsibilities. The contractor shall plan, host, attend, coordinate, support and conduct the meetings, in-process reviews, formal reviews, conferences, and audits (hereinafter called "reviews"). The reviews shall be conducted at Government and contractor facilities. Reviews requiring demonstration and/or examination of equipment shall be conducted at the contractor's facility. All such reviews shall be included in the program schedule and may be held concurrently with the Government's approval. The contractor shall prepare agendas and conference presentation materials, and provide minutes and reports following each review. The Government reserves the right to cancel any review or to require any review to be scheduled at critical points during the period of performance. Action item documentation, assignment of responsibility for completion and due dates shall be determined prior to adjournment of all reviews. A summary of all action items, responsible parties, and estimated completion dates shall be included with the minutes.

DI-ADMN-81249A, Conference Agenda
DI-ADMN-81250A, Conference Minutes
DI-ADMN-80508A, Technical Report – Study/Services

3.3.2 Post Award Conference. A post award conference shall be held at the contractor's facility within 30 days after contract award. The purpose of this review is for the contractor to review and demonstrate to the Government the management procedures, provide progress assessments, review of technical and other specialty area status, and to establish schedule dates for near term critical meetings/actions. The contractor shall present management, key personnel, and program implementation processes.

3.3.3 Logistics Guidance Conference. A Logistics Guidance Conference shall be held in conjunction with the Post Award Conference at the contractor's facility. This conference will be held to ensure a basic understanding of the requirements for each logistics element.

3.3.4 In-Process Review. In Process Reviews (IPR) will be held on a quarterly basis or as needed basis, at a date and location mutually agreed upon. The Government reserves the right to cancel any review or to require any review to be scheduled during the period of performance. The contractor's progress, management, technical support services (if any), integrated logistics support, administrative, assurance of compliance with contract requirements, program status, funding, problem identification and resolutions shall be agenda items. Actual versus expected performance of each area shall be addressed. The contractor shall prepare presentation materials providing an overview of all agenda items.

3.4 System Engineering. The contractor shall establish and maintain an effective system-engineering program throughout the design, testing and production processes, which shall include the following tasks:

3.4.1 Reviews.

3.4.1.1 Preliminary Design Review. The Preliminary Design Review (PDR) shall be held in conjunction with the Post Award Conference. The PDR shall be used to resolve any issues in the Performance Specification, however it will not be used as an opportunity to impose additional requirements. The PDR shall include each equipment, hardware, and software configuration items and related peculiar support equipment. The contractor shall show and/or demonstrate that evaluations of materials, lead times, tooling, fabrication techniques, assembly methods, test equipment, skills, processes, and inspection techniques have been accomplished for each equipment, hardware, and software configuration items and related support equipment, and the producibility objectives have been achieved. The reviews will evaluate the progress, technical adequacy, and risk resolution (on a technical, cost, and schedule basis) of the design and will assess the technical risk associated with the selected manufacturing (assembly) methods (processes). The PDR also shall identify all single source, sole source, and diminishing source(s).

3.4.1.2 Critical Design Review. The Critical Design Review (CDR) shall present a final design that incorporates all deficiencies identified from the PDR. The CDR shall be a detailed review of the hardware design for the TSM and all data items required by the contract. The contractor shall provide a trace capable of demonstrating the design furnished at CDR implements the performance requirements of the TSM, and present the methods used to verify and validate the design. An assessment of the results of producibility analyses conducted on system hardware will be made to ensure detailed producibility design solutions satisfy the established requirements. Topics covered at the CDR shall include, but not be limited to the following:

a. Detailed presentation of program plan indicating Design, Fabrication, Test Phases and Specification/Interface specification/drawings

b. Detailed presentation of Electrical/Mechanical/Software Design

c. EMI/Thermal/Cooling Design

d. Detailed Reliability/Maintainability Analysis

e. Environment, Safety and Health (ESH) Analysis

f. NBC Survivability

g. Packaging/Handling/Storage/Transportability

h. Testing documents

i. Interoperability

3.4.1.3 Production Readiness Review. The Production Readiness Review (PRR) shall be performed to formally evaluate the contractor's production readiness, identify existing or projected manufacturing problems, and areas of risk. The contractor shall demonstrate progress in the following areas: (1) attaining the program's production goals, (2) resolving manufacturing problems (or that a plan for their resolution acceptable to the Government has been developed), and (3) mitigating all production risks. The contractor shall show that the system design has included those key production factors (e.g., least cost, minimum time, manufacturing simplicity/flexibility, resource availability, etc.) necessary to assure the system can be acquired on schedule at minimum cost. The initial production readiness review shall be conducted at the contractor's facility. At the Government's discretion, follow-on production program reviews may be held quarterly at the contractor's facility. The review dates shall be contractor-proposed, Government-approved, and incorporated into the program schedule. The agenda of the PRR shall include, as applicable, at least the following considerations:

a. A Manufacturing Program Review to include the overall manufacturing system and detailed factors such as manufacturing organization, responsibilities, facilities and equipment, manufacturing methods, and production flow.

b. A status review of all production efforts for cost and schedule considerations.

c. A status review of manufacturing technology and other previously recommended actions to reduce cost, manufacturing risk, and industrial base concerns.

d. The identity of open production concerns which require additional direction/effort to minimize risk to the production program.

e. A status review of production engineering efforts, tooling and test equipment demonstrations, and proofing of new materials, processes, methods, special tooling, test equipment.

f. A status of the hazard list from Environmental, Safety and Health (ESH) analysis.

g. The status of long lead items for production, if any.

3.4.2 Open Systems Design. The contractor shall use an open systems approach as the preferred design strategy to: (1) choose commercially supported specifications and standards for selected system interfaces (external, internal, functional and physical), products, practices, and tools; and (2) build open system architectures as the primary foundation in developing the proposed system and its elements. Open systems is a system design philosophy that uses widely-accepted, industry-approved interface standards that will allow technological upgrades in system components to be easily inserted in the future. The contractor shall identify the means for ensuring conformance to open systems standards and profiles throughout the development process and provide evidence that the process being used to manage the open systems approach support open system benefits such as portability, interoperability, technology insertion, vendor independence, reusability, scalability, and commercial product based maintainability.

3.4.3 Human Systems Integration. The contractor shall apply effective Human Systems Integration (HSI) principles during TSM design, production and integration. The contractor shall ensure manpower, personnel, training, personnel survivability and habitability, and human factors engineering requirements have been incorporated into the layout, design, and arrangement of equipment having an operator or maintainer interface. The contractor shall also integrate HSI principles into their systems safety program. The HSI program shall ensure the TSM can be operated, maintained, supported and controlled in its intended environment, including Nuclear, Biological, and Chemical Mission Oriented Projected Posture IV (MOPP IV).

a. Manpower. The manpower requirements shall ensure that the most efficient and cost effective use of manpower and contractor support is being used and identify any cost or schedule issues that could adversely impact the TSM.

b. Personnel. The contractor shall establish personnel principles that will reduce manpower and training costs.

c. Training. The contractor shall apply principles that will enhance the user's capabilities and reduce individual and collective training costs. The contractor shall maximize the use of new learning techniques, simulation technology, embedded training, and instrumentation systems to provide anytime, anyplace training that reduces the demand on the training establishment and reduces Total Ownership Cost (TOC).

d. Human Factors Engineering. Human factors design requirements shall be established to develop effective man-machine interfaces. It shall preclude system characteristics that require extensive physical, complex manpower or training intensive tasks that result in frequent or critical errors.

3.4.4 Reliability and Maintainability Program. The contractor shall maintain a

comprehensive Reliability and Maintainability (R&M) program to ensure the TSM meets the R&M standards set forth in the Performance Specification. The design shall be monitored throughout the entire period of performance to identify and assess any changes, which would impact reliability or maintainability. The contractor shall develop reliability analysis and predictions as required to ensure compliance with the Performance Specification. The program shall encompass all aspects of reliability with respect to design selection of components, predictions, and testing, If it is determined that an item is a throwaway, an analysis shall be performed at the next higher indenture level. The contractor shall maintain and make available to the Government all R&M data on any vendor or subcontractor supplied item and shall inform the Government of any part or component, which will degrade system R&M requirements. The R&M program shall minimally include the following tasks:

3.4.4.1 Procedures and Controls. The contractor shall maintain procedures and controls, which ensure products, obtained from suppliers, vendors and subcontractors meet reliability requirements.

a. Establish, implement, and maintain documented procedures, which detect and/or preclude the use of substandard or counterfeit parts in the production process, and impose similar requirements on subcontractors.

b. Provide the Government with reasonable notice of any special R&M program review meetings scheduled with subcontractors so Government representatives may attend at their discretion.

3.4.4.2 Reliability Predictions. The contractor shall provide detailed design reliability predictions based on a defined configuration and associated models. The predictions shall be allocated down to the lowest indenture level and updated each time significant design or mission profile changes significantly impact the TSM or any of its subsystems. The reliability modeling method shall mathematically relate the reliability block diagrams of the TSM to time-event relationships. These tasks shall be performed down to the line replaceable unit level.

DI-RELI-81497, Reliability Prediction and Documentation of Supporting Data

3.4.4.3 Maintainability Predictions. The contractor shall develop maintainability predictions to estimate the maintainability of the TSMs at the organizational and intermediate levels, and to make a determination of whether the specified maintainability requirements can be achieved with the prescribed support and personnel/skill requirements. The maintainability predictions shall be based on the failure rate of the components and the repair time required at the organizational and intermediate levels.

