STATEMENT OF WORK

for
Engineering and Manufacturing Development,
Low Rate Initial Production,
Full Rate Production, and
Sustainment Support
for the

ADVANCED PILOT TRAINING (APT) PROGRAM

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1.0 INTRODUCTION

The Advanced Pilot Training (APT) Program will replace the T-38C used in the United States Air Force's (USAF) Specialized Undergraduate Pilot Training (SUPT) advanced phase fighter and bomber track as well as the Introduction to Fighter Fundamentals (IFF) course, Pilot Instructor Training (PIT), Euro-NATO Joint Jet Pilot Training (ENJJPT) Undergraduate Pilot Training (UPT), ENJJPT PIT, and ENJJPT IFF. The APT Program will provide student pilots with the foundational flying skills and core competencies required to transition into current generation fighters and bombers aircraft.

Throughout this Statement of Work (SOW) the following applies

a) The APT Program is defined as the APT Aircraft System, the APT Ground Based Training System (GBTS), all support equipment (SE), limited sustainment, training support, aircraft initial spares, and technical data.
b) The APT GBTS is defined as all Aircrew Training Devices (ATD), Ground Training Devices (GTD), other training system components, GBTS SE, academics, and Interactive Multimedia Instruction (IMI).
c) When not explicitly stated, requirements include both aircraft and GBTS.

1.1 Scope

The scope of this SOW includes all Engineering and Manufacturing Development (EMD), production, and sustainment activities to include but not limited to:

a) design, integrate, test, verify, and certify the APT System to meet the APT Aircraft System Specification (SS) and the APT GBTS SS,
b) deliver EMD aircraft for Developmental Test and Evaluation (DT&E),
c) deliver EMD ATDs for DT&E, to include Weapons System Trainers (WST), Unit Training Device (UTD), and Operational Flight Trainer (OFT),
d) deliver EMD GTDs for DT&E, to include Aircrew Ground Egress Trainers (AGET), Ejection Seat Trainers (EST), appropriate course materials, and part task trainers,
e) develop, manage, conduct, and deliver Type 1 training for aircrew, maintenance, and simulator instructor personnel,
f) deliver an Aircraft Systems Integration Lab (ASIL),
g) deliver a Software Development Lab (SDL),
h) deliver a Training Systems Support Center (TSSC),
i) deliver initial spares and SE for the APT Aircraft,
j) ensure all requirements flow down to subcontractors and suppliers,
k) provide Pre-Operational Support (POS), field service representatives (FSR), and Interim Contractor Support (ICS) for the APT Aircraft in support of transitioning to a Government organic supply chain management and maintenance concept to include Organizational Level (O-level), Depot Level (D-level) and existing limited Intermediate Level (I-level) maintenance,

l) provide Contractor Logistics Support (CLS) for the GBTS devices,
m) manufacture, assemble, and deliver the APT Aircraft and GBTS devices under the Low Rate Initial Production (LRIP) and Full Rate Production (FRP) phases in accordance with (IAW) the specifications, and
n) develop, implement, maintain, and deliver data as required by Contract Data Requirements List (CDRL) Exhibits A, B, and C.

2.0 DEFINITIONS

Term	Definition
Access – Electronic by Government	Secure, networked, single-point, electronic connectivity to a Contractor data system or systems that enables and allows authorized Government personnel, using their Government computers, unimpaired, unrestricted, unsupervised connectivity to Contractor, Subcontractor or Vendor data or data managed by said entities. Connectivity must extend from a single user, to multiple, simultaneous users; must be enabled 24 hours a day every day of the year with the exception of service disruptions or maintenance outages; and must extend from the date and time a data item is first made electronically available through contract termination. Data must be formatted so that it can be opened using contract-prescribed, application software. Government users of accessed data will respect all contractual and legal requirements for data rights, security, licenses, copyrights, and other distribution restrictions that apply to the data. To accomplish this, items in the database must be marked with the applicable use (e.g., Use[Airworthiness], Use[Test]) as well as the data rights associated with the data item (e.g., Unlimited Rights, Government Purpose Rights, Limited Rights, Restricted Rights, Negotiated License Rights, SBIR Data Rights, Commercial TD License rights).
Access, Type-A	Secure, networked, electronic connectivity that enables Contractor personnel with Government-approved access authority to read from, write to, and upload files to a Government database or system from Contractor-owned computing systems. Authorized personnel will require Public Key Infrastructure (PKI) login credentials (e.g., Computer Access CARD [CAC] or External Certificate Authority [ECA] Certificate) for Type-A Access.

