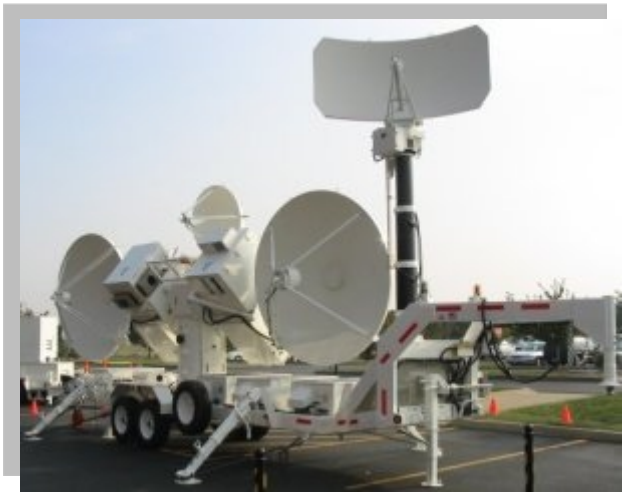
STATEMENT OF WORK

Joint Threat Emitter (JTE) Enhanced Delivery Initiative (JEDI)



Revision A

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Revision Record

Revision	Date	Description	Pages
A	18 Jan. 2018	Initial SOW	60

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List of Acronyms and Symbols

AAA	Anti-Aircraft Artillery
ACO	Administrative Contracting Officer
AIS	Automated Information System
ARO	After Receipt of Order
ATO	Authority to Operate
C2U	Command and Control Unit
CCB	Configuration Control Board
CDRL	Contract Data Requirements List
CFR	Code of Federal Regulations
CM	Configuration Management
CMP	Configuration Management Plan
CONUS	Contiguous United States
CSCI	Computer Software Configuration Item
DAL	Data Accession Lists
EIA	Electronic Industries Association
EMI	Electromagnetic Interference
EW	Electronic Warfare
ECP	Engineering Change Proposal
FAT	Factory Acceptance Test
FC2U	Fixed Command and Control Unit
FCA	Functional Configuration Audit
FFP	Firm Fixed Price
FMS	Foreign Military Sales
GFI	Government Furnished Information

GQAR	Government Quality Assurance Representative
HMMP	Hazardous Material Management Plan
IADS	Integrated Air Defense System
IUID	Item Unique Identification Data
IMP	Integrated Master Plan
JTE	Joint Threat Emitter
JTE-FO	Joint Threat Emitter Follow-on
KPP	Key Performance Parameters
KSA	Key System Attributes
LRU	Line Replaceable Unit
MC2U	Mobile Command and Control Unit
MRL	Manufacturing Readiness Level
OCONUS	Outside the Contiguous United States
OSHA	Occupational Safety and Health Administration
PCA	Physical Configuration Audit
PCO	Procurement Contracting Officer
POP	Period of Performance
PTD	Provisioning Technical Documentation
QA	Quality Assurance
RFV	Requests for Variance
SAT	Site Acceptance Test
SDD	Signal Definition Document
SDFP	Supplemental Data for Provisioning
SDS	Software Development Station
SPS	System Performance Specification
STIG	Security Technical Implementation Guides

SVD	Software Version Description
TDP	Technical Data Package
TEU	Threat Emitter Unit
TIM	Technical Interchange Meeting
TO	Technical Order
TRR	Test Readiness Review
WTEU	Wideband Threat Emitter Unit

1 PROGRAM BACKGROUND

The Joint Threat Emitter (JTE) program provides advanced Electronic Warfare (EW) threat simulators that provide replication of Surface–to-Air Missile (SAM) and Anti-Aircraft Artillery (AAA) threats for aircrew training. The JTE provides improved training capability and is intended to replace aging legacy EW training equipment, which have become obsolete and costly to maintain. The JTE consists of a Threat Emitter Unit (TEU), and a Command and Control Unit (C2U). Two variants of the TEU exist, namely the Standard TEU, sometimes referred to as a Kit 1, and the Wide Band TEU (WTEU). Two variants of the C2U exist, namely the Mobile C2U (MC2U), and the Fixed C2U (FC2U). Previous Air Force and Navy contracts have fielded nineteen TEUs, three MC2Us, ten FC2Us, and two WTEUs. The JTE provides an Integrated Air Defense System (IADS) either as a self-controlled network or integrated with other threat systems on the range. The JTE is reliable, mobile, affordable, re-programmable, modular, remotely operated, easily maintained, and operated with a minimum amount of manpower.

2 SCOPE

The scope of this contract includes but is not limited to production, testing, and delivery of JTE Follow-on (JTE-FO) baseline FC2U, MC2U, TEU, and WTEU end-items; original production (referred to as Legacy JTE) JTE FC2U, MC2U, TEU, and WTEU retrofit kits; Spares and Support Equipment procurement; Engineering Change Proposals (ECPs) including Software Changes, Training and Travel. End-items (for the purpose of this SOW) are defined as FC2U, MC2U, TEU, and WTEU. Additionally, the scope of this contract includes Foreign Military Sales (FMS) and US Government procurement and delivery. Retrofit kits shall ensure that the US Government can create and maintain a single system configuration across the entire US JTE fielded fleet. If First Article Testing is ordered, each end-item undergoing First Article Testing shall be validated by the Government to ensure compliance with system design and system performance requirements. The Government will provide a technical data package as Government Furnished Information (GFI) for use by the Contractor to produce the approved JTE-FO design and procure approved JTE-FO initial spares and retrofit kits. The Contractor shall demonstrate through performance testing that the production systems meet performance requirements. The Contractor shall ensure conformance to system performance requirements for all spares ordered under this contract. Item Unique Identification Data (IUID) shall be adhered to by the Contractor; items shall be marked in accordance with (IAW) IUID standards, and IUID marking information shall be entered into the Government IUID database (Wide Area Work Flow) and delivered in a marking report. (CDRL A043, A044)

3 APPLICABLE DOCUMENTS

Table 1. Applicable Documents

Document #	Date	Title of Document
1077-9430010 Rev C	8 April 2016	Interface Design Description for the JTE Follow-on Production Program
1077-9170002 Rev D	30 Aug 2016	JTE Follow-on Production USAF Command and Control Unit Subsystem Specification
1077-9170001 Rev E	14 Oct 2016	JTE Follow-on Production USAF Threat Emitter Unit Subsystem Specification
1077-9170004 Rev D	30 Aug 2016	JTE Follow-on Production Interface Requirements Specification
201028094 Rev H	12 July 2016	System Performance Specification for JTE Follow-on Production
43D7-19-7-1, 43D7-19-7-3, 43D7-19-7-4, 43D7-19-7-6WC-1, 43D7-19-7-13, 43D7-19-7-23, 43D7-19-8-1, 43D7-19-8-3, 43D7-19-8-4, 43D7-19-8-6WC-1, 43D7-19-8-13, 43D7-19-8-23	Current Revision from ETIMS	USAF Follow-on Production Technical Orders
DoD Manual 4140.01	9 Mar 2017	DoD Supply Chain Materiel Management Procedures
DoD Manual 5220.22-M	28 Feb 2006	National Industrial Security Program Operating Manual
MIL-STD-461G	11 Dec 2015	Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment
MIL-STD-810G(1)	15 Apr 2014	Environmental Engineering Considerations and Laboratory Tests

MIL-STD-1472G	11 Jan 2012	Human Engineering
MIL-STD-2073-1E(1)	7 Jan 11	Standard Practice for Military Packaging
MIL-STD-130N(1)	16 Nov 2012	Identification Marking of U.S. Military Property
MIL-STD-1686C	25 Oct 95	Electrostatic Discharge Control Program for Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)
MIL-STD-129R	18 Feb 2014	Military Marking for Shipment and Storage
FED-STD-313E	01 Jul 2014	Material Safety Data, Transportation Data, and Disposal Data for Hazardous Materials Furnished to Government Activities
J-STD-001	Apr 2010	Requirements for Soldered Electrical and Electronic Assemblies
MIL-HDBK-310	23 Jun 97	Global Climatic Data for Developing Military Products
MIL-HDBK-454B	15 Apr 2007	General Guidelines for Electronic Equipment
MIL-HDBK-781A	30 Jan 2015	Reliability Test Methods, Plans, and Environments for Engineering Development, Qualification, and Production
MIL-HDBK-61A	07 Feb 01	Configuration Management Guidance
MIL-PRF-38535K	20 Dec 2013	Integrated Circuits (Microcircuits) Manufacturing, General Specification
MIL-PRF-29612B	31 Mar 2016	Training Data Products
MIL-PRF-49506	11 Nov 1996	Logistics Management Information

AFI 61-201	9 Feb 2016	Management of Scientific and Technical Information (STINFO)
AFI 63-101/20-101	9 May 2017	Integrated Life Cycle Management
AFI 23-101, AMC Supplement	08 August 2013, 09 Dec 2013	Air Force Material Management
AFMCI 24-201	14 Jan 2015	HQ AFMC Packaging and Materials Handling Policies and Procedures
AFMAN 24-204	13 Jul 2017	Preparing Hazardous Materials for Military Air Shipments
AFJMAN 23-215	21 Jan 1999	Reporting of Supply Discrepancies
AFPAM 63-128	10 Jul 2014	Integrated Life Cycle Management
Technical Order (TO) 00-35D-54	1 Sep 2015	USAF Deficiency Reporting, Investigation, and Resolution
Electronic Code of Federal Regulations (e-CFR)	1 Oct 2017	Electronic Code of Federal Regulations (e-CFR)
TRA Deskbook	July 2009	DOD Technical Readiness Assessment (TRA) Deskbook
DoDI 5200.39	28 may 2015	Critical Program Information (CPI) Protection with the Department of Defense
AFPAM 63-113	17 Oct 2013	Program Protection Planning for Life Cycle Management
AFI 16-601	18 Feb 2011	Implementation of, and Compliance with, International Arms Control and Nonproliferation Agreements
DSCA 5105.38-M	3 Oct 2003	Security Assistance Management Manual

AFMAN 16-101	15 Feb 2011	International Affairs and Security Assistance Management
DoDI 8510.01	12 Mar 2014	Risk Management Framework for DoD Information Technology
AFPD 17-1	12 Apr 2016	Information Dominance Governance and Management
AFI 33-580	24 Dec 2015	Spectrum Management
AFI 91-204	19 Jan 2017	Safety Investigations and Reports
AFI 63-101	9 May 2017	Integrated Life Cycle Management
AFI 48-109	1 Aug 2014	Electromagnetic Field Radiation (EMFR) Occupational and Environmental Health Program

Other publications

Source/Document Number	**Date**	**Document Title**
SAE-AS8090	17 Sep 97	Equipment, Towed Aerospace Ground, Mobility
JTE SDD version 10	10 Oct 10	JTE Threats (U) for Follow-on Production, (Secret N/F)
VMEbus Specification Manual	Oct 1985	VMEbus Specification Manual Rev C.1
Range Threat Systems - SCG	27 Oct 2014	Electronic Warfare Threat Emitter Security Classification Guide
JTE SPO	18 May 06	Joint Threat Emitter Capability Production Document

IEEE SA - C62.41.1991	25 Feb 95	IEEE Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits

Note: Copies of listed federal and military standards, specifications and handbooks are available for download from the following websites:

- DoD Issuance Website, http://www.dtic.mil/whs/directives/
- ASSIST database, https://assist.daps.dla.mil/quicksearch/
- IEEE, http://www.IEEE.org
- SAE specifications, http://www.sae.org/

4 REQUIREMENTS

4.1 PROGRAM MANAGEMENT

4.1.1 Program Manager (PM)

The Contractor shall identify and maintain a PM who shall be the single point of contact for all matters under this contract. This program manager shall ensure all systems engineering and obsolescence monitoring and identification are completed. The Contractor shall also ensure that all program management personnel assigned to the program shall be available, as required, to meet all SOW requirements. The Contractor shall flow down all applicable requirements of this SOW and contract to all subcontractor, suppliers and vendors. The Contractor also shall submit a small business subcontracting plan. (CDRL A011)

The Contractor shall report ALL Contractor labor hours (including subcontractor labor hours) required for performance of services provided under this contract for the JTE via a secure data collection site. The Contractor is required to completely fill in all required data fields at http://www.ecmra.mil.

Reporting inputs will be for the labor executed during the Period of Performance (POP) for each Government Fiscal Year (FY), which runs 1 October through 30 September. While inputs may be reported any time during the FY, all data shall be reported no later than 31 October of each calendar year. Contractors may direct questions to the CMRA help desk.