DI-MISC-80508A, Technical Report - Study/Services

3.4.4.4 Failure Reporting, Analysis, and Corrective Action System. The contractor shall develop a closed loop failure reporting system, procedures for analysis of failures to determine

cause, and documentation for recording corrective actions taken. The Failure Reporting, Analysis, and Corrective Action System (FRACAS) shall include uniform failure reporting, failure analysis reports and corrective actions. All hardware/software failures from system level down to the Line Replaceable Unit (LRU) level shall be subject to these requirements throughout the testing period (all First Article Testing, Software Stress Testing and Production Acceptance Testing). The contractor shall notify the Government within 24 hours of any critical failure, which impacts cost, schedule, producibility, or interface/performance. Failures, which are not defined as critical, shall be reported within 10 working days of the occurrence.

DI-RELI-80255, Failure Summary and Analysis Report

3.4.5 Testability. The contractor shall develop and implement a Testability Program to ensure the TSM is designed to provide the end-user and technicians assurance of system operation and ease in fault isolation. The Testability Program may be included with the Reliability and Maintainability Program.

3.4.6 Electromagnetic Interference Test Procedures. Prior to commencement of Electromagnetic Interference (EMI) testing, the contractor shall develop EMI test procedures in accordance with the test procedures of MIL-STD-461E to verify compliance with the EMI requirements of TSM specification.

DI-EMCS-80201B, Electromagnetic Interference Test Procedures (EMITP)

3.4.7 Electromagnetic Interference Test Report. The contractor shall prepare an Electromagnetic Interference (EMI) test report documenting the compliance of TSM EMI requirements of the contract specification. The contractor shall also discuss in the test report the resolution(s)/EMI fix(es) for all of the EMI performance requirements for which the TSM was not in compliance.

DI-EMCS-80200B, Electromagnetic Interference Test Report (EMITR)

3.4.8 Grounding, Bonding, and Shielding. The contractor shall ensure that the TSM and subsystems are properly grounded, bonded and shielded to prevent ground loops and common ground returns for power/control circuits to minimize electromagnetic interference. The contractor shall ensure that all externally exposed metal parts, shields, control panels, switch handles, connectors, bushings, etc. are grounded to the system chassis.

3.4.9 Electrostatic Discharge Control. The contractor shall establish, implement and document an Electrostatic Discharge (ESD) Control program following the guidelines provided in JESD625-A. The ESD protective measure shall be used in manufacturing, packaging, storing, and transportation of ESD sensitive components. The contractor shall ensure that ESD identification markings on all ESD sensitive subassemblies are visible during equipment installation, maintenance or repair. MIL-STD-1686C, paragraph 5.7 may be used for guidance.

3.4.10 Radio Frequency Spectrum Compatibility. The TSM and subsystems shall comply with

DoD, National and International regulations for the use of the electromagnetic spectrum (such as the NTIA Manual and DoDD 4650.1). The contractor shall ensure that TSM operates using the assigned or allocated frequencies. The contractor shall submit the data required to complete DD Form 1494 for obtaining an approved frequency for the TSM.

3.4.11 Quality Management System. The contractor's quality management system shall ensure product conformation to contractual requirements. The contractor shall have implemented, documented, and have previously demonstrated the ability to maintain the quality management equivalent to best commercial practices (i.e. ISO 9001). The contractor shall make available all quality management documentation for the Government to review upon request. The contractor's plan for the quality management system shall address the following elements:

a. Management Responsibility. Procedures to define, document, and implement a policy for quality.

b. Quality System. Procedures to establish, document, and maintain a quality system, which includes a quality manual, system procedures, and quality planning.

c. Contract Review. Procedures to establish and maintain documented procedures for contract review.

d. Design Control. Procedures to establish and maintain documented procedures to control and verify design of the product to ensure conformance to specified requirements.

e. Document and Data Control. Procedures to establish and maintain documented procedures to control all documents and data (including hard copy and electronic media) including such documents as standards and Government drawings.

f. Purchasing. Procedures to establish and maintain documented procedures to ensure that purchased product, associated documents and data conform to requirements. Sub-contractors are to be evaluated and selected on their ability to meet subcontract requirements and type and extent of control exercised by the supplier over subcontractors is to be defined.

g. Control of Government-Supplied Product. Procedures to establish and maintain documented procedures for the control of verification, storage and maintenance of Government-supplied product provided for incorporation into the supplies or for related activities.

h. Product Identification and Tractability. Where appropriate, procedures to establish and maintain documented procedures for identifying the product from receipt and during all stages of production, delivery, and installation.

i. Process Control. Procedures to identify and plan the production, installation and servicing processes, which directly affect quality, and to ensure these processes are carried out under controlled conditions.

j. Inspection and Testing. Procedures to establish and maintain documented procedures for inspection and testing activities, in order to verify that the specified requirements for the product are met.

k. Control of Inspection, Measuring and Test Equipment. Procedures to establish and maintain documented procedures to control, calibrate and maintain inspection, measuring and test equipment, (including test software) used by the supplier to demonstrate the conformance of product to the specified requirements.

l. Inspection and Test Results. Procedures to ensure that the inspection and test status of products are identified and maintained throughout the production, installation and servicing of the product. And, to ensure that only products that passed the required inspections and tests (or released under an authorized concession) are dispatched, used or installed.

m. Control of Non-Conforming Product. Procedures to establish and maintain documented procedures to ensure that product that does not conform to specified requirements is prevented from unintended use or installation.

n. Corrective and Preventive Action. Procedures to establish and maintain documented procedures for implementing corrective action in the handling of Government complaints, product non-conformities, and the application of controls to ensure corrective action is taken and that it is effective. Preventive action procedures will detect, analyze, and eliminate potential causes of non-conformities.

o. Handling, Storage, Packaging, Preservation and Delivery. Procedures to establish and maintain documented procedures to prevent damage or deterioration of product.

p. Control of Quality Records. Procedures to establish and maintain documented procedures for identification, collection, indexing, access, filing, storage, maintenance and disposition of quality records. Quality records shall be maintained to demonstrate conformance to specified requirements and the effective operation of the quality system.

q. Internal Quality Audits. Procedures to establish and maintain documented procedures for planning and implementing internal quality audits to verify whether quality activities and related results comply with planned arrangements and to determine the effectiveness of the quality system.

r. Training. Procedures to establish and maintain documented procedures for identifying training needs and provide for the training of all personnel performing activities affecting quality. Appropriate records of training shall be maintained.

s. Servicing. Where servicing is a specified requirement, to establish and maintain documented procedures for performing, verifying and reporting that the servicing meets the specified requirements.

t. Statistical Techniques. The supplier shall identify what statistical techniques are to be used for computing, documenting, verifying, and controlling both the contractor's process capability and his product's characteristics. He should also identify how they are to be implemented.

3.5 Environmental Safety and Health.

3.5.1 System Safety. The contractor shall identify and evaluate safety and health hazards, define risk levels, and establish a program that manages the probability and severity of all hazards associated with development, use, and disposal of the system in accordance with MIL-STD-882D. Residual risks will be evaluated by the Government in accordance with Tables A-I through A-IV of MIL-STD-882D and accepted as appropriate. The contractor must identify all explosive safety risks as such in the system safety documentation.

3.5.1.1 Safety Assessment. The contractor shall perform and document a Safety Assessment to identify all safety features of the hardware, software, and system design and to identify procedural, hardware and software related hazards that may be present in the TSM including specific procedural controls and precautions that should be followed. In addition, the contractor shall make recommendations applicable to hazards at the interface of his system with the other system(s) as contractually required.

3.5.1.2 Safety Assessment Report. The contractor shall provide a Safety Assessment Report (SAR) that documents the Safety Assessment and clearly identifies any residual risks of the TSM. The SAR shall document system safety assessment of procedures involved in system production, deployment, installation, assembly, test, operation, maintenance, servicing, transportation, storage, modification, demilitarization, and disposal. The SAR shall include a signed statement that all identified hazards have been eliminated or their associated risks controlled to acceptable levels and that the TSM is ready to test, field or operate. In addition, the contractor shall make recommendations applicable to hazards at the interface of this TSM with other systems.

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

3.5.2 Battery Safety Assessment. The contractor shall document the battery safety assessment in the Safety Assessment Report (SAR). The SAR shall include the battery risk assessment, recommendations, procedures and other corrective actions to reduce hazards to an acceptable level.

3.5.3 Hazardous Materials Management Program. The contractor shall implement a Hazardous Materials Management Program (HMMP) in accordance with or similar to NAS 411. The contractor shall avoid the use of toxic chemicals, hazardous materials and ozone depleting substances in the design, operational support and disposal of the TSM. Manufacturing processes that will have a detrimental impact upon the environment shall be avoided. More information on chemicals and hazardous materials to be avoided can be obtained from the Environmental Protection Agency (EPA). The contractor shall make available Material Safety Data Sheets

(MSDS) to the Government for review.

3.5.3.1 Hazardous Materials Management Program Plan. The contractor shall provide a Hazardous Materials Management Program (HMMP) Plan to the Government for review and approval.

DI-MGMT-81398, Hazardous Materials Management Program (HMMP) Plan

3.5.3.2 Hazardous Materials Management Program Report. The contractor shall provide a Hazardous Materials Management Program (HMMP) Report to the Government for review and approval.

DI-MISC-81397, Hazardous Materials Management Program (HMMP) Report

3.5.4 Pollution Prevention Program. The contractor shall implement a pollution prevention program that shall identify and quantify impacts, such as noise, as early as possible during system development, design, integration, and disposal, and identify and implement actions needed to prevent or abate the impacts. The contractor shall make available information regarding the pollution prevention program and implementation progress to the Government.