Term	Definition
Access, Type-B	Electronic Access by Government Personnel as defined herein that enables and allows viewing, file uploading, and modification of data residing in the system or systems. Type-B Access does not include storage or archiving within data systems other than the Contractor's, nor does it include printing, photocopying, or transfer of possession. Type-B Access is not associated with a CDRL delivery of the assessed data.
Access, Type-C	Electronic Access by Government Personnel as defined herein that enables and allows viewing, file downloading, and duplication (copying, emailing, printing or scanning). Type-C Access does not include data uploading. Type-C Access is not associated with a CDRL delivery of the assessed data.
Access, Type-D	Electronic Access by Government Personnel as defined herein that enables and allows data use to the extent permitted by the data rights established in the contract. The purpose of Type-D Access is to afford the Government timely insight and use of deliverable data that has content that evolves over the period of performance. Type-D Access is associated with a CDRL delivery of the accessed data.
Access, Type-E	Electronic Access by Government Personnel as defined herein that enables and allows viewing of data residing in the system or systems and extraction of excerpts of the viewed data for reporting and briefing purposes. Type-E Access does not include storage or archiving within data systems other than the Contractor's, nor does it include uploading, downloading, modification, printing, replication (other than the aforementioned excerpting), emailing, scanning or transfer of possession. Type-E Access is not associated with a CDRL delivery of the assessed data.
Access, Type-F	Electronic Access by Government Personnel as defined herein that enables and allows viewing, file downloading, file uploading, and duplication (copying, emailing, printing or scanning) of data residing in the system or systems. Type-F Access does not include data modification. Type-F Access is not associated with a CDRL delivery of the assessed data.

Term	Definition
Access, Type-G	Electronic Access by Government Personnel as defined herein that enables and allows viewing, file download, data duplication (copying, emailing, printing or scanning), and modification of data residing in the system or systems. The purpose of Type-G Access is to afford the Government timely insight and use of data that has content that evolves during the period of performance. Type-G Access is associated with a CDRL delivery of the accessed data.
Access, Type-H	The ability and opportunity to gain knowledge of classified information.
Access, Unauthorized	Any access that violates the stated security policy.
Aircraft	The air vehicle portion of the APT Program.
Aircrew	Total complement of personnel responsible for the safe ground and flight operation of the aircraft and onboard systems or for airborne duties essential to accomplishment of the aircraft's mission.
Anti-Tamper (AT)	Measures, techniques, and features intended to prevent and/or delay exploitation of Resident Critical Program Information (CPI) in United States (U.S.) Weapon Systems.
Authorized Distribution	Transactions conducted by an OCM-Authorized Distributor distributing product within the terms of an OCM contractual agreement. Contractual Agreement terms include, but are not limited to, distribution region, distribution products or lines, and warranty flow down from the OCM. Under this distribution, the distributor would be known as an Authorized Distributor
Common Items	Common items are those with an active NSN being managed in the DoD inventory.
Common Support Equipment (CSE)	Common Support Equipment (CSE) is defined as those SE items currently in the Department of Defense (DoD) inventory with an assigned National Stock Number (NSN) or items under development by a DoD agency that are intended for use by multiple weapon systems or for multiple applications. Having an NSN assigned does not automatically qualify an item as CSE. The item must have an active NSN with an item manager assigned.
Critical Program Information (CPI)	Elements or components of a program that, if compromised, could cause significant degradation in mission effectiveness; shorten the expected effective life of the system; reduce technological advantage; significantly alter program direction; or enable an adversary to defeat, counter, copy, or reverse engineer the technology or capability.