4.1.2 Monthly Status Report

The Contractor shall develop a monthly metrics report consisting of general program status, the

current status of each end-item in production, all retrofit kits, all spares, and ordered support equipment, and status updates for all ongoing ECPs. (CDRL A009)

ECP tracking within the monthly report shall include:

1) Unique tracking number for each ECP
2) Brief description of ECP
3) Whether the ECP is Class I or II
4) Status of the cost shall be reported
5) Current status of ECP progress
6) Any required Government actions shall be detailed
7) The actual schedule shall be tracked against the estimated schedule

4.1.3 Contract Funds Status Report (CFSR)

The Contractor shall provide on a monthly basis a current accounting of all funds included on cost reimbursable CLINs in the CFSR. (CDRL A010)

4.1.4 Integrated Management Plan (IMP)

The Contractor shall implement and maintain an IMP for this program. The IMP is an event driven plan that defines a program's major tasks and activities and lays out the necessary conditions to complete them. This plan shall include the manufacturing/production approach, methodologies, tools, and procedures to be used during the hardware production, testing, and system integration of all end-items. This IMP must also include major tasks and activities necessary for procurement and delivery of retrofit kits, support equipment, and spares orders. The IMP shall be a single plan for the entire effort, including associate and/or major subcontractor activities. Each section/subsection of the IMP shall contain events, Significant Accomplishments, accomplishment criteria, and selected narratives. (CDRL A004)

- Event: An IMP event is a key contractual or programmatic event defined by the Government or the offeror, which defines progress at a specific point in time. The offeror shall include definitions of each event at the beginning of the IMP. IMP events shall be properly sequenced and may include demonstration milestones, technical or program reviews and audits, and other key decision points. For each IMP event, there shall be one or more entry or exit Significant Accomplishments.
- Significant Accomplishment: Significant Accomplishments are interim or final critical efforts that must be completed prior to entering or exiting an event. Significant Accomplishments are organized by the PWS element/product. Entry accomplishments reflect what must be complete to initiate an event. Exit accomplishments reflect what must be done in order for the event to be successfully closed and that the program is ready for the next event. For each Significant Accomplishment, there shall be one or

more accomplishment criteria. The Government is seeking Significant Accomplishments that provide sufficient insight to the process for achieving SOW requirements. The accomplishments shall be sequenced in a manner that ensures a logical path is maintained throughout the effort and tracks against key events.

- Accomplishment Criteria: Measurable and useful indicators demonstrating that the required level of maturity/progress in an associated Significant Accomplishment has been achieved.

4.1.5 Integrated Master Schedule (IMS)

The Contractor shall implement and maintain an IMS for this program. The Critical Path and Secondary Critical Path shall be delivered as separate and individual views with each submission. A baseline IMS shall be developed at the start of the program. An IMS shall be developed and maintained throughout the program, using the original baseline schedule as an unchanging reference. The IMS shall be provided in Microsoft Project format. (CDRL A005)

4.1.6 Meetings, Reviews, and Conferences

4.1.6.1 Program Management Review (PMR) support

The Contractor shall participate in and support all reviews, audits, and meetings as requested by the Government. PMRs shall be conducted quarterly and as requested by the Government, at a mutually agreeable location or via teleconferences. The total number of PMRs per year will not exceed five. (CDRLs A001, A002, A003)

4.1.6.2 Conference Room

The Contractor shall provide a conference room suitable for meetings of Government representatives, plus Contractor personnel, in support of scheduled meetings at the Contractor's facility.

4.1.6.3 Meeting Agendas and Presentation Material

The Contractor shall publish an agenda and presentation material for all meetings and conferences. The Contractor shall request from the Government any items or issues to be discussed or presented at the meetings, and shall include such items in the agenda and presentation material. Agendas and presentation material shall be submitted not less than ten business days prior to any meeting. (CDRLs A001, A002)

4.1.6.4 Meeting Minutes

The Contractor shall provide a written record of the discussions, decisions and action items identified at each meeting. (CDRL A003)

4.1.6.5 Post-Award Conference (PAC)

The Government will convene a PAC with the Contractor at a location that is mutually agreeable to both parties within 90 calendar days after contract award. The Government will coordinate the actual date, time, and location of the conference with the Contractor.

4.1.6.6 Contractor Facility Access

The Contractor shall arrange for full access to applicable Contractor facilities and offices by Government representatives conducting any business, making observations, or performing inspections required by public law or by this contract.

4.1.6.7 Functional Configuration Audit (FCA) and Physical Configuration Audit (PCA)

The Contractor shall host an FCA and PCA for each end-item undergoing First Article Testing, if ordered, using multiple formal meetings as required. The Contractor shall host an FCA and PCA for each approved ECP using multiple formal meetings as required. The FCA shall verify that the system and components meets all System Performance Specifications (SPS), Systems Specifications, and applicable subsystem specifications (FC2U, MC2U, TEU, WTEU, and Retrofit kits). The PCA shall ensure that all parts match their drawings. For each PCA event, drawings to be reviewed shall be available to the Government not less than ten business days prior to the scheduled event. For each FCA and PCA, separate reports shall be submitted not later than 15 business days after completion of the individual event. The final FCA and PCA shall include an overall report that references and summarizes all previous FCA and PCA reports. The final FCA must be completed not later than 15 calendar days prior to system acceptance. The final PCA must be completed not later than 15 calendar days before Contractor Factory Acceptance Testing (FAT). The Contractor shall generate and submit a Specification Change Notice (SCN) for any system design and requirement change recommendations, including all internal and/or external interfaces, and system and/or subsystem specifications for Government approval. Written Government approval is required before any configuration changes are implemented into the JTE system design. (CDRLs A015 through A022, A024, A025)

The Government reserves the right to conduct Configuration Management (CM) audits, assessments, verifications, and reviews of the Contractor's data and processes for generation, verification, and control of this data on an as-needed basis. The Contractor shall support all such audits, assessments, verifications, and reviews to confirm data, records, and process integrity and consistency to assure that the baselines are accurately documented.

4.1.6.8 Design Reviews

At a minimum the Contractor shall hold a Manufacturing Readiness Review (MRR) that shall be considered a formal design review, for the first end-item of each type (independent of first article testing) ordered prior to proceeding into production. When mutually agreed upon between the Government and the Contractor, the MRR for multiple end-item types can be combined. The

Contractor shall hold formal design reviews for all proposed design changes that arise as part of an ECP. Additional design reviews can be added as agreed upon by both the Contractor and the Government. (CDRLs A001, A002, A003, A014 through A035)

Design reviews shall include, but are not limited to:

1) Calculations
2) Any necessary design studies or analyses, including the design analysis as required in this document
3) Drawings, including equipment layout drawings (packaging), design processes, components, assemblies, work instructions, and component calibration/setup
4) Electrical and mechanical design
5) Environmental control
6) Thermodynamic design
7) Software design/implementation (including third party software)
8) Training material updates
9) Lists of materials, parts, and processes
10) Human engineering elements
11) Corrosion control
12) Maintainability
13) Production capability and manufacturing
14) Quality considerations
15) Risks and Risk Management
16) All information regarding any mockups/assemblies (i.e. software development stations, etc.)

4.1.7 Configuration Management Plan (CMP)

The Contractor shall maintain a robust CMP for software, technical data, drawings, and all data deliverables. The Contractor's hardware and software documentation shall be compliant with ANSI/EIA-649 or with the guidelines in the MIL-HDBK-61A Configuration Management Guidance (07 Feb 01). The Contractor shall establish a CM program including Configuration Identification, Change Control, Configuration Control Board (CCB) activities, Configuration Baseline Management, Configuration Status Accounting and Reporting, Configuration Verification and Audit, and Release/Database Management for hardware, software, and associated documentation. All Contractor CCB activities including but not limited to non-conformances, testing, PCAs, software changes, etc. shall include Government Program Office representation unless delegated to a DCMA representative.

The Contractor shall deliver a CMP that details the processes that will be followed to ensure a complete, and accurate Technical Data Package (TDP) is maintained. This CMP shall encompass all general aspects on: Configuration Identification, Configuration Control, Configuration Status Accounting, Configuration Verification and Auditing. The CMP shall summarize the CM organization and process used by the Contractor, and how this process will

be used on this contract. The CMP must show how the ECP process ties into the Contractor's configuration management processes.

The primary configuration baseline for this contract is the Government provided TDP, however, multiple baselines may diverge from this baseline with customer specific purchase orders and associated ECPs. The Contractor shall provide a CMP that outlines the management of multiple configurations of the JTE system.

In the case of multiple configuration baselines, a separate count shall be created for the release of the design CDRLs and TDP for each configuration baseline being maintained.

The CMP shall include a detailed process for upgrading drawings and documents of multiple configuration baselines while maintaining the integrity of each baseline. (CDRL A007)

4.1.7.1 Quality Assurance (QA) Program

The CMP shall also include a QA plan that outlines the Contractor QA program.

The Contractor shall maintain a QA program that integrates QA requirements into the manufacturing, and testing of hardware and software. The Contractor's QA program shall establish the necessary QA processes, controls, and approval authority to ensure that product quality, reliability, safety, and other element attributes are not compromised. The QA program shall be compliant with the requirements of ISO-9001 IAW the SPS. Unless otherwise specified in the contract, the Contractor is responsible for ensuring all inspection requirements are met and ensuring standards for quality deliverables are set. The Government reserves the right to perform any inspection, or verify any test and inspection record it deems necessary to ensure the requirements of the SOW and the SPS are met. Except as otherwise specified in the contract, the Contractor may use their own or any other suitable facilities approved by the Government to perform the inspection set forth in the SOW where such inspections are deemed necessary to assure supplies conform to prescribed requirements.

Previous acceptance or approval of material by the procuring activity shall in no case be construed as a guarantee of the acceptance of the finished product. The Government reserves the right to inspect any part, assembly, or testing event, using a Program Office Representative, or other Government representatives. The Contractor shall support all inspections required by the Government. (CDRL A007)

4.1.8 Configuration Audit Plan

The Contractor shall deliver a configuration audit plan containing the provisions for performing an FCA and PCA as part of First Article Testing on each end-item type, for each delivery, standard and accelerated, and retrofit kit ordered. (CDRL A019)

4.1.9 Data Management

The Contractor shall implement a data management program with controls to address quality of data preparation, compliance with CDRL specifications, timely submittal, maintenance, and tracking of all data deliverables, data products, and related correspondence. The Contractor shall, as part of their data management program, ensure proper handling of the GFI TDP IAW the distribution statements and other markings. All CDRL items shall be packaged separately and delivered as data items. All deliverables shall be delivered in English and in the format and media established by the individual CDRLs. If a CDRL does not specify a length of time for review, the Government will have 45 calendar days. If the Government requires more than 45 calendar days the Contractor will be notified in writing. Acceptance of a deliverable will follow the instructions identified in block 7 of the CDRL. In the event of rejection of any deliverable, the Contractor will be notified in writing by the Contracting Officer of the specific reasons why the deliverable was rejected. The Contractor shall have ten business days to correct the deliverable and resubmit to the Government for re-inspection. If the Contractor requires longer than ten business days, the Contractor shall provide a written notification of the delay within five business days and provide justification for the delay. The Contractor shall be responsible for redelivery of CDRLs affected by ECP changes approved by the Government IAW CDRL delivery timeline requirements if not otherwise specified in the ECP.

4.1.9.1 Government Data Rights

The Government requires the ability to fully sustain the JTE program as well as support future procurement requirements competitively. The Government is providing a Government owned TDP as GFI under this contract and retains all rights to the TDP as well as all changes to this data under the contract. Therefore any ECP changes affecting the Government owned TDP shall be delivered to the Government with Unlimited Rights as the action(s) will be fully funded by the Government. Any non-commercial technical data developed by the Contractor or a subcontractor that exceeds the scope of the TDP shall be delivered with a minimum of Government Purpose Rights (GPR), when mixed funding from the Government and Contractor were utilized. Non-commercial technical data includes, but is not limited to: computer software, systems, processes, and technical data. Computer software is defined as source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulas and related material that will enable the software to be reproduced, recreated or recompiled. The Contractor is required to include flow down provisions in all subcontracts requiring delivery of a minimum of GPR in all technical data and software delivered to the Government under this contract. Any assertions of data rights other than Unlimited Rights to any of the aforementioned data must be in writing prior to basic contract award and agreed upon by the Government. Also, changes to data rights assertions due to ECPs must be made in writing as part of the ECP proposal and award and agreed upon by the Government.