3.6 Configuration Management Process. The contractor shall maintain a configuration management (CM) process for the control of all hardware and software configuration documentation, media and parts representing or comprising the TSM. The principles contained in EIA-649 and MIL-HDBK-61A may be used for guidance. The contractor shall provide their Configuration Management Plan to the Government for review. The contractor's CM process shall consist of configuration identification, configuration control, configuration status accounting, and configuration audits. Consideration for interfacing with other acquisition requirements such as design review, assurance, and other program related disciplines shall be addressed. The contractor shall designate a CM representative to serve as a primary point of contact to the Government for all CM matters. The contractor's representative shall be responsible for any subcontractor's CM efforts. The contractor shall notify the Government of any changes at the contractor's facility, which affect the contractor's established CM process.

DI-CMAN-80858B, Contractor's Configuration Management Plan

3.6.1 Configuration Identification. The contractor shall participate in a joint Government/contractor integrated team to designate configuration items (CIs) to be managed by the Government and those to be managed by the contractor at a lower level/tier. For those CIs that have been identified for Government control, the contractor shall provide form, fit, function, and interface documentation necessary for configuration status accounting. The contractor shall establish management practices for those lower level/tier CIs.

3.6.2 Configuration Management Meetings/Audits.

3.6.2.1 Interface Control Working Group. The contractor shall be a participant in the Interface

Control Working Group (ICWG) established between Government designated activities to address interface requirements of the TSM with other systems. The ICWG will meet, as necessary, to resolve any interface problems. Meetings shall be held in conjunction with other reviews, if possible.

3.6.2.2 Functional Configuration Audit. The Functional Configuration Audit (FCA) shall be performed to verify the program and its configuration items (CIs) are accurate, complete, and compatible, and the CI has achieved the performance and functional characteristics delineated in the Performance Specification. The Government and the contractor shall conduct the FCA jointly, at a time and place mutually agreed to, with the Government chairing the audit. As part of the configuration management plan/process submitted with the proposal, the contractor shall provide an approach and proposed schedule for conducting the FCA and identification of the CIs/CSCIs to be audited and/or specific units to be audited. The contractor shall participate and assist the Government in the development of the FCA, using the guidelines contained in MIL-HDBK-61A, section 8. The contractor shall be responsible for providing the system to be audited, facilities, personnel, documentation (including drawings), and other support as may be required. The contractor shall develop a configuration audit summary report after each audit. The contractor shall correct all audit discrepancies after Government review and document them in the final configuration audit summary report. The functional baseline will be validated upon completion of the FCA and resolution of audit discrepancies.

DI-CMAN-81022C, Configuration Audit Summary Report (Functional)

3.6.2.3 Physical Configuration Audit. The PCA shall be used to examine the actual configuration of the CI which is representative of the product configuration in order to verify that the related design documentation matches the design of the deliverable CI. The PCA shall validate the supporting processes that the contractor uses in the production of the CI. The PCA shall verify that any elements of the CI that were modified or redesigned meets the requirements of the CI's performance documentation. All newly developed or modified portions of the system shall accurately reflect form, fit and function information as provided on the control drawings for nondevelopmental/commercial off-the-shelf items. A PCA shall be conducted on a first production item selected at random by a Government PCA team to determine that the as-built configuration matches the design documentation. The PCA shall verify that engineering drawings and other documentation for all newly developed or modified portions of a CI are accurately represented in the production CI. The Government and the contractor shall jointly conduct the PCA. The Government will chair the audit. All of the audit discrepancies (action items) shall be corrected by the contractor prior to Government acceptance and approval of the PCA and Production Release. The contractor shall correct all discrepancies, and shall submit corrections/updates to the Government, within 20 working days. In the event of incremental PCAs, each one will address any prior open action items. A final (summary) PCA shall be conducted to address the status of all of the action items that have been identified during the incremental audits and to document the status of the PCA in the minutes and certifications. In the event the documentation does not accurately reflect the CI, production shall cease until all discrepancies are corrected. The PCA shall establish the Product Baseline. No changes to this baseline shall be made without going through the ECP process

DI-CMAN-81022C, Configuration Audit Summary Report (Physical)

3.6.3 Parts Management Program. The contractor is encouraged to establish and maintain a Parts Management Program that will ensure the use of parts that meet contractual requirements, reduce proliferation of parts through standardization and enhance equipment reliability and supportability, and proactively manage obsolescence. The contractor may use MIL-HDBK-512A as a guide for developing and maintaining the parts management program.

3.6.3.1 Diminishing Manufacturing Sources/Obsolescence. The contractor shall establish a proactive program to identify items, including spare parts, that have become or will become obsolete and/or are subject to diminishing manufacturing sources (DMS). The contractor shall develop and provide recommendations relating to the identification of action plans to mitigate the schedule and cost risk associated with obsolescence. The Contractor shall submit notification to the Government when changes occur to commercial equipment or software that is being procured or fabricated by the contractor as a COTS item and the Government does not control the developer's design. The contractor shall convey this information along with recommended solutions, including alternate sources, parts, costs, etc. to the Government on quarterly basis. The report shall be in contractor format. The Government may direct the contractor to obtain specific item(s) based on priority of the mission, need, or time to repair.

DI-MISC-80508A - Technical Report - Studies/Services

3.6.4 Baseline Management. The contractor shall be responsible for maintaining the currency and accuracy of the established baseline to ensure form, fit and function of the TSM. The contractor shall establish definitive processes, which identify how the baseline will be managed/maintained. These processes shall be defined in the contractor's configuration management plan and made available for Government review.

3.6.4.1 Functional Baseline. The Performance Specification establishes the functional baseline. Government approval shall be required prior to making changes to the functional baseline.

3.6.4.2 Allocated Baseline. The allocated baseline will be established upon successful completion of the overall system Critical Design Review (CDR) with all associated documentation. The allocated baseline shall describe the CI's/CSCI's to a level of design detail which is greater than that for a functional baseline. The allocated baseline shall be supplemented by specifications, drawings, and related data as necessary to specify: (1) the essential CI functional characteristics, as allocated from higher-level CI; (2) external and internal interface requirements for each CI; (3) physical characteristics necessary to ensure compatibility with associated systems and CI's; and (4) constraints on the design of a CI, including Government Furnished Equipment (GFE) employed, envelope dimensions, component standardization and ILS requirements. Government approval shall be required prior to making changes to the allocated baseline.

3.6.4.3 Product Baseline. The contractor shall establish the product baseline by the successful

completion of the PCA. The product baseline describes all the necessary functional and physical characteristics including verifications required to demonstrate that the TSM meets all required performance parameters. The contractor shall make changes to the product baseline only through the Engineering Change Proposal (ECP) process.

3.6.5 Configuration Control. The contractor shall establish and maintain positive control methods and procedures that ensure the integrity and traceability of CI design throughout the life cycle of EDM and/or Production. The contractor shall apply configuration control to established CI's and to newly developed CI's. Once baselines are established, the contractor shall not implement a design or performance change to CI's without receiving prior authorization from the contracting activity. The need to deviate from the written procedures or materials contained in engineering drawings or other technical documentation shall be requested by the electronic submission of Engineering Change Proposals (ECPs) or Requests For Deviation (RFDs). The creation and submission of ECPs and RFDs shall be accomplished using MEARS CREATE software application that resides at a secure web site, <https://mearsweb2.redstone.army.mil>. For the purpose of gaining access to the web site, the contractor shall request user-id and password privileges from the Requiring Office identified in Block 6 of the applicable Contract Data requirement List. The contractor shall direct any technical or functional questions concerning usage of MEARS CREATE software to the Requiring Office for guidance. The Contractor shall notify the Requiring Office by electronic mail when completed ECP/RFDs are ready for formal submission.

DI-CMAN-80639C Engineering Change Proposals
DI-CMAN-80640C Requests for Deviation

3.6.5.1 Specification Change Notice (SCN) and Notice of Revision (NOR). The contractor shall process SCNs concurrently with the preparation of an ECP for each specification that would require revision if the ECP being prepared were to be approved. SCNs shall be submitted as supplemental enclosures to Class I MEARS ECPs. The Government shall approve SCNs at the time of ECP approval. The contractor shall prepare NORs, when deemed necessary by the contractor, to describe or justify a proposed change. The contractor shall submit the NORs as supplemental enclosures to Class I MEARS ECPs. MIL-HDBK-61 or ANSI EIA-649 may be used as guidance in the preparation of these documents.

DI-CMAN-80642C, Notice of Revision (NOR)

3.6.5.2 Notification of Changes to Commercial Equipment/Software. The contractor shall submit notification to the Government when changes occur to commercial equipment or software, which is being procured or fabricated by the contractor off-the-shelf, and the Government does not control the developer's design.

DI-MISC-80508A, Technical Report - Study/Services (CN)

3.6.6 Configuration Status Accounting. The contractor shall utilize the MEARS CREATE and REVIEW modules to identify the status of any ECP/RFDs under development, review and the

disposition. The Government will accomplish the creation of these CSA records in the MEARS REVIEW module as a by-product of the program using MEARS.

DI-CMAN-81253A, Configuration Status Accounting

3.6.6.1 Serialized Tracking. The contractor shall record and provide to the Government the serialized configuration of primary components down to the LRU level. The following information shall be part of the Configuration Status Accounting (CSA) Information, updated as the CSA is updated, and made available for Government review during scheduled meetings: (a) Platform ID (VIN, U.S.M.C. Number, Registration Number); (b) System Designation/Model Number; (c) Installed Part Number and CAGE; (d) Installed Serial Number; (e) Part Number Nomenclature; (f) Installation Date; (g) Installation Activity.