Term	Definition
Developmental Test and Evaluation (DT&E)	Contractor DT&E is to assess system/subsystem/component performance, is at the discretion of the Contractor, and is intended to assure the Contractor it is meeting contractual requirements. Government DT&E is intended to verify the product meets contractual requirements. Contractor-led test events with Government participation in the planning and execution may be used to verify the system requirements have been met. Government DT&E may continue through FRP Decision Review.
Entry	Physical ingress/egress.
Ground Based Training System (GBTS)	All ATD, GTD, other components, SE, academics, and IMI.
Maintenance Training System (MTS)	The MTS consists of all maintenance training equipment, simulators, maintenance training devices, academics, courseware, and support. The MTS will include computer-based part-task trainers and high-fidelity maintenance trainers, as well as technical data. Maintenance training devices will accurately replicate aircraft design and performance to enable positive transference of skill sets.
Operation, Maintenance, Installation & Training (OMIT)	OMIT data defined by the program office encompass all technical data, computer software, computer software documentation, software development tools, computer databases, and graphics pertaining to the APT Program and associated equipment required to successfully conduct all operations; maintenance, which include but may not be limited to organizational-level maintenance, intermediate-level maintenance and depot-level maintenance; installation; and training IAW Defense Federal Acquisition Regulation Supplement (DFARS) 252.227.7013-7015. OMIT Data includes all technical data required to accomplish maintenance, including Air Force sustainment of the technical data itself.
Peculiar Items	Peculiar items are items with no NSN assigned or with an NSN assigned and not being actively managed in the DoD inventory.
Peculiar Support Equipment (PSE)	Peculiar Support Equipment (PSE) is defined as those SE items not currently in the Government inventory. PSE includes previously CSE that must be modified so that the modification makes the item peculiar to the APT System with no other DoD application.
Pre-Operational Support (POS)	Materiel, maintenance, and logistical support of test and evaluation efforts, system risk reduction and demonstration activities, or other temporary periods prior to formal fielding during the acquisition or modification of a system, equipment, or end-item.

Term	Definition
Production Representative	Describes a system that can be used for Initial Operational Test and Evaluation (IOT&E) IAW AFMAN 63-119, Attachment 20, such as a mature engineering development model, or a LRIP system in its final configuration, conforming to production specifications and drawings. A system-level critical design review (CDR), qualification testing, and Functional Configuration Audit (FCA) must have been completed. The item does not have to be manufactured on a formal production line to be production representative.
Shareable Content Object Reference Model (SCORM)	A collection of specifications that defines a browser-based learning content aggregation model, runtime environment, and sequencing and navigation protocols for reusable content objects to meet DoD high-level requirements for distributed learning content.
Support Equipment (SE)	SE consists of all equipment (mobile or fixed) that is not inherently part of the primary weapon system but is required to support the operation and maintenance of the system and all subsystems (including engines) at all levels of maintenance. It includes but is not limited to associated multiuse end items, ground handling and maintenance equipment, tools, metrology and calibration equipment, test equipment, automatic test equipment, test sets, hoists, and aerospace ground equipment (AGE). It also includes any items required to support or maintain the support equipment itself.
Test, Measurement and Diagnostic Equipment (TMDE)	TMDE is defined as any SE used for test, measurement, and diagnostic purposes and is classified as equipment that requires special handling, storage, and scheduled recalibration.
Training System Support Center (TSSC)	A consolidated function that contains the personnel, equipment, tools, and data necessary to provide life cycle hardware, software, IMI, visual and other geographic databases, relational databases, documentation, and network support, maintenance, and improvement for the GBTS. These functions also include training management, logistics management, configuration management (CM), change management, data management, records management, and all associated management reporting responsibilities.

3.0 ENGINEERING AND MANUFACTURING DEVELOPMENT (EMD) / PRODUCTION REQUIREMENTS

3.1 Air Vehicle

The Contractor shall design the APT Aircraft IAW the Aircraft SS. The Contractor shall integrate, test, certify, manufacture, and deliver APT Aircraft.

3.1.1 Aircraft Electrical Load Analysis

The Contractor shall develop and deliver an aircraft Electrical Load Analysis that covers the aircraft and all mission equipment, including personal electronic devices (if applicable) for all

mission phases, IAW Military (MIL)-E-7016F. The analysis shall include all primary, secondary, emergency, and external electrical power sources.
(DI-SESS-80567B, Subsystem Design Analysis Report, Electrical Load Analysis, C224)

3.1.2 Update of EMD Aircraft to Production-Representative Configuration

The Contractor shall deliver a modification package to the Government for the update of EMD aircraft to the production-representative configuration. The Contractor shall update the EMD Aircraft to the production-representative configuration using the Government-approved modification package and IAW section 3.4.1.15. The Contractor's modification package shall include the following: (1) how each aircraft will be updated to meet the production-representative baseline configuration, (2) detailed descriptions of any modifications, (3) any areas of non-compliance to the airworthiness certification basis, (4) resultant risks and mitigation plans, (5) operational impacts, and (6) maintenance impacts.
(DI-MISC-80508B, Technical Report – Study/Services, EMD Aircraft Configuration Modification Report, C136)

3.1.2.1 Deviations from Production-Representative Baseline

Any deviations from the production-representative baseline, to include configuration, operations, and maintenance, shall be approved by the Government through a Request for Variance (RFV) as described in section 3.2.4.5.
(DI-SESS-80640D, Request for Variance (RFV), C226)

3.2 Systems Engineering

The Contractor shall perform systems engineering IAW Institute of Electrical and Electronics Engineers (IEEE) 15288.1-2014.