4.1.9.2 Commercial Item Technical Data License Rights

The Government shall receive, at a minimum, license rights IAW DFARS 252.227-7015 for all Contractor identified commercial item technical data, as proposed in the Contractor's technical solution, under this contract.

4.1.9.3 Standard Commercial Software License Rights

The Government shall receive, at a minimum, standard commercial license rights in all commercial computer software, as identified and proposed in the Contractor's technical solution, associated with this contract as outlined in DFARS 227.7202. The Contractor shall deliver a list of commercial software licenses and keys for each computer within an end-item, retrofit kit, Software Development Station (SDS), spares, and support equipment ordered. (CDRL A050)

4.1.9.4 Distribution of Technical Documents

The distribution of technical documentation shall be no less than Distribution Statement D unless otherwise stated in a CDRL or in the provided GFI IAW AFI 61-201. Distribution D denotes authorized distribution to the Department of Defense (DoD) and DoD Contractors only (AFI 61-201 *Management of Scientific and Technical Information (STINFO) 29 Jan 2016).* If any deliverable is other than Distribution D, the Contractor must identify and obtain approval from the Government prior to submission. Technical documentation shall also include appropriate export control and destruction notices.

4.1.10 Technical Orders (TO)

The Government shall have Unlimited Rights in all TO change pages and manuals modified or delivered under this contract. The Contractor shall develop, prepare and deliver TO change pages in MIL-STD-38784A, MIL-STD-38807C, and MIL-PRF-5096G format resulting from ECPs. The Contractor shall ensure the data supports the USAF two level JTE maintenance concept (operation level and depot level) and ensure the TOs are fully sustainable with the configuration of the JTE system/equipment's hardware, software, firmware and operational mission requirements. The Contractor shall deliver their QA validated TO change pages no later than 20 business days prior to the completion of any approved ECP. TO change page procedures must account for and document the support equipment required, provide any commercial technical manuals referenced if different from existing manuals, and include necessary usable on code identification. (CDRLs A041, A042)

4.1.10.1 Provisioning Technical Documentation (PTD)

The Contractor shall submit PTD in LSA036 format compatible with the AFMC Automated Provisioning System (D220) as required by MIL-PREF-49506. PTD shall be required as part of any ECP intended to alter the hardware baseline. The schedule for submitting the PTD shall be IAW the authorizing ECP Provisioning Performance Schedule (PPS) (AFMC Form 718). (CDRLs A036, A037, A039)

4.1.10.2 Supplemental Data for Provisioning (SDFP)

Schedule and requirements for submitting the SDFP shall be IAW the authorizing ECP Provisioning Performance Schedule. (CDRL A039)

4.1.11 Risk Management

The Contractor shall establish, execute, and sustain a Risk Management Plan. The Risk Management Plan shall, at a minimum (CDRL A006):

1) Identify, analyze, mitigate, and track schedule and performance risks, integrating quantitative risk assessments
2) Identify, analyze, manage, and track risks that could impact the outcome of test events
3) Use risk assessments as part of entry and exit criteria for all design reviews
4) Identify effect to Key Performance Parameters (KPP), Key System Attributes (KSA), Mean Time Between Failure, and Mean Time to Repair, as outlined in the SPS, and show mitigation for each risk
5) Review current risks as part of each formal PMR
6) Review current and new risks as part of any ECP

4.1.12 Government Contract Management

Responsibility for Government contracting activities rests solely with the Procurement Contracting Officer (PCO). No conversation, recommendations, or direction, whether given directly by, or implied by Government personnel, that will affect the scope, schedule, or price of the program covered by this SOW shall be acted upon by the Contractor unless specifically approved by the PCO in writing.

The Contractor shall deliver a safety plan that outlines compliance with all safety provisions, e.g., technical specifications, technical publications, and Federal Contractor Occupational Safety and Health Standards (Title 29 CFR Part 1910). If there is no applicable Occupational Safety and Health Administration (OSHA) standard, use other applicable nationally recognized sources of safety, health, and fire prevention standards. (See appendix A for information on safety) (CDRL A013)

4.1.13 Government Furnished Property (GFP)

The only anticipated GFP on this contract is technical data, SDS, and training material. However, if the Contractor requires additional GFP, and the need is validated by the Government, the following is applicable.

The GFP, as defined in this SOW, includes Government Furnished Equipment (GFE) and GFI. Any GFP provided to the Contractor shall be inventoried and maintained. Contractor GFP requests shall include all information required to complete form AFMC IMT 8 .Contractor GFP requests will be rejected if they are incomplete, or the GFP is not available. Formal GFP requests shall be written and submitted to the Contracting Officer not later than 90 days prior to need

date(s). Location of GFP access, vendor facility or operating location, shall be submitted as part of the GFP access request to the PCO. If the Contractor requires access to operational units a visit request shall be coordinated through the Program Office and Joint Personnel Adjudication System (JPAS). All required visit request information shall be provided by the PM, or their designee, to the Contractor.

In the event of an accident involving GFP, the Contractor shall immediately report, to the PCO and Government PM, all available facts relating to each instance of injury to personnel or damage to GFP. If a major mishap, as defined in AFI 91-204, involving GFP occurs, the Contractor shall immediately secure the accident scene and the damaged item until released by the accident investigation authority. If the Government elects to conduct an investigation of the accident, the Contractor shall cooperate fully and assist Government personnel until the investigation is completed at no additional cost to the Government. The Contractor shall include a clause in each of its subcontracts requiring subcontractor cooperation and assistance in accident reporting and investigation. The Contractor is responsible for all costs associated with shipping GFP. The Contractor is responsible to make all arrangements for the shipment of GFP. The Contractor is responsible for any/all damages as a result of loading, shipment, unloading, and use of GFP. At the completion of all contract activities and prior to final contract closeout or invoicing, the Contractor shall return all GFP to the SPO, operating location of origin, or as directed in writing by the PCO. The Contractor shall maintain a property accounting system and shall submit inventory audits as part of the monthly report. (CDRLs A009, A012)

4.1.14 Systems Engineering

4.1.14.1 General Engineering Methodology

The Contractor shall implement robust Systems Engineering processes to fabricate, integrate, test, evaluate, document, deliver, and support the FC2U, MC2U, TEU, WTEU, and other components as described in this SOW. Technical management shall include but is not limited to decomposition of requirements, engineering trade studies and implementation of the System Engineering processes. Expected and measured system performance compared to the KPPs and KSAs in the SPS shall be briefed at all PMRs.

4.1.14.2 System Specifications

Using the Government SPS, system specifications, subsystem specifications, and other Government provided technical data or interface documents as the basis, the Contractor shall ensure that all requirements have been met. Updates to system or subsystem specifications shall be part of a Government approved ECP. Specification Change Notices shall be required for any requested specification changes. (CDRLs A016, A020, A021)

4.1.14.3 Hardware Architecture

Hardware architecture shall be updated only as part of an approved ECP. (CDRLs A017, A018, A020)

4.1.14.4 Engineering Reviews

The Contractor shall host, at their facility or another Government approved location, Technical Interchange Meetings (TIMs), Integrated Test Team meetings, Test Readiness Reviews (TRRs), and Program Management Reviews (PMRs). All associated deliverables that are part of the TIMs, TRRs, and PMRs shall be delivered IAW the contract CDRLs.

Each formal review shall utilize agendas, presentation material, and minutes, which shall be delivered to the Government. The duration and schedule for each of these reviews must be coordinated with the Government to assure that Government participation is possible. The Government reserves the right to postpone any review that it deems the Contractor is not prepared for. (CDRLs A001, A002, A003)

4.1.14.5 Non-Conforming Material

The Contractor shall control all material that has been determined to be non-conformant to engineering design documents in any way. A Material Review Board, with mandatory Government program office participation, shall be convened to disposition non-conforming materials. All minor non-conformances that result in a "use-as-is" disposition shall be reviewed with the local Government QA Representative (GQAR) or DCMA quality inspector for concurrence with the disposition. All materials that are "reworked" shall be presented to the GQAR as part of the re-inspection process for concurrence. All materials that are "returned to vendor" shall not require concurrence of the Government. All major non-conformances that are not "return to vendor" for the disposition shall be presented to the Government Program Office for review and approval. A summary of all non-conformances, including part number, revision and location in process where the non-conformance was identified, and the disposition shall be documented and released as part of the monthly status report. (CDRL A009)

4.1.14.6 Request for Variance

Any major material discrepancies found that are proposed for use or any product that does not fully meet the standards of the SPS, shall be submitted on a Request for Variance (DD Form 1694) for approval by the Government. (CDRL A022)

4.1.14.7 Specialty Engineering

The Contractor shall establish and maintain a Hazardous Material Management Plan (HMMP) and deliver a HMMP report. The Contractor's HMMP shall include Radiation Hazard Control Procedures IAW AFI 48-109. The Contractor shall follow all system security engineering and cybersecurity requirements in the SPS and other program documents such as the Program Protection Plan (PPP), the DD Form 254, the JTE Authority to Operate (ATO) package, and the Security Classification Guide (SCG). (CDRL A008)

4.1.15 Security

4.1.15.1 Classified Information

The Contractor shall protect all classified information provided or generated on this contract, per DoD 5220.22-M (National Industrial Security Program Operating Manual). This shall include, but is not limited to: Facility Clearance, Personnel Security Clearance, Storage, Training, Marking, Safeguarding, and Reproduction.

4.1.15.2 Clearance

This contract will require access to classified information at the SECRET level. Work requiring a SECRET clearance shall require a DD Form 254 on file. The Contractor is not authorized to view the classified document(s) without a SECRET security clearance. All classified documents and information systems shall be protected IAW the National Security Act of 1947 and the Electronic Warfare Threat Emitter Security Classification Guide.

4.1.15.3 Confidentiality

The Contractor shall abide by all Government rules, procedures and standard of conduct. The Contractors requiring access to Government Automated Information Systems (AIS) shall have background investigations and security awareness training completed after contract award but prior to AIS access. The Contractor/contract personnel shall not release or remove system documentation, data, or reports generated by or through use of Government systems. All requests for requests for information shall be forwarded to the JTE JEDI program PCO.

4.1.16 Diminishing Manufacturing Sources and Material Shortages (DMSMS) Monitoring:

The Contractor shall monitor for parts obsolescence utilizing predictive tool(s), the GIDEP database, and other like industry databases. The Contractor shall notify the Government within five working days of discovery. The Contractor shall avoid counterfeit replacement parts and materials. Following initial notification the Contractor shall deliver information concerning the impact to procurement or production, and potential options for alternate parts, sources of supply, or design changes within ten working days of Government notification. Formal changes to the design will be approved as part of an ECP IAW SOW paragraph 4.8. (CDRLs A020, A049)

4.2 END-ITEMS

Each end-item shall be built IAW the GFI TDP. Updates to replace obsolete parts shall be through an ECP. Form, Fit, Function, and Interface (F3I) ECPs and all end-item production qualification testing shall be included in the scope of end-item production. First Article Testing shall not be included as part of the end-item price, but shall be priced into the First Article CLINs. See paragraph 4.4 Qualification Testing for more details. The end-item TDP shall be updated as part of any ECP with all affected drawings issued as a revision to the existing

Government Drawing(s) and delivered to the Government with a completed Engineering Change Order (AF3925) for each drawing, identifying all changes. (CDRLs A017, A018, A020)

Prior to proceeding into formal production of systems the Contractor shall ensure they can meet a minimum Manufacturing Readiness Level (MRL) of 7 before any required First Article Testing. Through First Article Testing and other available supporting documentation the Contractor shall provide justification that their production capability then meets a minimum MRL 9 as part of MRR as outlined IAW SOW paragraph 4.1.6.8. All MRLs are defined within the Manufacturing Readiness Level Deskbook Version 2.2.1 and described within the MRL_Users_Guide_V12.5.16.xls (attached in Section J of the Model Contract).

The Contractor shall provide all the equipment, manpower, facilities and other necessary resources to produce, test, maintain and deliver end-items as orders are awarded. The Contractor is not responsible for Site Acceptance Test (SAT) facilities and aircraft. The Contractor shall complete all required periodic maintenance as defined in 43D7-19-7-6WC-1 and 43D7-19-8-6WC-1. See the pricing workbook for the end-item part number list. Multiple quantities of the same end-item, regardless of end user, in an order count towards the discount table (bundle buy). Quantity buys shall be applied at the CLIN level, not the sub-CLIN level. The Government requires a maximum of 24 end-items to be delivered IAW the contract delivery schedule, unless a higher maximum quantity is mutually agreed upon during contract performance. The Contractor shall be able to produce 24 JTE end-items within the standard and accelerated delivery schedules outlined below in paragraphs 4.2.1 and 4.2.2. The Government will not order more than 24 total end-items in a 12 month period unless mutually agreed upon.