3.6.7 Engineering Drawings.

3.6.7.1 Developmental Design Drawings. The contractor shall create developmental design drawings and associated lists. If furnished by the Government, the contractor shall use existing drawings as the basis for creating the developmental design drawings. Revised and/or updated existing drawings and new drawings shall be included in the developmental design drawing package. Developmental design drawings shall be used as the engineering data to support design analysis and the development of pre-production hardware. The developmental design drawings shall serve as the basis for establishing the allocated baseline and for future development of the product drawings. These drawings shall also be used for configuration management and for controlling and using materials, parts, and assemblies whether produced in-house or vendor supplied. Those items which have been developed at private expense and are considered proprietary, and for which the Government has not acquired unlimited rights, shall be documented in control drawings.

DI-SESS-81002B, Developmental Design Drawings and Associated Lists

3.6.7.2 Product Drawings. The contractor shall develop a complete product drawing package and associated lists. This process may require the revision and update of existing drawings, and/or development of new drawings to meet the requirements of product drawings and associated lists. Revised and newly created drawings shall be developed to document any design change and shall reflect all changes resulting from Government approved ECPs. Existing, revised, and new product drawings and associated lists shall be used as the engineering data for procuring, controlling, and using materials, parts, and assemblies whether produced in-house or supplied by the vendor. The drawings shall be used for the manufacture, assembly, provisioning, inspection, testing, and configuration management of the materials, parts, modules, subassemblies, and assemblies of the equipment covered under this contract. The drawings and associated lists shall not carry any proprietary markings and provide the necessary design, engineering, manufacturing, and quality assurance requirements information necessary to enable the procurement or manufacture of an interchangeable item duplicating the physical and performance characteristics of the original product, without additional design engineering effort or recourse to the original design activity. Those items which have been developed at private

expense and are considered proprietary, and for which the Government has not acquired unlimited rights, shall be documented in control drawings. New product drawings shall conform to ASME Y14.100 and ASME Y14.34M.

DI-SESS-81000B, Product Drawings and Associated Lists

3.6.7.3 Vendor Item Control Drawing. The contractor shall prepare a vendor item control drawing for commercial item(s) approved for use in the design and not covered by Government or nationally recognized industry association specifications and standards. The contractor shall provide evidence that the part complies with the requirements of the applicable part documentation. Existing test data (such as supplier originated objective evidence of compliance or Government/Industry Data Exchange Program (GIDEP) reports) shall be used to the maximum extent practicable.

3.7 Testing/Verification.

3.7.1 Test Plan. The contractor shall prepare a Test Plan (TP) that encompasses all sub-system and system level testing. The TP shall be the top-level working document that ties all contractor and subcontracting test activities together. The Government shall reserve the right to review and approve the TP and all applicable updates. The following areas shall be emphasized in the TP:

a. Test event

b. Purpose of the test

c. Date of test start and end

d. Location of the test

e. Need for Government test support, especially laboratories

f. Overall schedule of individual tests

g. Interoperability analysis/testing

DI-NDTI-80566, Test Plan

3.7.2 Contractor Support to Government Testing. The contractor shall support Government test efforts including Developmental Testing and Operational Testing by providing on-site personnel and in-house support. The contractor shall support each Government test by providing on-site maintenance, training, logistics, and technical support for the period of the test. Test support requirements will be tailored to the test being conducted. The contractor shall provide all required organizational, intermediate, and depot level support equipment and spare parts needed to maintain the TSM and ancillary equipment during each test. The contractor shall analyze test

data, conduct failure analysis, and maintain a data tracking system throughout all test efforts. Government testing includes Joint Interoperability Certification Testing, Operational Test & Evaluation, and System Integration Testing.

3.7.3 Reporting Test Results - KPP and CSR. For other than key performance parameters (KPP), and critical system requirements (CSR), the contractor shall certify by signature on the recorded data sheets to indicate the validity of the test results. The Government shall be notified of any KPP or CSR that failed (or is failing) to achieve the allocated threshold. KPP "failures" shall be reported immediately and CSR's within 24 hours. Both shall be followed up in writing in the form of a report. KPP/CSR reports shall include a time-phased projection of when the threshold will be achieved or exceeded. This report shall address the following as a minimum:

a. System requirements -- cite specific source document and paragraph

b. Parameter to be met -- annotate KPPs

c. Parameter threshold/objective

d. Demonstrated value (of parameter) to date

e. Projected "get-well" date

f. Analysis/assessment of the test results

DI-MISC-80508A, Technical Report – Study/Services (KPP/CSR)

3.7.4 System Integration Test. The contractor shall develop and implement System Integration Test (SIT) procedures to demonstrate the adequacy and suitability of the contractor's integration processes and procedures for achieving the performance inherent in the design. The results of the test shall demonstrate the techniques and processes employed do not degrade the design and meet all requirements in the Performance Specification. Government personnel will conduct the SIT at the MCTSSA Systems Integration Environment. The contractor shall provide support in accordance with paragraph 3.7.2.

DI-NDTI-80603, Test Procedure (SIT)

3.7.5 Test Readiness Review. The contractor shall conduct a Test Readiness Review (TRR) 60 days after Government receipt of draft First Article Test procedures. The purpose of the TRR is for the contractor to conduct a formal review of the contractor's readiness for testing. Results of the TRR shall be documented in the test inspection report and be made available to the Government 60 days after completion of testing. Emphasis shall be placed on system requirements using test results and their analysis. Remaining "problem areas" and their projected "get-well" dates shall be addressed.

3.7.6 First Article Test. The contractor shall develop and implement First Article Test (FAT)

procedures to demonstrate the adequacy and suitability of the contractor's production processes and procedures for achieving the requirements in the Performance Specification. The results of the test shall demonstrate that the manufacturing and production techniques employed do not negatively impact established requirements. The Government shall be notified of this test(s) 30 days in advance. The contractor shall successfully complete First Article Test Hardware Testing (as identified in Table 4 of the Performance Specification) prior to submission of equipment for First Article Test Systems Integration Testing (as identified in Table 4 of the Performance Specification).

DI-NDTI-80603, Test Procedure (FAT)
DI-NDTI-80809B, Test/Inspection Report (FAT)

3.7.6.1 Nonconformance of First Article. In the event the first articles fail to meet requirements as described in the Performance Specification, the contractor shall submit plans for the corrective action or disposition to the Government for approval. Minor failures may be corrected during the testing, with Government approval. Production shall not be initiated without Government approval. Failure of First Article Test of any one of the modules (DEOS, DITS or RSAM) may not necessarily preclude authorization to proceed with production on the remaining modules.

DI-RELI-81315, Failure Analysis and Corrective Action Report

3.7.7 Production Acceptance Test. The contractor shall develop and implement Production Acceptance Test (PAT) Phase I and PAT Phase II procedures to demonstrate the adequacy and suitability of the contractor's production processes and procedures for achieving the performance inherent in the design. Production Acceptance Testing shall be conducted in two phases.

a. Phase I shall demonstrate the system meets all requirements as identified in the Requirements/Verification Cross Reference Matrix contained in the Performance Specification. The contractor shall conduct Production Acceptance Test (Phase I) at the contractor's facility prior to shipment. The Government shall witness PAT (Phase I) testing.

b. Phase II shall demonstrate that shipment of the equipment to field units has not degraded its capability. The contractor shall develop procedures for Phase II. PAT Phase II procedures shall utilize installation checkout and test procedures developed in accordance with TMCR TSM-03 (Chapter 3 of the System Manual) where applicable. The Government will conduct Production Acceptance Testing (Phase II) at destination utilizing this set of procedures. Phase II procedures may be a subset of Phase I procedures. Acceptance of units will only be accomplished after successful completion of PAT II.

DI-NDTI-80603, Test Procedure (PAT I & II)
DI-NDTI-80809B, Test/Inspection Report (PAT I)

3.7.8 Refurbishment and Retrofit of Units. The contractor shall refurbish and retrofit all EDMs to include all approved corrective actions and modifications. All refurbished and

retrofitted units must undergo Production Acceptance Test (PAT) and are to be delivered. It is the intent of the Government to deliver EDMs in place for use in continuing technology insertion efforts for the duration of the contract.

3.7.9 Software Stress Test. The contractor shall plan and conduct a software stress test. The contractor shall determine the scope of software stress testing required to ensure the software being integrated meets all specified technical, operational, and performance requirements and the acceptance criteria as described in the Software Test Description. Test data shall include normal and abnormal, legal and illegal inputs. All test plans and procedures shall be subject to review and approval by the Government. Test results shall be provided to the Government.

DI-IPSC-81439A, Software Test Description
DI-NDTI-80809B, Test/Inspection Report (S/W)

3.7.10 Interoperability Testing. The contractor shall make EDMs available for interoperability testing by the Joint Interoperability Test Command (JITC), Fort Huachuca, AZ to ensure that the TSM is interoperable with the systems specified in the Performance Specification. The contractor shall provide support for JITC testing IAW paragraph 3.7.2.

3.8 Integrated Logistics Support. The contractor shall plan and conduct an Integrated Logistics Support (ILS) program, which shall govern the management of the ILS effort. The ILS effort shall be conducted as an integral part of the development and integration process to define the range and depth of the required support, and address all applicable and related elements of logistics.

3.8.1 ILS Integrated Product Team. A joint Government/contractor Integrated Product Team (IPT) shall be established to monitor the status of the ILS program implementation. The IPT shall provide a means for coordinating logistics matters, schedules and SOW performance, ensuring adequacy and timeliness of action items, and assisting the Government ILS manager in discharging their responsibilities. The Government will appoint the chairperson of the IPT. Sub-teams or committees may be established as necessary to monitor such program elements as tests or demonstrations.

3.8.2 IPT Meetings. The joint IPT shall meet to review ILS program progress as required. The meetings shall be held at times and places mutually agreed to by the Government and contractor. As a minimum, the agenda shall provide for status reporting, analysis of problem areas, evaluation of schedules and proposed changes to the ILS program. Each open agenda item shall have a completion date and the action officer responsible shall provide the status at subsequent meetings. IPT meetings shall normally be conducted in conjunction with IPRs.