3.2.1 Technical Management

3.2.1.1 Systems Engineering Management Plan (SEMP)

The Contractor shall develop, implement, and maintain a SEMP for the APT Program IAW IEEE 15288.1-2014. The SEMP shall address the overall approach of the Contractor's technical management of the program. The Contractor's SEMP shall be consistent with the Government's APT Systems Engineering Plan (SEP).
(DI-SESS-81785A, Systems Engineering Management Plan (SEMP), C264)

3.2.1.2 Technical Reviews, Audits, and Technical Interchange Meetings (TIMs)

The Contractor shall conduct and host technical reviews and audits IAW Annex B and IEEE 15288.2-2014 as tailored by the Contractor's SEMP. The Contractor shall conduct and host TIMs for technical issues that arise IAW Annex B.

(DI-ADMN-81249A, Conference Agenda, C002)
(DI-ADMN-81505, Report, Record of Meeting/Minutes, C005)

3.2.1.3 Deficiency Reporting

3.2.1.3.1 EMD Problem and Deficiency Reporting

The Contractor shall develop, implement, and maintain an identification, tracking, and reporting process for problems discovered during EMD. The Contractor's Problem Report (PR) process shall include any and all problems associated with aircraft and GBTS, subsystems, hardware, software, SE, and simulation and emulation software. The Contractor's PR process shall include fleet-wide (all variants) deficiencies, identified prior to contract award and during EMD, that restrict or prevent operation of the GBTS or Aircraft. The Contractor shall provide the Government Type-C Access to this PR database to include planned and actual actions to resolve the PRs. The Contractor shall provide the Government PR status reports, which include its priority and forecasted closure dates. The Contractor shall provide investigation and analysis in support of the Government Deficiency Report (DR) and Watch Item Tracking (WIT) process and shall support DR/WIT reviews, as required, to provide status of DR/WIT identified during testing. WITs will be periodically updated and evaluated for either closure or submittal into the Joint Deficiency Reporting System (JDRS). Prior to sixty (60) days after contract award, the Contractor shall gain Type-A Access to JDRS, IAW Technical Order (TO) 00-35D-54, and provide investigation, material teardown analysis, testing, and reporting of JDRS deficiencies for the period of performance of the contract.
(DI-MGMT-80368A, Status Report, Problem Report Status, C093)

3.2.1.3.2 Production Deficiency Reporting

The Contractor shall provide investigation and analysis in support of the Deficiency Review Board (DRB) IAW Annex B. The Contractor shall identify and generate deficiency reports (DR) for any APT System deficiencies, or deficiencies from any variants of the system, that impact Operational, Safety, Suitability, and Effectiveness of systems, their subsystems, and their support systems to include trainers, test, and SE. Category I DR investigations shall take priority over all other DR investigations. All other DR investigations shall be worked in order of priority provided by the Government. Initial reports for DR investigations in support of safety investigations shall include teardown information and repair cost data. Teardown reports shall include, but are not limited to, visual anomalies, non-destructive inspection results, uncharacteristic component performance, benchmark tests, and possible root cause(s), as appropriate. The Contractor shall coordinate DR investigations with applicable organizations, including the Government, vendors, and subcontractors.
(DI-MGMT-80258A, Material Improvement Project Report, Deficiency Report, C088)

3.2.1.3.3 Deficiency Resolution

The Contractor shall correct all deficiencies discovered during verification of the Aircraft SS and GBTS SS at no additional cost to the Government. The Contractor shall correct all DRB identified design and manufacturing deficiencies. These deficiency resolutions shall be submitted to the Government for disposition via a no-cost Engineering Change Proposal (ECP) and remedied IAW the schedule in the Government-approved DR.
(DI-SESS-80639D, Engineering Change Proposal, C225)