4.2.1 FC2U

The Contractor shall produce and deliver all FC2Us ordered within 12 months (accelerated) or 18 months (standard) After Receipt of Order (ARO).

4.2.2 MC2U, TEU, and WTEU

The Contractor shall produce and deliver all MC2Us, TEUs, and WTEUs ordered within 18 months (accelerated) or 24 months (standard) ARO.

4.2.3 Systems Design

JTE FC2Us, MC2Us, TEUs, WTEUs, retrofit kits, and spares produced or procured under this contract shall be compatible with currently fielded end-items as stated in the SPS. The Government will provide, as GFI, JTE pre-mission files that shall be loaded into each end-item. Any changes to these pre-mission files shall only be accomplished as part of an approved ECP. Additionally, all assets produced or procured under this contract shall conform to the configuration baseline of the JTE-FO. End-item design changes due to obsolescence, or other issues shall be submitted to the Government as an ECP IAW paragraph 4.8. (CDRLs A020, A021, A022)

4.2.3.1 Design for Non-available Items

The Contractor shall identify obsolete parts discovered during the performance of this contract. If obsolete parts are discovered, the Contractor shall provide notification and submit an ECP to replace the part(s). If unavailable parts are discovered, the Contractor shall, as part of an ECP, propose replacement parts that meet all data rights requirements IAW paragraph 4.1.9.1 and meets at a minimum Technology Readiness Level 6. (CDRLs A020, A049)

4.2.3.2 Hardware Design

The Contractor shall adhere to the Government approved configuration baseline for hardware provided in the GFI technical data. Any changes required or recommended to the hardware design shall be delivered as part of an ECP per paragraph 4.8. The Government will approve or deny hardware configuration changes IAW the ECP process in paragraph 4.8. (CDRL A020)

4.2.3.3 Software Modification

If necessary during the course of production or procurement, any software changes that the Contractor feels need to be addressed shall be proposed to the Government as an ECP. If the Government deems the proposed changes necessary the ECP process shall be followed as defined in paragraph 4.8 authorizing the Contractor to make the changes.

Any software modifications made as part of this contract shall meet all requirements of the SPS, and shall undergo Computer Software Configuration Item (CSCI) testing IAW paragraph 4.4.4. The software changes shall be made to the software, provided by the Government, as part of an approved ECP. Once all software changes are completed, the software source code and executables shall be provided to the Government for incorporation into the Government software configuration management systems. The Contractor's software CM shall be, at a minimum, equivalent to the Software Engineering Institute (SEI) Capability Maturity Model Integration (CMMI) Level Three Core Process Areas and Development processes. (CDRLs A015, A016, A020, A026 through A031)

The Contractor shall ensure that all units (end-items and computers) delivered under this contract are up to date with all patches and Security Technical Implementation Guides (STIGs) available at the time of delivery. The Contractor shall provide recommended changes to the Risk Management Framework (RMF) package to facilitate a new ATO when proposed software changes affect the cybersecurity posture of the JTE. The Contractor shall work in conjunction with the Government Program Office to conduct necessary vulnerability remediation including, but not limited to all current updates, patches, security advisories and STIG compliance scans. The Contractor shall provide remediation for the operating system and additional software/firmware including, but not limited to, the BIOS, Acrobat Reader, Java, MS Office and any other third party software deemed necessary as part of CSCI testing. The Contractor shall address any STIG CAT I and ACAS Critical and High findings as part of the software change effort. All applicable Software Licenses and Keys shall be provided.

For all commercial software used in design, or updated during production or procurement by the Contractor or third party vendors, the Contractor shall deliver electronic copies of all firmware, technical data, drivers, and all special installation procedures. A separate Software License Requirements List (SLRL) shall be provided for all end-items delivered. The SLRL shall include commercial software keys to verify authenticity of all commercial products installed on the systems delivered. (CDRL A050)

Design changes to end-item software due to obsolescence, issues concerning proprietary rights, or other issues shall be addressed in the proposed ECP. (CDRL A020)

Two top-level CSCIs shall be used; one for installation on the TEU and WTEU and one for installation on the MC2U and FC2U. These shall be delivered with Install Shield-type programs to facilitate the installation. The organization of the various CSCIs is shown in Table 2. The most current CSCIs and executables will be provided to the Contractor as GFI at the start of the POP and at any time during the contract when the Government fields an update to one or both of the CSCIs.

Table 2. JTE Nominal Computer Software Configuration Item Structure

TEU Control Computer	**C2U**	
	MSC Computer	**MSAT Computer**
SCCMainWin SCCMainRtx Configure CEESIM Fault_Control Fault_Editor Cal_Editor Calibration_Control Cal_Purge_Utility UView TEU Config Editor TEU Version Tool	Radar Data Integration Processor Message Processor Pairing Manager/Terrain Masking Integrated Air Defense System CEESIM Graphical User Interface Editor Data Miner	Mission Configuration Control and Status Multi-Sensor Display Version Validation Tool

Fault Md5compare		
THIRD PARTY SOFTWARE		
Windows 7 Operating System Interval Zero Real Time Operating System (v5.5) IADS Executable Dameware v12.x or later Exceed – Win NT PKZip for Windows v6.x or later MATLAB, single user license MS Office, 2013, Standard Edition or equivalent Adobe Reader Windows Media Player Linux Red Hat v6.x Operating System Tight VNC v1 7Zip v16.04 or later Direct 9.x SDK SIMDIS v9.5 or later Radar Receiver TU License Command View for CDX350 RTX64 2014 Hyperterminal v7 NFS Server Software		

VLC v2.x.x
IM Disk Toolkit v2.638 or later
iVDO Viewer
Java SDK v8
MAK RTI License

4.2.3.4 CSCI Deliverables

If software modification is required per an ECP the Contractor shall deliver each CSCI to the Government with all source code, executables, software CM database update, and all required supporting documentation. Each CSCI shall have a Software Version Description (SVD) that outlines all changes for that CSCI. The SVD shall outline all changes both by providing a directory of all checksums and a full description of each change required. (CDRLs A015, A027, A031, A041)

4.2.3.5 Software Verification

Software verification shall be clearly outlined in the ECP and will be conducted IAW approved JTE CSCI testing requirements and procedures. Updates to testing procedures shall be delivered not later than 10 business days prior to the test event, and a final update incorporating corrections identified during testing shall be delivered in conjunction with the test report. (CDRLs A028, A029, A030)

4.2.3.6 Software Releases

The Contractor shall provide fully verified software releases to the Government program office. All software releases shall include at a minimum a single CD/DVD for each CSCI that contains the application software to be installed. The software application CD shall be accompanied with another CD/DVD that contains all documentation for that CSCI including the software CM database update. Software source code shall be delivered as part of each software delivery. If the data is too large to fit onto a single CD/DVD multiple discs can be delivered. The Government will retain sole responsibility for formal software releases to the fielded JTE fleet. (CDRL A031)

4.2.3.7 Technical Data

The Contractor shall provide new or updated drawings of the FC2U, MC2U, TEU, WTEU, all subassemblies, Retrofit Kit, and SDS that are changed as part of an approved ECP. Preliminary drawings can be delivered in PDF format; any PDF drawings delivered shall have all sheets for one drawing included in one document. The final delivery of all drawings shall be in their native, editable format. If the drawing being changed is a revision of an existing drawing, an AF 3925

shall be delivered every time the drawing is revised. The AF3925 shall contain a detailed description of all changes that were made to the drawing. Each drawing changed shall have a unique AF3925 provided. The Contractor shall request an Engineering Order (EO) tracking number for each AF3925. All new drawings shall be clearly marked identifying the USAF (CAGE: 98747) as the design activity and shall comply with proper MIL-STD format as identified in the CDRL. (CDRLs A017, A018)

The Contractor shall generate a Data Accession List (DAL) identifying all documentation that has been produced as part of the program. One DAL shall be delivered following the PCA for each end-item type and retrofit kit. An updated DAL shall be delivered as part of each ECP which requires changing, updating, or creating new technical data. Upon final Government approval of the produced drawings through final PCA, the Government will assume design authority of all new or modified system documentation. All drawings and documents delivered as part of this contract shall be marked to identify Government design authority. (CDRLs A018, A020)

4.2.4 Foreign Military Sales (FMS)

In addition to the production on behalf of the US Government, this contract scope includes FMS requirements. The procurement and production of any FMS end-items, spares, or support equipment will be IAW contract CDRLs and SOW requirements. FMS end-items will be included in any orders as a bundle buy so that the total of all end-items or equipment of a specific type are counted towards the quantity discount table in the pricing workbook. Any modifications required in support of a specific FMS case will be covered as an ECP to the system design, and non-recurring engineering costs will be priced according to SOW paragraph 4.8 ECPs. The end-item CLINs will be utilized for the procurement of these items under each delivery order.

4.3 SITE SURVEY(S)

The Contractor shall be capable of supporting site surveys at defined delivery locations 30 days ARO and no later than nine months prior to scheduled system delivery unless mutually agreed upon between the Government and the Contractor. Actual dates will be coordinated between the Contractor, Air Combat Command, Program Office, Range Leadership, and any Supported Commands (USAFE, PACAF, etc.). The Contractor shall identify to the Government the site setup and logistics deficiencies at various range locations in order to successfully deliver, integrate, and test each end-item at the defined delivery location. Additional site surveys to each location may be ordered to verify that all of these requirements are met before the item arrives at the site. The physical infrastructure at each site is the responsibility of the Government. Site surveys can be either CONUS or OCONUS. The Contractor has the right to recommend site surveys. Site survey reports will be used as the basis of Government preparations required ahead of delivery at the defined delivery location. (CDRL A032)

4.4 QUALIFICATION TESTING

The types of qualification testing required on this contract are:

1) Line Replaceable Unit (LRU) testing
2) CSCI Testing
3) Bench level integration testing
4) FAT
5) Environmental Testing
6) Vibration/Mobility Testing
7) Contractor run SAT
8) Reliability testing shall be IAW reliability test plan. The verification methodology shall use documentation generated by the Contractor and approved by the Government.
9) Full Range Signal Fidelity Testing

Verification by testing shall include system integration testing, FAT, and SAT. The SAT, which includes integration into an existing range, shall be conducted as an operational demonstration of the end-item performance. The Contractor shall verify requirements IAW AFI 99-103 and the methodology stated in section 5 of the SPS that identifies whether analysis, inspection, demonstration, and/or test will be used. Definitions of these terms are found in section 6.5 of the SPS. (CDRL A033, A034)

The Government will provide test plans and procedures as GFP, the Contractor shall update or supplement as necessary to complete all testing prior to MRR or as part of an ECP. All test plans and test procedures shall be provided with traceability to requirements in the SPS, as well as all derived requirements. Tests at the factory shall ensure that all end-items can be tested using simulation when actual end-items are not available. Upon contract award, the Contractor shall provide the Government with all required documentation for the Government to obtain frequency authorization for their Factory Acceptance site. SAT shall require interfacing with and testing as a full equipment set, described as one FC2U or MC2U with at least one TEU or WTEU, at the Government directed test or training range. The Contractor shall supply all tools and support equipment required to resolve any deficiencies during SAT. (CDRLs A033, A034)

4.4.1 First Article Testing

If ordered, First Article Testing of each end-item type shall include FCA, PCA, and shall verify that all aspects of the system performance have met the system performance specification, system specifications, subsystem specifications, drawings, and other applicable technical documentation. In the event of an unsuccessful First Article Test the Contractor shall re-conduct all required testing at no additional cost to the Government. The PCA shall validate that the end-items match all drawings. The PCA can be conducted incrementally, with multiple PCA reports delivered. Each end-item undergoing First Article Testing shall be integrated into, and tested on a Government test or training range as part of testing/validation and delivery efforts IAW the

SPS and SOW 4.4.10. First Article Testing shall not be included in the end-item price to allow the Government the ability to count the end-item as part of the quantity discount table. (CDRLs A023, A033, A034, A035)

If ordered, First Article Testing of the retro-fit kit shall include FCA and PCA. The PCA shall validate that components of the retrofit kit match all drawings. The FCA shall verify that components of the retrofit kit meet all performance requirements. First Article Testing shall not be included in the retrofit kit price. (CDRLs A023, A033, A034, A035)

First Article Testing shall adhere to the following sequence:

1) LRU Testing
2) CSCI Testing
3) Bench Level Integration Testing
4) First Article FAT
5) PCA
6) First Article SAT
7) Reliability testing shall be IAW reliability test plan. The verification methodology shall use documentation generated by the Contractor and approved by the Government.