3.8.3 Integrated Logistics Support Process. The contractor shall have a documented ILS process that identifies how the ILS elements will be used to meet the logistics support requirements for the TSM. The ILS process shall also assign responsibilities, establish milestones for executing the ILS program. The contractor shall describe the process, involving both the Government and the contractor, which shall be employed in planning, developing and

acquiring the logistics resources for test support and operational support at all specified maintenance levels. The ILS process shall ensure the TSM, when fielded, will satisfy all supportability criteria. The contractor shall draft, review and update the Integrated Support Plan (ISP) to reflect changes emanating from program changes, reviews and other actions affecting the logistics aspects of the program. The contractor's program/process shall be available for Government review, upon request.

DI-MISC-80508A Technical Report – Study/Services (Integrated Support Plan)

3.8.4 Warranty Performance System. The contractor shall establish and maintain a warranty performance system that identifies and documents all items to be warranted under this contract. Each item warranted shall be indexed and identified by serial number, model or part number, and date of acceptance by the Government. Warranties shall become effective based upon the acceptance by the Government of each system. All pertinent data required for the Government to pursue warranty provisions, remedy, and relief for each item shall be maintained by the contractor for the duration of the warranty period. All warranty claims and transactions shall be documented and made available for Government review during scheduled meetings and/or reviews.

3.8.4.1 Warranty. The contractor shall provide a parts and labor warranty covering workmanship, materials, design, and performance characteristics of the TSM. Said warranty shall apply to all contractor designed/developed interfaces and COTS hardware items but shall exclude GFM and COTS software.

3.8.4.1.1 Length. The warranty shall be for a period of 36 months.

3.8.4.1.2 Start Date. The warranty shall begin upon acceptance of the unit by the Government as indicated by a signature on a DD-250.

3.8.4.1.3 Response Time. The contractor shall provide a Return Material Authorization (RMA) within 24 hours of receipt of request from the Government. The contractor shall provide warranty replacement items to the Government within 7 calendar days after receipt of warranty item from the Government.

3.8.4.1.4 Tranportation of Equipment for Warranty Repair. The contractor shall pay transportation costs from the using unit to the contractor's designated facility for repair or replacement as well as transportation from contractor's facility to the using unit.

3.8.4.1.5 Warranty Administration Point of Contact. The contractor shall provide the name, telephone number, and e-mail address of the individual(s) to whom warranty administration issues may be escalated for quick resolution. This point of contact shall be at a higher level of management in the organization than the warranty claims processing hotline. The point of contact information shall be provided to the Government contracting officer in writing.

3.8.4.1.6 Toll-Free Telephone Hotline. The contractor shall provide a Marine Corps-unique, toll-free, telephone hotline for processing warranty claims. The hotline service shall be available during normal working hours (at the answering location). For after hours calls, provisions shall be made for a caller to leave a message. The message shall be answered no later than the next business day. The hotline service shall issue a return material authorization (RMA) to authorize and begin tracking of defective items returned for repair. Help desk (i.e. technical support) services are not required.

3.8.4.1.7 Warranty Report. The contractor shall provide a quarterly warranty report. This report shall provide information on items under warranty, contractor repair and replacement and equipment failure data. Reporting shall commence no later than 90 days after acceptance of the first TSM and will continue on a monthly basis for the duration of the warranty period.

DI-SESS-81639, Warranty Performance Report

3.9 Maintenance Planning. The contractor shall conduct maintenance planning to define optimal maintenance activities which fully support the TSM maintenance concept. The maintenance concept for the TSM is defined below.

3.9.1 Organizational Maintenance. Organizational maintenance shall consist of simple tasks performed by the user and simple repairs performed by organizational maintenance technicians. No special purpose tools or test equipment shall be required at the organizational maintenance level. Organizational maintenance shall consist of the following:

a. Preventive maintenance includes visual inspection, testing, cleaning, tightening, and other minor adjustments, making external adjustments on equipment and perform operational checks using authorized tools, manuals and test equipment.

b. Corrective maintenance includes the performance of minor cable and cable connector repair, isolating the cause of equipment malfunction to the defective Line Replaceable Unit (LRU) by the use of Built-in test (BIT), removing and replacing LRUs, and returning equipment to full operational capability with minimum downtime.

3.9.2 Intermediate Maintenance. Intermediate maintenance shall consist of repair tasks performed by trained technicians. Repairs authorized are the continued fault isolation of the LRU/circuit card using standard tools and test equipment, identification and replacement of defective components, alignment (if required), calibration (if required), and the return of the equipment to full operation with minimal downtime. Defective LRUs/circuit cards may be repaired at the intermediate level however, they shall be considered for depot level corrective maintenance. Those items already in the DoD inventory shall follow their established intermediate level maintenance procedures.

3.9.3 Depot Maintenance. Depot maintenance shall consist of complete repair, major overhaul, or complete rebuild of the parts, assemblies, subassemblies, and end items, including the manufacture of parts, piece part repair, modification, and testing that is beyond the capability

of the intermediate level of maintenance. Depot level maintenance shall be performed by the production contractor for those items unique to the TSM and by the appropriate depot for those items already in the DoD inventory.

3.10 Supply Support.

3.10.1 Conferences.

3.10.1.1 Provisioning Guidance Conference. The Provisioning Guidance Conference shall be hosted by the contractor, at the contractor's facility within 60 days after contract award, preferably concurrent with the Post Award Conference. The agenda shall define requirements for Logistics Management Information (LMI) Data Products including format and medium of delivery, addressing of unique Government requirements, and discussion/resolution of any unclear provisioning/cataloging related areas. Development of a Provisioning Performance Schedule and scheduling of periodic LMI Data Product submissions for Government review will also be accomplished at this conference.

3.10.1.2 Provisioning Conference. The contractor shall host a Provisioning Conference(s) at the contractor's facility in accordance with the Provisioning Performance Schedule developed at the Provisioning Guidance Conference. The contractor shall provide and disassemble production grade equipment during this conference to validate and verify all provisioning documentation.

3.10.2 Provisioning Plan. The contractor shall establish, manage, and execute a Logistics Management Information (LMI) program in accordance with MIL-PRF-49506. MIL-HDBK-502 may be used for additional guidance. The LMI program shall be the basis for the integration of the logistics support element, and provide the interface between the engineering and integrated logistics effort used in the systems engineering effort. The objectives of the LMI program are to provide optimum material readiness, economical logistics support, and identify/evaluate resources required to develop and manage an effective support system. All design, modification/alteration, and engineering activity shall require LMI. Provisioning status, identification of problem area(s), and necessary resolutions to problems addressed shall be discussed at each ILS IPT.

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (Provisioning Plan)

3.10.3 Provisioning and Other Preprocurement Screening.

a. Provisioning and Other Preprocurement Screening Data are used to identify existing National Stock Numbers (NSNs) for an item, validate currency of an NSN, and aid in maximum use of known assets. The contractor shall identify provisioning and other preprocurement data to be submitted for Government screening.

b. Screening data shall be prepared in accordance with MIL-PRF-49506.

(1) Use a fixed length record format as indicated below:

CARD COLUMN (CC)	DATA ELEMENT	REMARKS
1-3	Document Identifier Code	Enter "LSR"
4-6	Package Sequencer Number	Enter "Z01" or if two P/Ns Use "A01" and "Z02"
7	Priority Indicator Code	Use "4"
8-9	Activity Code Use "PA"	
10-26	Submitter's Control Number (See Below) cc 10-13: Cataloger Team/Desk cc 14-16: Provisioning Control Code cc 17-23: PLISN IAW MIL-PRD-49506 (Field shall be right justified)	
24-26	Leave blank	
27-31	Destination Code	Contractor's CAGE code
32	Type of Screening Code	Use "F"
33-36	Output Data Request Code	Use "9911"
37	Statistical Indicator Code	Use "A"
38	Single/Multiple Output Code	Use "1"
39	Blank	
40	DIDS Segment Code	Use "2"
41	Reference Number Category Code	Leave Blank
42	Reference Number Variation Code	Leave Blank
43	Commercial or NATO Supply Code For Manufacturing (CAGE) or NATO Supply Code for Manufacturer (NSCM)	Use Commercial and Government Entity Code
48-79	Reference Number	Enter Reference Number
80	Continuation Indicator Code	Use "1"

(2) Submit Provisioning Screening transactions to Defense Logistics Services Center in the above format via Compact Disc.

a. Provisioning Screening (P/S) shall be processed at the following address:

DEFENSE MEGACENTER COLUMBUS
ATTN: Tape Librarian/Bldg 23/FLIS-PROVISIONING
3990 E. Broad Street

COLUMBUS, OH 43216-5000

b. Do not include a header or trailer. DLSC will not transfer your transaction to a tape. Save your transactions in ASCII format. Do not exceed a maximum of 25,000 transactions per diskette. To submit a diskette for processing, prepare a letter of transmittal to accompany your diskette indicating "Diskette" as the enclosure. Mail your letter and diskette to:

COMMANDER
DEFENSE LOGISTICS SERVICES CENTER
DIRECTORATE OF LOGISTICS INFORMATION MANAGEMENT
ATTN: DLSC-SBA (PROVISIONING SCREENING)
FEDERAL CENTER
74 WASHINGTON AVENUE, N.
BATTLE CREEK, MI 49017-3084

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (POPS)

3.10.4 Provisioning Technical Documentation. The contractor shall develop/document Provisioning Technical Documentation to include a Provisional Parts List (PPL), Long Lead Time Items List (LLTIL), Tools and Test Equipment List (TTEL), Common and Bulk Items List (CBIL), and any Design Change Notices (DCN). These lists shall contain the Data Products selection list. The Government at the Provisioning Guidance Conference (PGC) shall designate the format and medium of delivery. The frequency for submission of such lists shall also be designated at the PGC.