3.2.1.4 Technical Performance Measures (TPMs)

The Contractor shall establish a process to identify, track, and manage TPMs and include the process in the SEMP. The Contractor shall use the TPMs in the Government's SEP as the initial set of TPMs. Any changes to this set of TPMs shall be submitted to the Government for approval. The Contractor shall deliver TPM status reports showing trend lines and any corrective actions needed to meet the required value.
(DI-MISC-80508B, Technical Report – Study/Services, Technical Performance Measure Metrics, C134)

3.2.1.5 Integrity Programs

The Contractor shall develop, implement, and maintain integrity programs for the APT Aircraft, as described in the below subparagraphs using Military Handbook (MIL-HDBK)-515 as a guide. The Contractor shall document all plans, tasks, test data, analysis, and reports associated with these integrity programs and make available to the Government on the Data Accession List (DAL).
(DI-MGMT-81453A, Data Accession List (DAL), C100)

3.2.1.5.1 Aircraft Structural Integrity Program (ASIP)

The Contractor shall develop and implement an ASIP Master Plan IAW Military Standard (MIL-STD)-1530C and MIL-STD-1568. Additional guidance can be found in MIL-HDBK-1587. The Contractor's ASIP Master Plan shall describe the procedures, analyses, and methods necessary to process Loads Environmental Spectra Survey (L/ESS) and Individual Aircraft Tracking (IAT) data obtained from the APT Aircraft. The Contractor shall provide the L/ESS data and IAT data in the L/ESS Data Report and IAT Data Reports, respectively. The Contractor shall perform and provide a report on the following IAW MIL-STD-1530: Durability and Damage Tolerance (DADT) Analysis, DADT Test, Internal Loads and Static Strength Analysis, Flutter Analysis, Flutter Model Test, Flight Flutter Test, Airframe Rigidity Test, and an Analytical Condition Inspection. The Contractor shall develop and implement a Corrosion Prevention and Control Program (CPCP). The Contractor shall deliver a CPC plan that describes the CPCP. The Contractor's CPC plan shall include corrosion prevention and control measures for all aircraft structures and components, as described in MIL-STD-1568D. The Contractor shall provide a

Finish Specification to support the CPC plan. The Contractor shall support the Corrosion Prevention Advisory Board IAW MIL-STD-1530C and Annex A.
(DI-SESS-81956, Aircraft Structural Integrity Program (ASIP) Master Plan, C268)
(DI-SESS-81450B, Loads Environmental Spectra Survey (L/ESS) Data Report, C235)
(DI-SESS-81917, Individual Aircraft Tracking (IAT) Data Report, C267)
(DI-SESS-81983, Durability and Damage Tolerance (DADT) Analysis Report, C270)
(DI-SESS-81485A, Durability and Damage Tolerance (DADT) Test Report, C236)
(DI-SESS-80198B, Internal Loads and Static Strength Analysis Report, C221)
(DI-MISC-81390A, Flutter Analysis Report, C170)
(DI-MISC-81389A, Flutter Model Test Report, C169)
(DI-MISC-81388A, Flight Flutter Test Report, C168)
(DI-MISC-81387A, Airframe Rigidity Test Report, C167)
(DI-MISC-81391, Analytical Condition Inspection Report, Engine Lead-the-Fleet/ACI Report, C171)
(DI-MFFP-81403A, Corrosion Prevention and Control Plan, C073)
(DI-MFFP-81402A, Finish Specification, C072)

3.2.1.5.2 Mechanical Equipment and Subsystems Integrity Program (MECSIP)

The Contractor shall develop, implement, and maintain a MECSIP IAW MIL-STD-1798C. The Contractor's MECSIP shall include development, delivery, and maintenance of a MECSIP Master Plan. The Contractor's plan shall define overall strategy and depict the time-phased scheduling and integration of all required MECSIP tasks for design, development, qualification and force management of the specific system hardware, including Contractor, subcontractor, and off-the-shelf equipment. The Contractor's plan shall include discussion of unique features, exceptions to MIL-STD-1798, including associated risk assessments; a complete discussion of each proposed task; rationale for each task and subtask; and an approach to address and resolve those problems that can be anticipated in the execution of the plan. The Contractor's development of the schedule shall consider all interfaces, the impact of schedule delays, mechanisms for recovery, and other problem areas. The Contractor shall classify all MECSIP components for criticality as safety-critical, mission-critical, durability-critical, durability-non-critical or other/expendable components. The Contractor shall classify all MECSIP safety-critical and mission-critical parts utilizing the procedures in MIL-STD-1798. The Contractor shall provide the supporting analysis and test reports used to identify the criticality classifications for all safety-critical and mission-critical MECSIP components. The Contractor shall consider the Failure Modes, Effects, and Criticality Analysis (FMECA) and the Hazard Analysis for each specific system in the component classification process. The Contractor's list of MECSIP safety- and mission-critical parts shall include, but not be limited to, Work Unit Code, part number, and part nomenclature or description as identified in the TOs.
(DI-MISC-80508B, Technical Report-Study/Services, MECSIP Master Plan, C144)
(DI-SAFT-81932, Critical Safety Items (CSI)/Critical Application (CAI) List, C218)