The Contractor shall deliver to the Government updates to the First Article Testing Test Plans and Procedures. (CDRLs A033, A034)

4.4.1.1 Signal Fidelity Testing

The Contractor shall complete Signal Fidelity Testing as part of First Article Testing for the TEU and WTEU. Signal Fidelity Testing shall verify that all threat modes programmed meet the system signal requirements as outlined in the Classified JTE Signal Definition Document (SDD), Annex A to the JTE SPS. The Contractor shall utilize the Signal Fidelity test procedures found in the Government provided TDP and shall update or supplement as needed. The updated procedure and any supplemental documents shall be delivered as a new procedure. (CDRLs A033, A034, A035)

4.4.2 End-Item Production Testing

End-item production testing (after First Article Testing) shall be accomplished on each end-item ordered and shall be included in the unit price. This shall consist of LRU testing, FAT at the Contractor's facilities, SAT at fielding location, and reliability monitoring. The Contractor shall ensure the end-items meet SPS requirements. The end-item operation shall be demonstrated using Government approved FAT/SAT procedures, provided as GFI. TOs and Maintenance Procedures shall be reviewed. Virtual inputs and simulators of real-world systems may be used as necessary to demonstrate operation of data link interfaces, recorders, processors, displays,

communication interfaces, tracking controls, Local Area Network, remote controls, and local controls. (CDRL A033)

The Contractor shall update, as necessary, the GFI provided test procedures for the FAT and SAT. The Contractor shall deliver updates to FAT and SAT test procedures for each separate FAT/SAT test. (CDRL A034)

Government acceptance will be predicated on the results and analysis in the test report and the correction of deficiencies noted at FAT or SAT as part of Failure Analysis and Corrective Action Report (FACAR). The objective of the production FAT is to verify the system performance satisfies operational requirements, and is ready for the SAT. The results from any and all CSCI, vendor, component, unit, and integration tests shall be reviewed as part of the verification process. (CDRLs A023, A035)

4.4.3 Line Replaceable Unit (LRU) Testing

The intent of LRU inspection and testing is to verify that all mechanical, electrical and software interfaces are properly documented, and that the complete functions and requirements allocated at the LRU level have been verified. Each LRU shall be inspected and tested to ensure that it meets the allocated specifications of the LRU. The inspection and testing shall verify all F3I characteristics of the LRU. In-process inspection and testing will be monitored by the local GQAR or, if available, Government program office representatives. The Government will provide existing LRU test plans and procedures as GFI. Updates to provided plans and procedures shall be delivered to the Government through a formal document release process and will be delivered with Unlimited Rights. Testing shall be designed so that the tests shall completely cover all aspects of the LRU that require testing before integration at the next higher level. Test reports shall be provided and shall include drawing number, serial number, and revision of each sub-assembly or part that is included within the LRU, and shall include a tabular listing of dimensions on each sub-assembly or part. This tabular listing, in combination with the individual inspection reports shall be of sufficient quality that it can be used as part of a PCA. If sufficiently detailed, the Government may choose to allow the use of this data in lieu of disassembly of the LRU for PCA inspection. LRU inspection and testing shall be utilized for all end-items, and spares purchases. The Contractor shall implement Environmental Stress Screening on all LRUs that are deemed as high risk as outlined in the Risk Management Plan required in paragraph 4.1.11. When LRU testing is automated, all test software utilized shall be delivered with Unlimited Rights. (CDRLs A023, A033, A034, A035)

4.4.4 Computer Software Configuration Item Testing

The Contractor shall utilize the SPS, and the existing hardware architecture documented in the Capability Production Document (CPD) referenced throughout the System Performance Specification Document in Table 5 as the basis for updating and creating new software configuration items for the JTE JEDI effort. The JTE software consists of nested CSCIs, with a

top level CSCI produced for installation on the TEU/WTEU and another top level CSCI that is installed on the FC2U/MC2U. Each of these top level CSCIs includes lower level CSCIs. The software produced for JTE shall meet the backward compatibility requirements identified in the SPS. The software, when installed on the systems provided as part of this contract shall meet all requirements of the SPS. All proposed software changes will be approved as part of a formal ECP process and its associated documents. (CDRL A028, A029, A030)

If software changes are required and approved as part of an ECP, CSCI testing shall be performed for each CSCI according to the software test plan, delivered as GFI. This plan will describe the total software test approach at the system level, including complete software regression testing, and a description of all testing done at each CSCI level. The Contractor shall produce software test descriptions, software test procedures, and software test reports for each CSCI updated. The software test plan and software test descriptions/procedures will address all applicable requirements from the SPS and requirements for cybersecurity as defined in DoD instructions (DoDI) 8510.01, Risk Management Framework (RMF) for DoD Information Technology (IT), March 12, 2014; DoDI 8500.01, Cybersecurity, March 14, 2014; and DoDI 5000.02, Operation of the Defense Acquisition System. Software test reports shall be delivered to the Government and shall be formatted to facilitate utilization in the FCA(s). Once software testing has been completed and the results are approved by the Government as part of the initiated ECP there shall be no additional software changes without written Government approval from either the contracting officer or their designated representative. (CDRLs A020, A024 through A031)

4.4.5 Bench Level Integration Testing

For each end-item undergoing First Article Testing, multiple LRUs shall be integrated in a flat-bench level sub-assembly arrangement and tested to verify that correct interconnection and software communication specifications have been met. To the maximum extent practical, the actual cables or interconnections used in the final assembly shall be utilized. The part number, serial number and revision of each LRU shall be documented in the test report. The Government will provide existing bench test plans and procedures and the Contractor shall determine the optimal levels of integration, and propose this as part of the bench integration test plan for this contract. Each bench level integration test shall utilize tailored test procedures. As part of each test, the communications messages and interface shall be completely verified between all interconnected LRUs. The results of these verification activities shall be included in the bench level test report, and may be used as part of the system level regression testing in lieu of re-verification as part of the system level software regression testing. Bench level integration testing is expected to continue at higher and higher levels of integration, with each new level of integration verifying each and every interface added at the higher level, up to and including the highest level of integration that allows the use of production cables as part of the integration effort. (CDRLs A023, A033, A034, A035)

4.4.6 Factory Acceptance Test (FAT)

Each production end-item shall be subjected to a FAT. The FAT shall demonstrate that the system conforms to the Government JTE SPS requirements that can be tested at the factory location. The FAT shall be utilized to test the completely assembled system at the Contractor's facility and shall be conducted in two parts; (1) an inspection and test of each LRU and (2) a system operational test. The Government shall witness all tests. Test procedures, provided as GFI and updated as necessary by the Contractor to conduct FAT, shall be used and shall be designed so that the end-item can be tested as a stand-alone deliverable. Simulation of the other units required for testing shall be used. A TRR shall be accomplished 14 calendar days prior to the start of FAT. The TRR shall include the review of hardware and software status, review of test procedures, resource availability and any other issues that may impact testing. The TRR shall also include a review of lower level test reports associated with any items contained within each end-item undergoing First Article Testing that have not been previously reviewed or accepted by the Government. The level of testing shall be documented for each end-item undergoing First Article Testing in the First Article Testing plan. The test procedures shall include verification of the SPS requirements IAW the Government SPS. Documented operator procedures shall be used for operational functions performed during tests. The test setup includes but not limited to: interfaces, data links, test support equipment, and emulators. Raw and interpreted test data is considered part of the test and shall be provided in the applicable test report. The test report shall document test results in a manner that facilitates use as part of the FCA. The test report shall be delivered to the Government for approval prior to additional testing of any end-item that underwent First Article Testing. (CDRLs A023, A033, A034, A035)

4.4.7 Environmental Testing

The Contractor shall test any new LRUs that were changed and have not undergone environmental testing to ensure that each unit meets the climatic condition requirements. High temperature, low temperature, humidity, rain, freezing rain, wind, dust and fine sand, salt, salt fog, and ice load testing (as outlined in SPS section 5) in an operational and non-operational state shall be accomplished by the Contractor at an appropriate facility. The Government will witness all environmental testing, and will approve the test plans and procedures before the start of any testing. The test plans shall be designed to demonstrate that the units tested meet all aspects of the Government JTE SPS. After every test the Contractor shall physically inspect for potential impacts to part mean time between failure calculations. Following each environmental test, test reports shall be delivered to the Government IAW the approved test plans. These test reports shall include the drawing number, serial number, and revision of each end-item being tested, outline any issues encountered, physical inspection findings, and document test result in a manner that facilitates use as part of the FCA. It is the Contractor's responsibility to arrange for and execute all necessary environmental testing. The costs, excluding F3I replacements, for environmental testing requirements shall be documented as part of the ECP process as part of the requirements for changing the baseline hardware configuration. Each end-item undergoing

Environmental Testing shall be refurbished to an "as-new" configuration including appearance. "As-new" configuration is defined as a unit that is free of visual and performance defects (i.e. corrosion, physical damage, etc.). (CDRLs A023, A033, A034, A035)

4.4.8 Electromagnetic Interference/Electromagnetic Compatibility (EMI/EMC)

IAW the Government SPS requirements, any new LRUs that have not undergone EMI/EMC testing shall be subjected to EMI/EMC testing. These tests shall be performed by the Contractor at an appropriate facility. The testing shall be accomplished by Contractor personnel with Government witness. Test result reporting shall be delivered IAW with Government approved test plans. These test reports shall include the drawing number, serial number, and revision of each end-item being tested, and shall document test result in a manner that facilitates use as part of the FCA. The test reports should highlight at a minimum EMI/EMC performance of the item under test and any failure points should be highlighted. It is the Contractor's responsibility to arrange for and execute all necessary EMI/EMC testing. The costs for LRU level EMI/EMC testing requirements shall be documented as part of the ECP process as part of the requirements for changing the baseline hardware configuration. The costs, excluding F3I replacements, for EMI/EMC testing requirements shall be documented as part of the ECP process as part of the requirements for changing the baseline hardware configuration. (CDRLs A023, A033, A034, A035)

4.4.9 Vibration/Mobility Testing

Any new LRU that has not undergone vibration or mobility testing shall be subjected to transportation and vibration testing to confirm that the end-item deliverables provide shock and vibration protection associated with Type III mobility, IAW SAE-AS8090. As part of the test, each end-item shall be inspected for damage, and shall be tested to confirm that the system continues to perform IAW the overall Government SPS requirements. The Government will witness all testing, and will approve the test plan and test procedures before the start of any testing. Test reports shall be delivered to the Government. The costs, excluding F3I replacements, for vibration/mobility testing requirements shall be documented as part of the ECP process as part of the requirements for changing the baseline hardware configuration. Each end-item undergoing Vibration/Mobility Testing shall be refurbished to an "as-new" configuration including appearance. "As-new" configuration is defined as a unit that is free of visual and performance defects (i.e. corrosion, physical damage, etc.). (CDRLs A023, A033, A034, A035)

4.4.10 Site Acceptance Testing (SAT)

The Contractor shall perform a SAT of each end-item at a Government directed test or training range following the completion and Government approval of all previous First Article Testing. The Government expects each end-item undergoing First Article SAT to be completed at a CONUS location. The Government anticipates each end-item undergoing Production SAT to be

completed at either a CONUS or an OCONUS location. Potential SAT locations are listed in Table 3: Potential SAT Locations. A TRR shall be accomplished 14 calendar days prior to the start of any SAT. The TRR shall include the review of hardware and software status, test procedures, resource availability and any other issues that may impact testing. SAT shall demonstrate transportation to the range site, setup, checkout, pre-mission, mission, and post-mission states or sub-states using operator procedure manuals. Integration with the range data link interfaces, and the interface between the FC2U or MC2U and associated TEU or WTEU are considered part of the deployed or setup states. After reassembly from shipment to the range, the end-items shall be inspected for damage and checked for operational status. The Production SAT shall consist of operation using AF TOs (43D7-19-7-XX and 43D7-19-8-XX series TOs), integration with the range data link interfaces, and JTE set communication. The Government will provide as GFI, copies of the most current TOs. This test shall be Contractor conducted and Government witnessed.

The Production SAT is used to verify; (1) there is no degradation following transportation, installation, and integration, (2) those system performance requirements that cannot be verified during FAT, (3) the system meets requirements in the operational environment, and (4) any range interfaces that have not been previously verified.