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (PTD)

3.10.4.1 Provisioning Parts List. The Provisioning Parts List (PPL) shall contain the end item, component or assembly and all support items which can be disassembled, reassembled, or replaced, and which, when combined, constitute the end item, component or assembly and shall include items such as parts, materials, connecting cabling, piping, and fittings required for the operation and maintenance of the end item, component, or assembly. The PPL shall be used to determine the range and quantity of support items required to maintain the end item for an initial period of service. This includes all repairable Contractor Off-The-Shelf (COTS) items unless excluded by the provisioning requirements. It does not include a breakdown of Government furnished equipment. The PPL shall include items such as parts, materials, connecting cabling, piping, and fittings required for the operation and maintenance of the end item/equipment. The PPL shall contain all tools, test equipment, repair kits and repair parts sets required to maintain the end item, component, or assembly equipment unless excluded by the provisioning requirements or meeting the requirement for CBIL inclusion if CBIL is a contract requirement.

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (PPL)

3.10.4.2 Long Lead Time Items List. The contractor shall provide a Long Lead Time Items List (LLTIL) that shall contain those items which, because of their complexity of design, complicated

manufacturing process or limited production capacity, may cause production or procurement cycles which would preclude timely and adequate delivery, if not ordered in advance of normal provisioning.

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (LLTIL)

3.10.4.3 Tools and Test Equipment List. The contractor shall provide a Tools and Test Equipment List (TTEL) that shall contain those support items required to inspect, test, calibrate, service, repair, or overhaul an end item.

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (TTEL)

3.10.4.4 Common and Bulk Items List. The Common and Bulk Items List (CBIL) contains those items that are difficult or impractical to list on a top down/disassembly sequence PPL, but for which provisioning is essential to support the operation of the end item/equipment. These items are subject to wear or failure, or otherwise required for maintenance, including planned maintenance of the end item/equipment. The contractor shall indicate the material type, grade, class, etc. The contractor shall submit sufficient information to enable the Government to relate the material/specification number to the pertinent item.

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (CBIL)

3.10.4.5 Design Change Notice. A Design Change Notice (DCN) shall be used to identify change to Provisioning Technical Documentation which add to, delete, supersede, or modify items previously listed which are approved for incorporation into the end item.

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (DCN)

3.10.5 Engineering Data For Provisioning. Engineering Data For Provisioning (EDFP) is technical data used to describe parts/equipment and consists of data such as specifications, standards, drawings, photographs, sketches and descriptions, and necessary assembly and general arrangement drawings, schematic drawings, schematic diagrams, wiring and cable diagrams necessary to indicate the physical characteristics, location, and/or function of the item.

a. At a minimum, EDFP must provide:

(1) Technical information of items for maintenance support considerations

(2) Item identification/descriptions necessary for;

(a) Cataloging actions and assignment of a National Stock Number

(b) Review for item entry control

(c) Standardization to include standardization/interchangeability

(d) Item management coding

(e) Identification/procurement of initial spares

(f) Preparation of allowance/issue lists

b. The contractor shall furnish EDFP in the following order of precedence:

(1) Government or industry recognized specifications or standards

(2) Engineering drawings

(3) Commercial catalogs or catalog descriptions

(4) Sketches or photographs with brief descriptions of dimensional, material, mechanical, electrical, or other descriptive characteristics.

c. EDFP shall be submitted in hard copy. EDFP shall be marked in such a manner as to identify the proprietary rights (limited or unlimited). EDFP shall also be marked with the Provisioning Line Item Sequence Number (PLISN) in the upper right hand corner. EDFP shall NOT be provided when the item is:

(1) Identified as a government specification or standard which completely describes the item including its dimensional, mechanical, and electrical characteristics

(2) Previously cataloged/assigned an active National Stock Number with type 1 item identification

DI-ALSS-81529, Logistics Management Information (LMI) Data Products (EDFP)

3.10.6 Request for Nomenclature. The contractor shall submit a Request for Nomenclature in accordance with MIL-STD-196E for the system. This requirement is mandatory for use in type designation of communications and electronic materiel.

DI-CMAN-81254A, Request for Nomenclature

3.11 Technical Publications.

3.11.1 Electronic Technical Manuals (ETM). The contractor shall develop ETMs in accordance with Technical Manual Contract Requirement (TMCR) TSM-03, which shall include all information required for the installation, operation and maintenance of the TSM. The manuals shall reference the commercial and military manuals associated with the specific equipment comprising the TSM.

TMCR TSM-03, Technical Manual Contract Requirement (ETM)
TMCR TSM-03, Technical Manual Contract Requirement (Validation Certification)

3.11.2 Commercial Off-the-Shelf Manuals. The contractor shall provide Commercial Off-The-Shelf (COTS) manual(s) for the TSM to include supplemental data as necessary. The manual(s) shall contain installation, operation, troubleshooting, and maintenance instructions.

TMCR TSM-03, Technical Manual Contract Requirement

3.11.3 Copyright Release. The contractor shall identify copyrighted material, if any, and shall obtain the written approval of the copyright owner. The contractor shall furnish appropriate copyright release giving the Government permission to reproduce and use copyrighted information. When the contractor uses a manual, which covers a vendor's component(s) or a portion thereof, and the vendor's manual contains copyrighted material, the contractor shall be responsible for obtaining a copyright release from the vendor and providing the copyright release to the Government.

TMCR TSM-03, Technical Manual Contract Requirements

3.11.4 Change Pages/Modification Instructions. The contractor shall provide change pages/modification instructions to the manuals as a result of approved changes to the baseline system. The Government requires notification of all changes and revisions to the manuals for the duration of this contract. Notice of new models/equipment, when they are available, is also required for Government information. The contractor shall develop change pages/modification instructions in accordance with Technical Manual Contract Requirements.

TMCR TSM-03, Technical Manual Contract Requirements

3.12 Support Equipment. Support equipment is defined as tools, test equipment, automatic test equipment, and Built-in test/built-in test equipment (BIT/BITE). The requirement for support equipment shall be satisfied by items currently in the Marine Corps inventory to the maximum extent practical. Listings of support equipment resident in the Marine Corps inventory are available from the Government upon the contractor's written request. If the contractor has determined that support equipment is not required, then an explanation is required on how and for how long the system is going to be maintained.

3.12.1 General Purpose Support Equipment. General Purpose Support Equipment (GPSE) is defined as tools and test equipment currently in the Marine Corps inventory. Listing of GPSE resident in the Marine Corps inventory are available from the Government upon the contractor's written request.

3.12.2 Special Purpose Support Equipment. Special Purpose Support Equipment (SPSE) is defined as tools, and test equipment NOT currently in the Marine Corps inventory. Listing of tools and test equipment resident in the Marine Corps inventory are available from the Government upon the contractor's written request. If it has been determined that SPSE is

required, the contractor shall develop a Support Equipment Recommendation Data (SERD) using MIL-PRF-49506 detailing the recommended test equipment and testing application. The contractor shall minimize the use of SPSE.

DI-ALSS-81530, Logistics Management Information (LMI) Summaries (SERD)

3.12.3 Calibration and Measurement Requirements Summary. The contractor shall list calibration requirements of test equipment. The Calibration and Measurement Requirements Summary (CMRS) shall be developed only for SPSEs, which have been identified by the contractor.

DI-QCIC-80278A, Calibration and Measurement Requirements Summary (CMRS)

3.13 Manpower, Personnel and Training. The contractor shall provide a training program in accordance with MIL-PRF-29612B and the USMC Systems Approach to Training. Prior to course initiation, the contractor's facilities shall meet safety standards, which are in accordance with local, state, and federal regulations. All training procedures shall be consistent with the applicable information within the technical manual.

3.13.1 Management of Training Development. The contractor shall appoint a Training Manager who shall be the single point of contact for training and courseware development matters. The Training Manager shall have knowledge and experience in the development of military training programs. The duties of this Training Manager shall include, but shall not be limited to, the coordination of training courseware analysis, design, development, implementation and presentation. The contractor shall assign instructors to conduct each of the identified training courses. Instructors shall have been part of the applicable training course development team. Instructors shall be fluent in the English language.

3.13.2 Plan of Action/Milestones. The contractor shall provide a Plan of Action and Milestones (POAM) for the training program as a portion of the draft Training Program Development and Management Plan. The POAM shall identify proposed course dates, proposed Job Task Analysis dates, proposed 30%, 60% and 80% review dates, and delivery dates for draft and final training materials.

DI-SESS-81521B, Training Program Structure Document (POAM)

3.13.3 Training Development Progress Reviews. Training Development Progress Reviews shall be conducted at the 30%, 60% and 80% completion level. Draft training materials to support these reviews shall be submitted to the Government for review no less than 14 days prior to scheduled reviews. The contractor shall incorporate reported decisions and correct discrepancies resulting from or associated with these reviews. Each review shall include corrections from the previous review. Comments and redlines resulting from reviews shall be incorporated. Comments from any previous review shall be revisited prior to proceeding with the current review. If the previous comments have not been included, the review shall not be considered complete.

3.13.4 Job Task Analysis (JTA). The contractor shall particpate in a JTA for TSM operators, maintainers (O and I levels) and system planners. The JTA workshop(s) will determine the tasks to be performed by operators, maintainers, and system planners. The workshop(s) will result in the generation of a master task list. The contractor shall prepare a list of tasks to be trained for operators and maintainers (O and I levels of maintenance) and system planner. These tasks to be trained will be extracted from the master task list. The analysis will further identify the tasks to be trained in each of the testing evolutions and incorporated in the identified MOS producing courses taught at Formal Schools. The selection of tasks to be trained will be determined by a Difficulty, Importance, and Frequency (DIF) analysis. The workshop(s) will be held at a date, time and place mutually agreeable to the contractor and the Government. Results of the JTA shall be presented at the 30% training development progress review.