3.2.1.5.3 Propulsion System Integrity Program (PSIP)

The Contractor shall develop and implement a PSIP plan IAW MIL-STD-3024 with Change 1. For tailoring guidance, refer to MIL-STD-3024 Section 6. The CPCP for the aircraft shall include the plan for the engine. The Contractor shall support PSIP and Propulsion Working Groups IAW Annex A.
(DI-MISC-80508B, Technical Report-Study/Services, PSIP Master Plan, C145)
(DI-MFFP-81403A, Corrosion Prevention and Control Plan, C073)

3.2.1.6 Open System, Modular Design

The Contractor shall develop and maintain an Open System Management Plan, which shall contain, but is not limited to, the following: the design approach and documentation used in the modular open architecture, inter-component dependencies, and the approach to technology insertion, life cycle sustainability, interface design and management, treatment of proprietary or vendor-unique components, and reuse of pre-existing or common items (for both the Aircraft and GBTS). As part of its Open System Management Plan, the Contractor shall, at a minimum, describe how the proposed system architecture meets the Open Systems Architecture requirement as called for in the Aircraft SS, including the steps taken to provide design disclosure and Government Purpose Rights when proprietary standards are used. The Contractor's plan shall also include for all newly developed and modified Line Replaceable Units (LRUs) and/or Shop Replaceable Units (SRUs) (with respect to both hardware and software interfaces) a spreadsheet that identifies the following information:

- Interface type to include whether the interface is key,
- Government concurrence or non-concurrence for interfaces the Contractor identifies as non-key,
- Whether an interface is proprietary/non-proprietary,
- The Interface Control Document (ICD) that defines each interface and location of ICD, and
- The type of data-right associated with each interface.

The Contractor's proposed list of hardware and Operational Flight Programs/Software Items that are defined as key components and interfaces shall be complete and delivered.
(DI-MGMT-80004A, Management Plan, Open Systems Management Plan, C079)

3.2.2 Systems Requirements

3.2.2.1 Requirements Management and Traceability

The Contractor shall perform requirements management to manage, track, and bi-directionally trace all system requirements, both vertically and horizontally, from the approved SSs and the Technical Airworthiness Authority (TAA)-approved APT Tailored Airworthiness Certification Criteria (TACC) to the lowest level specifications. The Contractor shall utilize a requirements management database tool that is compatible with Dynamic Object Oriented Requirements

System (DOORS). The Contractor shall conform its requirements database to the Government DOORS database to be provided upon contract award. The Contractor shall include all system, subsystem, Configuration Item/Computer Software Configuration Items (CI/CSCIs) performance and detail, and interface requirements, and associated verifications in the database. The Contractor shall include all criteria in the TACC in the database. The Contractor shall update the database to ensure widow and orphan requirements are addressed. The Contractor shall provide the Government Type-D Access to the requirements management database. The Contractor shall provide an export of the current version of the database that can be successfully imported to DOORS. The Contractor's requirements database implementation shall allow the Government to generate and print reports. The Contractor shall ensure the requirements management database is capable of providing a real-time output of a Requirements Traceability Matrix (RTM) and a Specification Requirement Verification Matrix (SRVM) that includes the verification status of each requirement.
(DI-MISC-80508B, Technical Report – Study/Services, Requirements Management Database, C124)
(DI-MISC-81283, Specification Requirement Verification Matrix, Aircraft SRVM, C166)
(DI-MISC-81283, Specification Requirement Verification Matrix, GBTS SRVM, C166)

3.2.2.2 System Specifications

The Contractor shall implement and maintain the Aircraft and GBTS SSs. The Contractor shall use the requirements management database to generate deliverable SSs.
(DI-IPSC-81431A, System/Subsystem Specification (SSS), Aircraft SS, C053)
(DI-IPSC-81431A, System/Subsystem Specification (SSS), GBTS SS, C054)