In addition to all requirements verified as part of Production SAT, the First Article SAT functional operations shall demonstrate the system deployment phases of (1); operating as a self-contained stand-alone configuration, (2) operating as a node in an IADS support mission configuration, and (3) range control mission configuration. Testing will include signal verification for TEU and WTEUs IAW the Government provided GFP.

The Government will arrange and pay for all mutually agreed upon range assets and flights required to complete the SAT. The Government will arrange for the other components of a JTE set not being delivered by the Contractor as part of SAT, such as an FC2U to test a TEU or WTEU and vice versa, to be used during the SAT. (CDRLs A023, A033, A034, A035)

Table 3: Potential SAT Locations

Range (Not all inclusive)	
Snyder, TX	NTTR, NV
Poinsett, SC	China Lake, CA
Polygon Range, Germany	Eielson AFB, AK
Anderson AFB, Guam	Spadeadam, England
Mountain Home AFB, ID	Eglin AFB, FL
UTTR, UT	Santa Rosa Island, CA

4.4.11 Foreign Military Sales (FMS) Site Acceptance Testing (SAT)

For FMS end-items a DD250 must be signed at the completion of testing prior to overseas shipment. The Contractor shall complete an additional Production SAT (OCONUS) for each FMS end-item if ordered. A task order for FMS SAT must be awarded at least 45 calendar days prior to US SAT unless mutually agreed upon. (CDRLs A033, A034, A035)

4.4.12 Reliability

The Contractor shall build the system to meet the reliability requirements of the SPS. The Contractor is responsible for replacing any portion of the system that does not meet the reliability requirements through the ECP process in SOW 4.8. This process shall be performed until acceptance of ordered end-items. The Contractor shall deliver Reliability Predictions and Documentation of Supporting Data and will regularly update the deliverables as part of any ECP which changes the hardware configuration baseline. The Contractor shall develop and deliver to the Government a Reliability Test Plan that describes how the Contractor shall accomplish this effort. Testing necessary to determine a base reliability level and procedures to collect the hours of operation shall be described in the Reliability Test Procedure. The Contractor shall deliver updated Reliability Test reports to the Government quarterly, providing the current reliability of any end-items ordered. (CDRLs A014, A023, A033, A034, A035)

The Contractor shall provide preliminary Failure Analysis and Corrective Action Report (FACAR) report for all failures within five business days after the failure is identified throughout the POP to include manufacturing and First Article Testing. Incremental updates to the FACAR report are acceptable as the Contractor determines root cause and implements corrective action plans. Additionally, a final FACAR report shall be submitted when the failure analysis has been completed. (CDRL A023)

4.5 SOFTWARE DEVELOPMENT STATION (SDS)

If ordered, an SDS may be shipped in place, and added to the GFP inventory. The Government will provide software if requested by the Contractor but will maintain control of CM and retain Unlimited Rights IAW paragraph 4.1.9.1. If an SDS is shipped in place, it shall be delivered to the Government at the conclusion of the contract POP IAW paragraph 4.1.13, or upon the Contracting Officers written direction. SDSs shall be delivered within 18 months of the delivery order.

4.6 RETROFIT KITS

Retrofit kits shall be built IAW the GFI data package. The retrofit kit shall remove all obsolete and proprietary issues from the Legacy JTE systems and allow for interoperability between Legacy JTE systems and JTE-FO systems. Updates to replace obsolete parts shall be through an ECP. F3I ECPs shall be included in the scope of the retrofit kit production. The Contractor shall

provide all equipment, manpower, facilities, and other necessary resources to procure, test, and deliver retrofit kits for the legacy end-items as orders are awarded. The Contractor shall complete FCA and PCA for the initial retrofit kit ordered IAW paragraphs 4.1.6.7 and 4.4.3. Multiple quantities of the same item in an order count towards the discount table (bundle buy) regardless of the customer who owns the requirement.

The Government shall be granted and delivered a minimum of Unlimited Rights in all retrofit kit technical data and software created or modified under this contract. Technical data deliveries shall comply with paragraph 4.1.9 and 4.1.10 of this SOW. (CDRLs A017, A018, A020, A022, A023, A024, A025, A033, A034, A035)

4.7 SPARES & SUPPORT EQUIPMENT

The Contractor shall provide all equipment, manpower, facilities, and other necessary resources to procure, test, and deliver spares and/or support equipment as orders are awarded. See pricing workbook, of the contract for the parts list. Multiple quantities of the same item in an order count towards the discount table (bundle buy) regardless of the customer who owns the requirement.

4.7.1 Spares Delivery

Delivery of all parts shall be no later than 24 Months after delivery order award. Delivery of spares shall be IAW the requirements of paragraphs 4.10 Packaging, 4.4.3 Line Replaceable Unit Testing, and 4.4.2 End-item Testing. The Contractor shall provide an update to the proposed spares list as part of an approved ECP, if applicable. (CDRL A040)

4.7.2 Support Equipment

The Contractor shall identify at as part of any approved ECP all special hand tools, support equipment, and/or test equipment unique to the support of the operation, maintenance, and sustainability of the end-items that is new or modified because of the design changes. The Contractor shall submit a recommendation for Government approval, following the LSA070 format for any new support or test equipment. The Government will provide a baseline support equipment list as GFP. The Contractor shall provide an updated and validated support equipment list to be delivered with all ECP documentation. Delivery of all parts shall be no later than 24 Months after delivery order issuance. Delivery of support equipment shall be IAW the requirements of paragraph 4.10. (CDRL A037)

4.8 ENGINEERING CHANGE PROPOSAL (ECP)

The Contractor shall at times be required to make changes to the JTE system configuration baseline impacting hardware, software, support equipment, or spares. The Contractor shall utilize the ECP processes by generating and submitting a DD1692 ECP for all proposed

configuration changes. All ECPs shall be priced utilizing the fully burdened labor rates in the pricing workbook. (CDRL A020)

The Contractor shall also generate and submit either Requests for Variance or Specification Change Notices when a configuration change is being proposed. Requests for Deviation shall be submitted when a specification cannot be met and it is not appropriate to change the specification. Specification Change Notices shall be submitted when it is appropriate to change the specification as part of a modification. Either party shall identify changes as soon as they are discovered to ensure ECP's are processed on a routine basis. (CDRLs: A023, A024)

In the event the Government directs a change through use of a Change Order citing the ECP CLIN, the Contractor shall submit a firm fixed price (FFP) proposal within 30 calendar days ARO. All change proposals shall remain valid for a period of no less than 180 calendar days from the date of submission to the Government. (CDRL A020)

The Contractor shall provide configuration change data, as ECPs. ECPs shall be classified as Class I or Class II based on the definitions in MIL-HDBK-61A. Upon completion, testing, and verification of the change, updated drawings and configuration controlled documentation shall be delivered for review and approval. All submitted drawings shall also be accompanied by an AF3925 and associated metadata. New drawings shall be delivered per paragraph 4.2.3.7 and do not require an AF3925. All ECPs shall be submitted to the Government PCO, unless delegated to the Administrative Contracting Officer (ACO). These roles are referred throughout the remainder of this section as simply, CO. (CDRL A015 through A018, A020 through A048)

Any change must be examined initially in enough detail to determine if the change is a Class I or a Class II Change. ECPs can be either solicited or unsolicited. For the solicited ECP, the initiation of an ECP begins at the Government's request for proposal by the CO. A solicited ECP may result from obsolete parts (non F3I), system improvements, FMS specific system requirements, or other sources such as new DoD or AF Policy statements or directives. An unsolicited ECP can be presented to the Government at any time during the POP by the Contractor. Unsolicited ECPs are normally submitted for one of the following reasons: F3I replacements for obsolete components, safety, compatibility, correction of defects, security, product improvements (typically to significantly reduce life-cycle costs), or technology improvements. For any ECP, proposal preparation costs shall not be separately proposed, billed, and/or charged against the contract.

Solicited or Unsolicited ECPs, Class I or Class II, which are driven by parts obsolescence and are required to be completed in order to perform manufacturing of end-items or retrofit kits, and the procurement of spares or support equipment under this SOW shall be included in the price of the respective end-item, retrofit kit, spare, or support equipment.

When some level of investigation and/or incidental testing is required to determine the impact of proposed changes to a system design, the Contractor shall submit a preliminary ECP. The

preliminary ECP shall be followed by a formal ECP that provides the additional data needed by the Government to support formal CCB approval and implementation.

When the Contractor has sufficient insight into the change to propose the complete solution, including effects on end-items, fielded units, manuals, and all documentation, a formal ECP shall be submitted to propose the change. The Contractor shall host an FCA and PCA for each approved ECP using multiple formal meetings as required IAW paragraph 4.1.6.7. A formal Government CCB will be held to approve all configuration changes that affect fielded systems.

4.8.1 Class I ECPs Approval Process

Following classification determination of Class I within the Contractor's CM system and MIL-HDBK-61A, the Contractor shall provide the CO an initial request for review of the ECP. This request must include sufficient information to allow the Government to perform initial merit review for the associated effort, and to concur with the classification as Class I. For a solicited ECP, this step is not required. For a solicited ECP, the CO will submit a request for proposal of the Class I ECP, and will summarize any conditions related to this proposal.

The Contractor shall prepare a complete proposal that describes the change needed, and either a proposed solution or a process to determine the complete change necessary, including material, labor, travel and all associated costs for Class I ECPs. The ECP shall include all elements discussed in CDRL A020, and shall be logically arranged to allow for Government review of the proposal. The ECP shall be presented with a cover letter that specifies the priority of the ECP, the type of the ECP, and any other information that pertains to the urgency of the ECP. An incomplete ECP may be rejected by the Government, or will require updates before the Government can proceed into the Government approval process. (CDRL A020)

Following discussions or re-submittals, the Government will conduct a CCB, and will decide to approve or disapprove the proposal. The approval would only become official once negotiations are complete and a contractual order is issued. If the ECP is disapproved, the Contractor will be notified.

Following the contract action, the Contractor is authorized to begin the effort proposed by the ECP. ECP progress shall be included as part of CDRL A009 until all actions associated with the ECP are completed and approved. (CDRL A009)

Upon completion of all changes and validation of the change via testing, a PCA shall be used to verify the new CM baseline, and the final drawing changes shall be provided. The ECP form shall be updated as necessary. Copies of all updated drawings shall be delivered in native format with accompanying AF3925 outlining all changes from previous revision. Software shall be delivered per section 4.2.3.6 and CDRL A031. Any additional CDRL deliverable requirements will be listed on Government approved ECP submittal. (CDRL A015 through A018, A020 through A048)

Upon Government acceptance of the DD250, the ECP and all associated activities will be considered completed. At this point, tracking of this ECP can stop.

The Government will assign each ECP with a unique Government Control Identification Number. The Government program office will provide a control number as requested by the Contractor.

4.8.2 Class II ECPs Approval Process

Following classification determination of Class II within the Contractor CM system and MIL-HDBK-61A, for all Class II ECPs, the proposed change is presented to the CO for concurrence of classification for concurrence of classification. This concurrence request shall contain at least the following information:

1) Government Control Identification Number
2) Drawing Title
3) Drawing Number
4) Problem Description
5) Problem Resolution
6) Means to identify concurrence to each ECP presented.
7) Location for Signature and Date of Government and Contractor Quality Officers

Following concurrence, the Contractor shall identify the estimated impact/effort associated with accomplishing the change, and submit it to the CO for approval. This estimate shall contain the following information at a minimum:

1) ECP Number (Government Control Number)
2) Document number and title affected
3) Problem description and resolution
4) Hour estimates for the change based on responsibility code
5) Total hours
6) Estimated cost
7) CLIN or accounting control number
8) Date of DCMA or System Program Office (SPO) concurrence
9) CDRLs that will be delivered as part of the ECP effort

All F3I obsolescence replacements shall be submitted as Class II ECPs and shall not be separately priced from the end-item, retrofit kit, SDS, spares, or support equipment prices.

The Government will examine the listed change(s) and the CO will issue a contract action or a CO letter to approve or disapprove each proposed Class II ECP. Class II ECPs are covered under the proposed price of each end-item, retrofit kit, spares, or support equipment item, thus not constituting a contractual change in funding, may be approved by DCMA with notification to the SPO. All other Class II ECPs shall be processed through the PCO.