3.13.5 Instructional Level. The contractor shall develop courseware in sufficient depth to meet the following requirements:

a. Deployable End Office Suite (DEOS) Operator/Maintainer Course Requirements. At a minimum, the course shall provide students with the knowledge and understanding of the system's capabilities, functions, limitations, interfaces, operations, Preventive Maintenance Checks and Services (PMCS), and Organizational Maintenance. The course shall allow the student to become proficient with the required operations and maintenance tasks. The course shall be of sufficient depth to ensure that students are qualified to properly operate and maintain the system at the organizational level. Upon completion, the hands-on instruction shall enable the student to operate the system, subsystem and equipment controls, demonstrate knowledge of general equipment functions and operations and perform system checks and verification procedures. This course shall also incorporate the above listed requirements for the operation and maintenance of the Remote Subscriber Access Module (RSAM). This courseware will be incorporated into the MOS 0618 generating course. Students in this course will be entry level.

b. Deployable Integrated Transport Suite (DITS) Operator/Maintainer Course Requirements. At a minimum, the course shall provide students with the knowledge and understanding of the system's capabilities, limitations, interfaces, operations Preventive Maintenance Checks and Services (PMCS), Organizational Maintenance. The course shall enable the student to become proficient with the required operations and maintenance tasks. The course shall be of sufficient depth to ensure that students are qualified to properly operate and maintain the system at the organizational level. Upon completion, the hands-on instruction shall enable the student to operate the system, subsystem and equipment controls, demonstrate knowledge of general equipment functions and operations and perform system checks and verification procedures. This courseware will be incorporated into the MOS 2823 generating course. Students in this course will be entry level.

c. Intermediate Maintenance Course Requirements. The course shall provide students with the knowledge and understanding of the capabilities, interfacing, operations, troubleshooting and the preventive and corrective maintenance tasks/skills required. At a

minimum, the instruction shall include the capabilities, functions and operations of the system, preventive and corrective maintenance procedures, external diagnostics and other tests and measured performance data. Upon completion, the student shall be able to operate the system and subsystems, execute diagnostic self-test and interpret readouts, remove and install components and perform pre-shop setup tests, determine if the system/subsystem is malfunctioning, isolate and locate malfunctions in the Line Replaceable Unit/Shop Replaceable Unit (LRU/SRU), replace the defective LRU/SRU, troubleshoot and repair LRUs/SRUs, perform all required alignments and adjustments, verify proper system/subsystem functions and perform routine preventive maintenance functions. The course shall be developed around the Government maintenance concept and shall enable the student to become proficient with the required operations and the preventive and corrective intermediate maintenance tasks. The course shall be of sufficient depth to ensure that students are qualified to maintain the system to the appropriate level using the technical manuals, general purpose test equipment, and all available diagnostics. The course shall include a minimum of ten (10) instructor-inserted faults or malfunctions. This courseware will be incorporated into the MOS 2847 generating course. Students in this course will be entry level with Basic Electronics training.

d. System Planner Course Requirements. The course shall provide students with the knowledge and understanding of the capabilities, limitations, interfacing, operations, and basic maintenance tasks of the system to enable them to employ the system in a tactical environment. Emphasis should be placed upon the following topics: concept of employment, Global Block Numbering, interoperability/interfaces, capacity, security requirements, and maintenance concepts. This course is intended for mid-level communications personnel (e.g. MOS 2823, 2810, 2510, 0699, 0602).

3.13.6 Methods of Instruction. The method of instruction shall include lectures, demonstrations, practical exercises and application. No less than fifty percent of course presentation shall be practical exercise and hands-on training. Fault isolation shall be accomplished by having students identify faults to the specific LRU/SRU and/or software configuration item with particular emphasis on high failure items. The trainee to instructor ratios shall be 4:1 for practical exercises and 20:1 for lectures.

3.13.7 Course Material. All course materials shall be prepared in accordance with MIL-PRF-29612B and the USMC Systems Approach to Training. The reading level at which written training material is developed shall be the ninth grade reading level. The contractor shall provide, to each student attending Instructor and Key Personnel (I&KP) courses, a copy of all course material necessary to teach the course. The contractor shall provide all supplies, test equipment, common and special tools, and technical literature to each Government student while taking the course. Test equipment shall be identical to that used in the operational environment. For each course, the contractor shall prepare and deliver the following training documentation in accordance with MIL-PRF-29612B. For further guidance MIL-HDBK-29612A (1-5) may be used.

3.13.7.1 Learning Analysis Report. The contractor shall provide a Learning Analysis Report (LAR) containing the mission statement, individual task information, task data and course

objectives. It shall also contain the Learning Objectives (Terminal Learning Objectives and Enabling Learning Objectives) and the knowledge, skills, and attitudes required to perform the tasks.

DI-SESS-81518B, Instructional Performance Requirements Document (LAR)

3.13.7.2 Training Conduct Support Document. This training data product shall provide definition and direction for instructors and trainees for the conduct of formal training. This product also supports the trainee's mastery of knowledge, skills, and attitudes for a given subject. In addition to those parts of the Training Conduct Support Document identified and tailored in the Contracts Data Requirements List (CDRL), the contractor shall develop a Program of Instruction (POI) for each course. The POI is a control document used for planning, organizing, and conducting training. The POI shall document the plan of instruction, be easily maintained and follow the format of the POI example(s) provided.

DI-SESS-81520B, Instructional Media Design Package

3.13.7.3 Lesson Plan. The contractor shall develop and provide a Lesson Plan (LP) to the Government that shall contain data that provides specific definition and direction to the instructor on learning objectives, equipment, instructional media requirements, and the conduct of training.

DI-SESS-81523B, Training Conduct Support Document (LP)

3.13.7.4 Trainee Guide. The contractor shall develop and provide a Trainee Guide (TG) that shall contain data which enhances the trainee's mastery of the knowledge, skills, and attitudes needed for a given subject. These materials may be in the form of information, diagram, job, assignment, problem, and outline sheets.

DI-SESS-81523B, Training Conduct Support Document (TG)

3.13.7.5 Instructional Visual Aids. The contractor shall provide visual aids, such as slides and transparencies, to be used by the instructor in the conduct of classes. They shall enhance the learning process and be in accordance with Government approved production standards.

DI-SESS-81523B, Training Conduct Support Document (IVA)

3.13.7.6 Test Package. The contractor shall develop and provide a Test Package. The contractor shall provide the specific requirements data necessary for the examination of an individual's knowledge, skills, attitudes, and achievement of each enabling learning objective. All examinations shall include practical exercises or demonstrated successful troubleshooting, maintenance, repair, operation, test, installation, and assembly. Passing criterion shall be 80%. Performance testing shall include an evaluation of the trainee's ability to use applicable technical manuals, analytical troubleshooting processes, test equipment and the observance of safety precautions.

DI-SESS-81525B, Test Package

3.13.7.7 Traceability Matrix Development. The contractor shall develop a traceability matrix. This matrix shall include a depiction of traceability from the tasks to the learning objectives and further to the tests. The traceability matrix shall be submitted for Government approval.

DI-MISC-80508A

3.13.8 Initial Training. The contractor shall develop training material (courseware) to cover DEOS operator, DITS operator, intermediate maintainer and system planner tasks for the TSM. The contractor shall be responsible to conduct Initial Training and to provide all of the necessary courseware. Initial Training shall be in three evolutionary increments (I&KP, OT&E, and NET). Following each training evolution, approved Government comments received from the attendees shall be incorporated into the training material prior to the next training session.

3.13.8.1 Instructor and Key Personnel Training. The contractor shall conduct Instructor and Key Personnel (I&KP) training utilizing the Government approved draft courseware. I&KP training shall consist of courses for operators, maintainers and system planners. The contractor shall conduct four classes (one each DEOS operator, DITS operator, Intermediate Maintainer and System Planner) of up to 12 students each. I&KP training shall be conducted at the contractor's facilities. The Government will inspect the contractor's training facilities as required.

3.13.8.2 Operational Test and Evaluation Training. The contractor shall conduct Operational Test and Evaluation (OT&E) training courses; 12 DEOS operators, 8 DITS operators, 6 Intermediate Maintainers and 3 System Planners. The OT&E courses shall be taught by the contractor using draft courseware. OT&E training shall be conducted by the contractor at a CONUS Government site to be determined.

3.13.8.3 New Equipment Training. The contractor shall conduct New Equipment Training (NET) to take place at Government sites at the gaining units' locations to be determined. Course content should be the same as OT&E Training. The contractor shall train 12 DEOS operators, 8 DITS operators, 8 Intermediate Maintainers and 8 System Planners per training session. Locations for training will be Camp Pendleton, CA, Camp Lejeune, NC, Okinawa, JP, and Bronx, NY. The Government intends to conduct multiple training sessions at each location throughout the fielding process. Training sessions will not be held concurrently. A total of 10 training sessions is anticipated. Contract options may be exercised for additional training sessions.

3.13.9 Training Course Completion Report. The contractor shall provide to the Government written certification of the proficiency of each student, an evaluation of trainee performance, the course of instruction and related materials. A Student Training Course Evaluation and Certificate of Training shall be provided to each student. A copy of each student's Student Training Course Evaluation shall be provided to the Marine Corps program office and to the respective student's command.

DI-SESS-81522B, Course Conduct Information Package

3.13.10 Classroom and Practical Application/Laboratory Facilities. The contractor shall provide the facilities for the IK&P training courses. For each training program there shall be a minimum of 36 square feet (3.312 square meters) of classroom floor space and a minimum of 75 square feet (6.967 square meters) of practical application/laboratory floor space per trainee. Classroom and practical/laboratory facilities shall be sufficiently soundproofed to ensure that ambient noises are held to a minimum and that the instructors can be clearly heard. All facilities shall have adequate heating/cooling, lighting, lavatory facilities, consumable supplies, and laboratory and classroom furniture necessary for the health, comfort, and convenience of the trainee.

3.13.11 Housing and Messing Facilities. When training is conducted at a non-Government facility, the contractor shall provide the Government a listing of housing and messing facilities as well as transportation available in the area of the training site no less than 30 days prior to the commencement of training.

3.13.12 Training Devices. The Government anticipates a requirement for TSM components (DEOS, DITS and RSAMS) configured to support the accepted training concepts for the four TSM courses as well as Computer Based Training for the Formal Schools. Training device configurations will be developed by the Government with recommendations from the contractor to support formal Government training.

3.14 Packaging, Handling, Storage and Transportation (PHS&T)

a. General: The Contractor shall be responsible for preservation and packaging (P&P) of the deliverables under the terms of this statement of work. P&P for deliverables shall be in accordance with the best commercial practices of ASTM D3951-98 or the pertinent level of MIL-STD-2073-1D, w/Notice 1 as applicable. Packaging data shall be developed in accordance with MIL-STD-2073-1D and all appendices for the End Item and all repairable components assigned Source, Maintenance and Recoverability (SMR) Codes PA, PB, PC, PD, PE and PG. Items excluded from data development shall be those items with Contractor and Government Entity Code (CAGEC) of 1T416, 21450, 83024, 96906, 10060, 24617, 80205, 99237, 80244, 81343, 81346, 81348, 81349, 81352, and 88044.

b. Should items be scheduled for long term storage they shall be packaged in accordance with the level "A" requirements of MIL-STD 2073-1D, Appendix A, Electronic Equipment and Appendix J, Table J.Ia., Specialized Preservation code "GX" for items meeting Electrostatic Sensitive requirements. Spare repairable components shall be preserved and packaged in accordance with MIL-STD-2073-1D, Appendix "A", Table A,VI., Electronic Equipment. ESD items shall be packed into a reusable fast-pack container. Items being prepared for domestic shipment for immediate use shall be in accordance with the best commercial practices of ASTM D3951-98.

c. Classification and Data Development. The Contractor shall classify the selected items as common, selective, or special in accordance with MIL-STD-2073-1D, Appendix A, paragraph A.5.1, and shall develop data as required by MIL-STD-2073-1D, Appendix E, paragraph E.4. The Contractor shall provide logistics information sufficient for the Government to determine the adequacy of the data submitted.

d. Validation. The Contractor shall validate preservation processing and packaging for selective and special group items in accordance with MIL-STD-2073-1D, Appendix F, and ASTM D4169, Acceptance Criteria 1, Assurance Level I, Distribution Cycle 18. Exceptions to validation requirements shall be as delineated in MIL-STD-2073-1D, paragraph 5.6. The Contractor shall report fully all steps taken during the validation process in accordance with ASTM D4169, Section 12. The test report shall accompany data submissions.

e. Development of Marking Requirements. Marking requirements for shipment and storage shall be developed in accordance with MIL-STD-129. Bar Coding is required.

f. Engineering Changes. In the event a Government approved Engineering Change Proposal (ECP) affects packaging design requirements for previously approved data, the Contractor shall update the affected packaging data and submit it to the Government for approval.

DI-PACK-80120B, Preservation and Packing Data
DI-PACK-80121B, Special Packaging Instructions
ASTM-D4169, Validation/Test Report

3.15 Software.

3.15.1 Software Development Plan. The contractor shall use existing Commercial-Off-The-Shelf (COTS) and Non-Developmental Item (NDI) software and hardware products to the maximum extent possible in the development, design, integration, and production of the TSM. The contractor shall develop and implement plans for conducting software development activities if new software is developed. The plans shall include specific standards, methods, tools, actions, and responsibility associated with the development and qualification of all requirements including safety and security. The processes, activities, and tasks of IEEE/EIA 12207.0-1996 may be used for guidance.

DI-IPSC-81427A, Software Development Plan (SDP)

3.15.1.1 Software Reviews. The contractor shall conduct, for all application and support CSCIs, a Preliminary Design Review, Critical Design Review and a Software Test Readiness Review. These reviews may be conducted in conjunction with system PDR, CDR and TRR.

3.15.1.2 Software Testing Program. The contractor shall conduct separate software testing for all newly developed or modified COTS software using software testing practices outlined in IEEE/EIA 12207 for guidance.

3.15.1.3 Source Code and Executable Software. The contractor shall provide all applicable software source code, build files/scripts and executable software developed in support of the TSM.

DI-MCCR-80700, Computer Software Product End Items

3.15.2 Software Transition Plan. The contractor shall provide a Software Transition Plan (STrP) to include a listing of all Software Support Environment Tools (SSET) used to develop software/firmware for the TSM. Prior to all testing, the contractor shall deliver one set of all SSET including source code, build files/scripts, and executable software developed under this contract, and licenses for Government use.

DI-IPSC-81429A, Software Transition Plan (STrP)

3.15.3 Software Test Plan. The contractor shall incorporate the software test plan as part of the system test plan under SOW paragraph 3.7.1. In the event that there is newly developed or modified COTS software, a separate software test plan shall be provided using IEEE/EIA 12207.0-1996 as guidance.

3.15.4 Software Test Procedures. The contractor shall incorporate the software test procedures as part of the system test procedures under SOW paragraph 3.7.4. In the event that there is newly developed or modified COTS software, separate software test procedures shall be provided using IEEE/EIA 12207.0-1996 as guidance.

3.15.5 Software Test Report. The contractor shall incorporate the software test report as part of the system test report under SOW paragraph 3.7.3. In the event that there is newly developed or modified COTS software, a separate software test report shall be provided using IEEE/EIA 12207.0-1996 as guidance.

3.15.6 Software Version Description. The contractor shall provide a Software Version Description (SVD). The SVD shall identify and describe the exact version of software including the build and installation instructions of one or more Computer Software Configuration Items (CSCIs) and shall be used to release, track, and control software versions.

DI-IPSC-81442A, Software Version Description (SVD)

3.15.7 Software User Manual. The contractor shall provide a Software User Manual (SUM). The SUM shall describe to a hands-on software user how to install and use a Computer Software Configuration Item (CSCI), a group of related CSCIs, or a software system or subsystem. It may also cover a particular aspect of software operation, such as instructions for a particular position or task. The contractor shall include the SUM on the ETM CD.

DI-IPSC-81443A, Software User Manual (SUM)

3.15.8 System/Subsystem Design Description. The contractor shall provide a System/Subsystem Design Description (SSDD). The SSDD shall describe the system- or subsystem-wide design and the architectural design of a system or design of a system or subsystem. A verification cross reference matrix (VCRM) shall be included as an appendix. This VCRM shall trace requirements from the Performance Specification and the statement of work to the design.

DI-IPSC-81432A, System/Subsystem Design Description (SSDD)

4 CONTRACTOR INTERIM SUPPORT. The contractor shall provide interim support services for the TSM for one year period(s), in accordance with the delivery order(s), in order for the Government to obtain all necessary documentation and resources to organically support the equipment. The contractor shall provide an interim support plan which defines the approach which will be employed to ensure operational availability/readiness of the TSM (A_o=.95) and a plan to transition support to the Government. For availability/readiness calculations, a TSM is defined as one DEOS, one DITS and three RSAMs (connected to the DEOS via a T1). The contractor shall make available all documentation generated, as a result of these services, for Government review. The contractor shall document corrective actions taken during the period of services in the FRACAS reports. As a minimum, the following services shall be provided:

a. Create and maintain a database of maintenance actions which include date, time, reporting unit, response time, item, part number, failure and failure mode, and corrective action taken.

b. Establish and maintain a 24-hour, 365-day helpdesk and hotline to assist operator and maintenance personnel. A log shall be maintained which documents all calls to include at a minimum, using unit, problem reported and item resolution.

DI-MISC-80508 Technical Report - Study/Services (Helpdesk Log)
DI-MISC-80508 Technical Report – Study/Services (Interim Support Plan)

4.1 Spares. The Offeror shall provide, as a part of its offer, a list of all Line Replaceable Units (LRUs) included in the (TSM) that are critical to the operation of the system. The list shall reflect those items that can be removed and replaced at intermediate and / or organizational level. The list shall include, but shall not be limited to: description, manufacturer, manufacturer part number, Commercial and Government Entity (CAGE) Code, price per unit, quantity per system, National Stock Number (NSN), if applicable, and Maintenance Replacement Rate (MRRI) (breakage per thousand per year). The Offeror shall propose and recommend spare LRUs sufficient for one (1) year of TSM operation. The Offeror shall also list TSM consumables and rate of consumption. The Offeror shall include, as part of it's cost proposal the cost associated with the procurement of these spares in Section B of the solicitation.

4.2 Field Service Representative (FSR). The contractor shall provide Field Service Representatives (FSR) CONUS, OCONUS and/or in support of contingency operations in accordance with the task order(s) issued by the Contracting Officers Representative (COR). The contractor shall furnish the services of qualified engineer(s)/engineering technicians to:

a. Assist in planning, installation, testing, checkout, adjustment, operation, disassembly, Troubleshooting and repair of the TSM.

b. Perform on-the-job instruction and training of the USMC personnel (military or Civilian).

4.3 Engineering Technical Services. The contractor shall provide Engineering and Technical Services in accordance with the task order(s) issued by the COR.