Following the contract action or CO letter, the Contractor is authorized to begin the effort proposed by the ECP. ECP progress shall be included as part of the Monthly Status Report until all actions associated with the ECP are completed and approved. (CDRL A009)

Upon completion of all changes and validation of the change via testing, a PCA shall be used to verify the new CM baseline, and the final drawing changes shall be provided. The ECP form shall be updated as necessary. Copies of all updated drawings shall be delivered in native format with accompanying AF3925 outlining all changes from previous revision. Software shall be delivered per section 4.2.3.6 and CDRL A031. Any additional CDRL deliverable requirements will be listed on Government approved ECP submittal. (CDRL A015 through A018, A020 **through** A048)

4.8.3 Requests for Variance (RFV)

RFV shall be submitted for authorization to depart from a particular requirement(s) of an item's current approved configuration documentation for a specific number of units or a specified period of time, and to accept an item which is found to depart from specified requirements, but nevertheless is considered suitable for use "as is" or after repair by an approved method. The CO will review, comment, and concur or non-concur as to the determination of the variance. If a Material Review Board (MRB) is used, the Government shall participate as a member of the MRB if it is determined to be a Class I situation. In Class II situations as determined by the CO according to MIL-HDBK-61A, the CO may delegate to DCMA or Range Systems Branch Engineering (AFLCMC/HBZC) to concur with classification and perform reviews. The Contractor shall present all deviation information to the CO, or if delegated, to DCMA. The Contractor shall comply with the provisions for CM IAW the policies and procedures of Standard Inspection. RFVs will be submitted IAW CDRL A022. All costs relating to rejected or approved RFV shall be the responsibility of the Contractor, and shall not be billed to the Government. (CDRL A022)

4.8.4 Specification Change Notices (SCN)

Any revisions to a specification that are required shall be submitted as part of an ECP, and upon approval and completion of the change, the SCN shall contain change recommendations to document the exact changes to the specification document. A complete copy of the updated specification shall be provided upon incorporation of the changes. (CDRL A021)

4.8.5 ECP Labor

The Contractor shall utilize the fully burdened labor rates which will be used for ECPs. See the pricing workbook for the fully burdened labor rates. Only labor-hours will be negotiated.

4.8.6 Test Items Associated with ECPs

If any manufacturing and testing is needed as part of the ECP approval process, the extent of such effort shall only be to meet the specific ECP needs, and not to provide a complete spare or

end-item. The only engineering changes allowed are those that are not research and/or major development, and that only entail any incidental testing and/or evaluation that relates to non-research/non-developmental engineering change efforts.

4.8.7 Contents of an ECP

The Contractor shall include at a minimum, but is not limited to, the specific information below:

1) The effect of the change on the JTE system. This may include but is not limited to: software, hardware, documentation listed in section 3, end-items specifications, logistics data (reliability, maintainability, provisioning, etc.), technical proposal, schedule, retrofitting, and other contract terms and conditions.
2) Each ECP, either solicited or unsolicited, required to complete end-item, retrofit manufacturing, or procurement of spares and support equipment shall include the FFP impact by fiscal year.
3) The effect of the change on any Government Furnished Property (GFP) or GFI to include but not limited to TOs, Drawings, Provisioning Data, CSCI, commercial vendor manuals, and support equipment.
4) The proposed labor hours required for the ECP. ECP efforts and supplemental agreements will utilize the fully burdened labor rates, provided by the Contractor in the pricing workbook.
5) Each ECP that addressed obsolescence issues by replacing the obsolete part(s) shall include all provisioning data for the replacement part(s).

4.8.8 Software Changes

The Contractor will be provided, as GFI, the executables, source code and software CM database if requested, and software design documents that the Government possesses to produce, test, and deliver JTE systems. Firmware will not be provided as GFI, rather, it shall be received as part of each vendor procured component. GFI will also include all TOs, commercial technical manuals, and software users' manuals. The Government will manage and retain all rights to the JTE source code and any other technical documentation provided as GFI. Prior to starting any modification of software for use on the JTE, the work must be approved by the Government as part of an ECP IAW paragraph 4.8 of the SOW. Software created, modified, and procured under this contract at the expense of the Government shall be delivered with Unlimited Rights and shall include but is not limited to the source code including documentation, executable documentation, hardware and software test tools (including any hardware or software interface or data emulators/simulators) and tool documentation, any other applications needed to test the software or verify system hardware performance against the system performance specification, software user's manual updates, and TO change pages necessary to field the software into the JTE fleet. Any vendor provided firmware shall be monitored for variance from the current baseline and

shall be tested and integrated into a new JTE baseline as part of an approved ECP effort. Any software modified under this contract shall be tested and integrated into a new JTE baseline as part of an approved ECP effort. (CDRLs A015, A016, A026 through A031, A041).

4.9 TRAVEL

The Contractor shall be available to travel to support the objectives of this SOW. As part of the monthly report, upon completion of any travel, the Contractor representative shall submit a trip report. Airfare for travel and Per Diem shall be billed IAW the Federal Acquisition Regulations (FAR) and Federal Travel Regulations (FTR). The Contractor shall be responsible for making their own travel and lodging arrangements as necessary to support the task requirement. Accounting for all costs shall be included in the Contract Fund Status Report. All foreign travel by the contractor performed on this contract will require a minimum notification of 60 calendar days prior to the required travel departure date. The contractor shall provide the USG the documentation that describes purpose of trip, locations and dates of trip, arrival and departure dates, flight information and attendees for base passes/country clearances. All contractor travelers must ensure they comply with the DoD Foreign Clearance Guide at https://www.fcg.pentagon.smil.mil. Prior to commencing travel, personnel should review Department of State Travel Warnings, Travel Alerts, and individual country specific information at http://travel.state.gov. (CDRLs A009, A010)

Anticipated Contractor trips, in support of the JTE JEDI program include, but are not limited to:

1) Post-Award Conference
2) Supplier Visits
3) Potential siting locations including, but not limited to the locations identified in Table 3
4) Quarterly Program Management Reviews
5) Systems Requirements Review
6) Testing
7) Field Support Activities
8) Test Readiness Review(s)
9) Technical Interchange Meeting(s)

4.10 PACKAGING, HANDLING, SHIPPING, AND TRANSPORTATION (PHS&T)

The Contractor is responsible for preservation, packaging, and packing IAW MIL-STD-2073-1E (Standard Practice for Military Packaging) and AFMCI 24-201 (Packaging and Materials Handling Policies and Procedures) including, but not limited to all JTE systems, components, and support equipment. The Contractor shall use applicable US Special Packaging Instructions (SPI) or best commercial practices such that all JTE shipments are properly packaged. All JTE

shipments shall be prepared for commercial loading/handling of equipment and for storage facilities in worldwide operating environments. The Freight Forwarder (FF) is responsible for shipping and all shipping costs for FMS requirements. All FMS shipments will be facilitated through the SPO using the designated FF. For new components qualified as part of an approved ECP, SPI information shall be prepared and delivered to the Government. (CDRL A038, A045, A046, A047)

4.10.1 Documentation

The Contractor shall ensure that all required marking, labeling and documentation is affixed to shipping containers and is legible for onward processing of material. Documentation with all shipments shall include the DD 1149, hazardous material certification (if applicable) and FMS case identification labeling. An electronic copy of the DD 1149 is to be provided to the SPO and hard copies located on the inside of container as well as on the outside of shipping container to clearly identify parts being shipped and allow clearance through customs. Assets are to be packaged separately by National Stock Number or part number for induction into the applicable supply system. Boxes can then be packaged into one larger box if required for ease of shipment. The Contractor shall follow MIL-STD-129R (Military Marking for Shipment) for marking and labeling procedures.

4.10.2 Electrostatic Material Packaging

The Contractor shall identify all solid state devices and modules containing diodes, translators, integrated circuits and/or other microelectronic components sensitive to electrostatic forces per MIL-STD-1686C. Contractor shall provide packaging requirements using electrostatic free barrier materials, clearly marked with “Electrostatic Sensitive Device” (ESD).

4.10.3 Hazardous Material

The Contractor shall package, mark and ensure compliance with the Performance Oriented Packaging requirements of hazardous materials as defined in Title 49, CFR and International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air. The Contractor shall provide Material Safety Data Sheets for known hazardous items shown in FED-STD-313E (Federal Standard Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities). The Contractor shall deliver a report which outlines any new materials on the JTE systems, components, and support equipment deemed hazardous, NLT 60 calendar days prior to scheduled delivery of item. (CDRL A009)

4.10.4 Export Licenses

The Contractor shall acquire and maintain all export licenses required to ship end-items and parts to OCONUS USAF ranges.

4.11 TRAINING

The Contractor shall conduct Initial User Training and Advanced User Training as ordered. Training shall be segregated by country; for example USAF students will train on USAF systems, and FMS students will train on their country's respective JTE system. Course schedule will be determined by SPO, a confirmation of the start date will be given to the Contractor 90 calendar days prior to training, or sooner, if mutually agreed upon. Initial User Training and Advanced User Training will not require dedicated aircraft. The Contractor shall make and distribute copies of the most current version of course materials available at training; this will include all paper copies and recordable CDs/DVDs (CDRWs or DVDRWs are not authorized).

4.11.1 Course Materials Updates

Training materials shall consist of the all training presentation supplies applicable to the course being given. GFI training material will be used to conduct Initial User Training and Advanced User Training. Course material will be reviewed by the SPO prior to use to ensure it meets current configuration and complies with Foreign Disclosure Officer regulations when applicable. The Contractor shall update the training material provided within the TDP as required based on system configuration changes. (CDRL A051)

4.11.2 Training Team

Course instructors will consist of JTE Subject Matter Experts (SME) in the operation, maintenance and troubleshooting of the system.

4.11.3 Training Facility and Additional Support

Training shall be accomplished at the Contractor's facility or will be located at a mutually agreed upon location. The training shall be scheduled to use JTE end-items, produced as part of this contract, prior to SAT. If training is scheduled at a time when an end-item is unavailable, then GFP can be requested. The Contractor shall request approval of the training location at least 60 calendar days prior to the start of training. The facility shall include all resources needed to perform the training in accordance with the TDP. The training will have a classroom portion and a hands-on portion. The facility shall include a high bay space or other, SPO approved, covered training location to hold a JTE system (minimum of one C2U and one or two TEUs (Kit 1/WTEU)) as well as a place to perform class room instruction. The covered training location requirement may be waived by the SPO on a case by case basis. For OCONUS training, an OCONUS training facility will be provided by the customer. The SPO will coordinate all OCONUS training.

4.11.4 Initial User Training

Initial User Training shall give familiarization with the JTE systems and train students (maximum of 15 per class) in the areas of mission operation, system set up and tear down, trouble shooting, maintenance, and safety. Estimated completion of training is ten business days.

Training frequency is dependent on customer requirements as well as student and system availability.

4.11.5 Advanced User Training

Advanced User Training shall provide trainees (maximum of 15 per class) with the skills and technical knowledge needed for equipment deployment, operations, inspections, and maintenance of the JTE system. Estimated completion of training is 40 business days. Training frequency is dependent on customer requirements as well as student and system availability.

5 SERVICES SUMMARY

The following table includes performance standards (metrics) the Government will use for monitoring daily contractor performance on critical tasks. These metrics are a meaningful measure of contractor performance. This SOW is based upon the premise that the contractor is responsible for management and quality control actions to meet the terms of the contract. Government Representatives (e.g. Contracting Officer Representative (COR), Defense Contract Management Agency (DCMA)) will audit the contractor's processes and will use submitted data such as the Monthly Status Reports to aid in assessing contractor performance. If the contractor does not have processes in place or meet the standards listed in this SOW and contract, then the contractor shall establish a corrective action plan to correct the deficiency. The absence of any contract requirement from the Services Summary shall not detract from its enforceability nor limit the rights or remedies of the Government under any other provision of the contract. The Government will track all information, including correctable actions, and may use it for reporting purposes.

No.	Performance Objective	SOW Ref.	Inspection Frequency	Performance Threshold
1	The Government requires recording and reporting of all contractor actions performed as part of any approved ECP on at least a monthly basis.	4.1.2, 4.8	Monthly	Monthly Data deliverables received on-time with no more than two errors corrected to error free within 10 business days or as noted on individual CDRL. Corrections shall be at no additional cost to the Government.
2	All Design Reviews and Management Reviews shall be adequately documented and reported.	4.1.6	IAW Design Review and ECP timelines	ECP Data deliverables received on-time with no more than two errors corrected to error free within 10 business days or as noted on individual CDRL. Corrections shall be at no additional cost to the Government.
3	Configuration Control and Quality Control processes must account for and track all changes to any configuration controlled document and/or item.	4.1.7, 4.1.7.1	Monthly	All configuration controlled items are accounted for and identified changes are correctly implemented with less than a 10% error rate within the data. Corrections shall be at no additional cost to the Government.

4	Hardware Changes (includes drawings, TOs, etc.): The contractor shall prepare all drawing and TO change data including figures and submit them to the Government IAW ECP timelines and CDRL A005	4.8	IAW ECP delivery timelines	Physical discrepancies between the hardware and data shall not exceed 10% and be corrected. Corrections shall be at no additional cost to the Government.
5	Software Changes (includes: source code, SVD, etc): Software will be delivered upon changes related to ECPs, or other software fixes with CDRL A007.	4.2.3.3, 4.2.3.4, 4.2.3.5, 4.2.3.6, 4.8.8	IAW ECP delivery timelines	Final software deliveries shall on-time and introduce no bugs/errors. Error corrections shall be at no additional cost to the Government.
6	Site Surveys: The Contractor shall prepare and deliver site survey reports to all proper preparation of Government sites.	4.3	IAW Site Survey report deliveries.	Contractor shall correct all discrepancies to 100% within 15 calendar days or shall provide a corrective action plan within 5 calendar days
7	First Article Testing: The contractor shall analyze all testing events and data in order to provide a series of test reports for all first article testing that adequately outline test results and actions required to ensure system compliance with system specifications	4.4.1, 4.4.1.1, 4.4.2, 4.4.5, 4.4.6, 4.4.10, 4.4.12	Monthly and during all Government witnessed test events.	Failures identified during testing phase shall be correctable at no additional cost to the Government and not result in late delivery of JTE systems.

6 CDRL LIST

CDRL #	Title	Authority
A001	Conference Agenda	DI-ADMN-81249B
A002	Presentation Material	DI-ADMN-81373
A003	Meeting Minutes	DI-ADMN-81250A
A004	Management Plan	DI-MGMT-80004A
A005	Integrated Master Schedule	DI-MGMT-81650
A006	Contractor's Risk Management Plan	DI-MGMT-81808
A007	Contractor's CM Plan	DI-CMAN-80858B
A008	Hazardous Material Management Plan	DI-MGMT-81398A/T
A009	Status Report	DI-MGMT-80368A
A010	Contract Fund Status Report	DI-MGMT-81468
A011	Small Business Subcontracting Plan	DI-MGMT-81642
A012	Mishap Notification	DI-SAFT-81563/T
A013	Safety Plan	DI-SAFT-82080/T
A014	Reliability Prediction and Documentation of Supporting Data	DI-SESS-81497A
A015	Software Version Description	DI-IPSC-81442A
A016	Interface Design Description	DI-IPSC -81436A
A017	Drawings and Lists	DI-SESS-81000D
A018	Data Accession List	DI-MGMT-81453A
A019	Configuration Audit Plan	DI-SESS-81646B
A020	Engineering Change Proposals	DI-CMAN-80639C
A021	Specification Change Notice	DI-CMAN-80643C
A022	Request for Variance (RFV)	DI-SESS-80640D
A023	Failure Analysis and Corrective Action Report	DI-SESS-81315B
A024	Configuration Audit Summary Report (FCA)	DI-CMAN-81022C
A025	Configuration Audit Summary Report (PCA)	DI-CMAN-81022C
A026	Software/Firmware Change Request	DI-MISC-81807
A027	Software User Manual	DI-IPSC-81443A
A028	Software Test Plan	DI-IPSC-81438A
A029	Software Test Procedure	DI-NDTI-80603A
A030	Software Test Report	DI-IPSC-81440A

A031	Software Program End Item Documentation	DI-IPSC-80590B
A032	Site Preparation and Installation Plan	DI-MGMT-80033
A033	Test Plan	DI-NDTI-80566A
A034	Test Procedure	DI-NDTI-80603A
A035	Test Report	DI-NDTI-80809B
A036	Logistic Management Information (LMI) Data Products	DI-ALSS-81529/T
A037	Logistic Management Information (LMI) Summaries (SERD List)	DI-ALSS-81530/T
A038	Preservation and Packing Data	DI-PACK-80120C
A039	Supplemental Data for Provisioning	DI-ALSS-81557
A040	Proposed Spares Parts List	DI-ILSS-80134A/T
A041	Technical Orders (Field and Depot)	DI-TMSS-80067B
A042	Tech Manual Contractor Furnished Aeronautical Equipment or Contractor Furnished Equipment	DI-TMSS-80067B
A043	IUID Marking Plan	DI-MGMT-81803
A044	IUID Marking Activity and Verification Report	DI-MGMT-81804
A045	Special Packaging Instructions	DI-PACK-80121C
A046	Container Design Retrieval System Data Search Request	DI-PACK-80683B
A047	Container Design Retrieval System Data Input	DI-PACK-80684B
A048	Performance Oriented Packaging	DI-PACK-81059
A049	Obsolescence Alert Notice	DI-MGMT-81941/T
A050	Software License Requirements List	DI-PSSS-82046/T
A051	Training Materials	DI-SESS-81521B

UNITED STATES AIR FORCE

HILL AIR FORCE BASE, UTAH 84056

APPENDIX "A"

SAFETY, FIRE PROTECTION AND HEALTH SPECIFICATION

INDUSTRIAL SAFETY REQUIREMENTS

Joint Threat Emitter (JTE)

Enhanced Delivery Initiative (JEDI)

DATE:

PREPARED BY:

AFLCMC/HBZCB
6057 Box Elder Lane, Bldg. 1285
HILL AIR FORCE BASE, UTAH 84056

SECTION I - GENERAL REQUIREMENTS

A. Safety Program Requirements.

The Contractor shall implement a safety program plan that ensures protection of Government personnel and property. The program shall consist of, as a minimum:

1. Mishap reporting, as defined in paragraph B1 below.

2. A Safety Plan that addresses, as a minimum, the subjects listed in Section II –Specific Requirements, and will be used during the performance of the work described in the contract. The Safety Plan will be approved by 75 ABW/SEG (Safety Office) prior to commencement of any work described in this contract.

3. Routine and recurring surveillance to ensure the safety requirements of this contract are enforced.

4. Competent personnel to provide surveillance of the Safety Plan.

5. Identification of segregated work site locations for operations that cannot be co-mingled with general industrial operations and the process for ACO approval of operations and changes at these specific sites.

6. All Contractor personnel shall be trained and qualified to perform their duties safely.

7. The Contractor shall include a clause in all subcontracts requiring the subcontractors to comply with the safety provisions of this contract, as applicable.

B. Mishap Notification

1. The Contractor shall notify 75 ABW/SEG (801-777-3333), or the Hill AFB Command Post (777-3007) after normal duty hours, and the designated Government Representative (GR), i.e., the ACO, PCO, or DCMA QAR (Quality Assurance Representative) within 24 hours of all mishaps or incidents at or exceeding $2,000 (material + labor) in damage to DOD property entrusted by this contract, even if the Government is wholly or partially reimbursed. This notification requirement shall also include physiological mishaps/incidents. A written or email copy of the mishap/incident notification shall be sent within three calendar days to the GR, who will forward it to 75 ABW/SEG. For information not available at the time of initial notification, the Contractor shall provide the remaining information no later than 20 calendar days after the mishap, unless extended by the ACO.

Mishap notifications shall contain, as a minimum, the following information:

(a) Contract, Contract Number, Name and Title of Person(s) Reporting

(b) Date, Time and exact location of accident/incident

(c) Brief Narrative of accident/incident (Events leading to accident/incident)

(d) Cause of accident/incident, if known

(e) Estimated cost of accident/incident (material and labor to repair/replace)

(f) Nomenclature of equipment and personnel involved in accident/incident

(g) Corrective actions (taken or proposed)

(h) Other pertinent information

2. The Contractor shall cooperate with any and all Government mishap investigations. Additionally if requested by Government personnel or designated Government representative (GR), i.e., the ACO, PCO, or DCMA QAR (Quality Assurance Representative), the Contractor shall immediately secure the mishap scene/damaged property and impound pertinent maintenance and training records, until released by safety investigators.

3. The Contractor shall provide copies of Contractor data related to mishaps, such as Contractor analyses, test reports, summaries of investigations, etc. as necessary to support the Government investigation.

4. The Contractor shall support and comply with the safety investigation and reporting requirements of AFI 91-204, Chapters 1 – 5.

C. General Safety Requirements:

If the safety plan is modified, the Contractor shall submit the proposed modification, in writing, to the Contract Administration Office safety representative.

The Contractor is solely responsible for compliance with all federal, state and local laws, the Occupational, Safety and Health Act (Public Law 91-596) and the resulting standards, **OSHA Standards 29 CFR 1910 and 1926**, as applicable, and the protection of their employees. Additionally, the Contractor is responsible for the safety and health of all subcontractor employees.

The Contractor shall ensure assigned personnel are adequately trained and qualified for the task being performed. Brief all personnel on the hazards involved with operations and applicable precautions to be taken. Should unidentified hazards arise, cease operations until actions are taken to eliminate or mitigate hazards to safe levels.

Compliance with OSHA and other applicable laws and regulations for the protection of Contractor employees is exclusively the obligation of the Contractor. **Note:** Air Force Occupational Safety and Health Standards (AFOSH STD) are annotated because many of the Air Force Standards exceed the OSHA standard criteria. If a conflict is noted, the most stringent requirement takes precedence. The Government shall assume no liability or responsibility for the Contractor's compliance or non-compliance with such requirements. The Contractor shall furnish to each of his/her employees a place of employment, which is free from recognized hazards. The Contractor shall brief his/her employees on the safety requirements of this contract and on hazards associated with prescribed tasks. The Contractor is responsible for compliance with OSHA Public Law and the resultant standards identified within. In addition, the Contractor is required to flow down the safety requirements/specification to all subcontractors. This applies to Federal Acquisition Regulation (FAR) 12 commercial acquisitions as well. This contract shall in no way require persons to work in surroundings or under working conditions which are unsafe or dangerous to their health. The Contractor must coordinate and perform work so as not to impact the safety of Government employees or cause damage to Government property. This requires providing personnel with protective equipment and associated safety equipment as may be necessary. The Contractor must also protect personnel from hazards generated by the work. If the Contractor employs BILINGUAL speaking employees, they must post bilingual signs and have written procedures for specific tasks in applicable languages.

SECTION II – SPECIFIC REQUIREMENTS

The Contractor’s prepared Safety Plan shall:

- Demonstrate a management commitment to employee safety and health
- Identify applicable rules and regulations

- Identify the roles and responsibilities of Management, Supervisors, Employees and Safety Coordinator
- Identify work to be performed and location of expected operations
- Provide a description of safety program, safety monitoring responsibilities, organizational structure, and contact information for on-site personnel
- Include a work hazard analysis of the worksite and operations to be performed to include baseline hazard identification and required control measures
- Identify employee safety and health training requirements and the documentation process
- Include emergency response plans and procedures that relate to protection of Government personnel and property
- Include a workplace inspection frequency, to include the identity of the individual responsible for conducting the inspection
- Include hazard reporting procedures and identify individual(s) responsible for the correcting identified hazards
- Identify first aid and injury procedures
- Identify procedures for accident reporting and investigation
- Identify the process for tracking controlled hazards in Contractors work area

The Contractor shall ensure that each element identified below is adequately addressed in detail in the safety and health plan:

SYSTEM MODIFICATION-WHICH ALTERS FORM, FIT OR FUNCTION: Contractor shall comply with Mil Standard 882D, *Standard Practice for System Safety*, 10 Feb 00 and AFI 91-202, *The US Air Force Mishap Prevention Program*, 1 Aug 98, Chap 9 for system modifications, which alter form, fit, or function.

FIRE PROTECTION FOR FACILITIES: Contractor's procedures shall comply with NFPA 10, *Portable Fire Extinguishers*, 2007 Edition; NFPA 13, *Installation of Sprinkler Systems*, 2007 Edition; NFPA 33, *Spray Application Using Flammable or Combustible Materials*, 2007 Edition; NFPA 70, *National Electrical Code*, 2008 Edition; NFPA 72, *National Fire Alarm*

*Code***,** 2007 Edition; NFPA 91, *Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Noncombustible Particulate Solids*, 2004 Edition.

MATERIALS HANDLING AND STORAGE: Contractor shall comply with the standards in 29 CFR 1926.250, 953, 957 and 29 CFR 1910.101, Subparts F, H & N; and 29 CFR 1910.178, *Powered Industrial Truck.* Contractor's Safety Plan shall also address:

-Storage and handling of materials

-Disposal of trash from elevations

-Personnel lifting techniques--proper storage to prevent shifting, for stability, etc.

-Rigging (requirements, inspection, components, and qualifications)

-Equipment (use in handling materials)

-Industrial trucks (training, inspection, maintenance, and safe use)