3.2.2.3 Subsystem, Configuration Item/Computer Software Configuration Items (CI/CSCI) Performance, and CI/CSCI Detail Specifications

The Contractor shall develop, implement, deliver, and maintain Aircraft and GBTS subsystem, CI/CSCI performance, and CI/CSCI detail specifications. The Contractor's specifications shall be derived from and maintain traceability to the associated SSs. The Contractor shall use the requirements management database to generate deliverable specifications.
(DI-IPSC-81431A, System/Subsystem Specification (SSS), Aircraft Subsystem Specification, C053)
(DI-SDMP-81493A, Program-Unique Specification Documents, Aircraft CI Performance/Detail Specifications, C220)
(DI-IPSC-81431A, System/Subsystem Specification (SSS), GBTS Subsystem Specification, C054)
(DI-SDMP-81493A, Program-Unique Specification Documents, GBTS CI Performance/Detail Specifications, C219)
(DI-IPSC-81433A, Software Requirements Specification (SRS), C055) (DI-IPSC-81441A, Software Product Specification (SPS), C063)

3.2.2.4 Interface Control Documents (ICDs) and Interface Requirements Specifications (IRSs)

The Contractor shall develop, deliver, and maintain ICDs and IRSs at the CI/CSCI level and higher IAW Electronic Industries Alliance (EIA)-649-1, Section 3.2.5.1. The Contractor shall identify the internal and external interface requirements for the system and its CI/CSCIs.
(DI-SESS-81248B, Interface Control Document (ICD), Aircraft ICDs, C233)
(DI-SESS-81248B, Interface Control Document (ICD), GBTS ICDs, C232)
(DI-IPSC-81434A, Interface Requirements Specification (IRS), Aircraft IRS, C056)
(DI-IPSC-81434A, Interface Requirements Specification (IRS), GBTS IRS, C056)

3.2.2.4.1 Interface Control Working Group (ICWG)

The Contractor shall support the ICWG to review, analyze, and evaluate interface requirements per Annex A and the guidelines set forth in EIA-649-1, Section 3.2.5.2. The Contractor shall ensure that interfacing equipment suppliers and subcontractors provide a representative to support the ICWG.

3.2.2.5 Configuration Items / Computer Software Configuration Items

The Contractor shall develop, deliver, and maintain a list of CI/CSCIs. The Contractor's list shall contain the items provided in Annex H as a baseline. The Contractor shall ensure the list of CI/CSCIs is representative of its proposed APT Aircraft and GBTS designs. The Contractor shall also submit recommended changes to the CI/CSCI list in Annex H for Government approval. The Contractor's list shall be developed using EIA-649-1, Section 3.2.1 (2), a through f, as a guide. The Contractor shall uniquely identify each CI/CSCI and provide a design document identifier that is the same as, or included within, the part number. The Contractor shall develop, document, and process all Requests for Nomenclature for all CIs IAW MIL-STD-196E. The Contractor shall process Computer Program Identification Numbers through the Automated Computer Program Identification Number System IAW TO-00-5-16 for all Operational Flight Program/Software Items (OFP/SIs) if one does not currently exist.
(DI-SESS-82007, Configuration Item (CI) Documentation Recommendation, C271)
(DI-MISC-81454C, Automated Computer Program Identification Number (ACPIN) Data and Control Record, AF IMT 1243, C175)
(DI-SESS-81254C, Request for Nomenclature, C234)

3.2.2.6 Specification Tree

The Contractor shall prepare a specification tree, for the entire system, that includes and labels all of the CIs and CSCIs as defined by SOW paragraph 3.2.2.5. The Contractor shall ensure the specification tree maintains requirements traceability from the Aircraft and GBTS SSs to the lowest level specifications in the tree and from the lowest level back up to the SSs. The Contractor shall include the specification tree in the SEMP.

(DI-SESS-81785A, Systems Engineering Management Plan (SEMP), C264)

3.2.3 System Security

3.2.3.1 Program Security

The Contractor shall comply with the security requirements specified on the Department of Defense (DD) Form 254. The Contractor shall ensure all Contractor personnel who require Type-H Access to classified information have the appropriate clearance prior to handling the classified information. The Contractor shall ensure all Contractor personnel needing Type-A Access to Government network systems have, at a minimum, a favorable National Agency Check with Written Inquiries. The Contractor shall comply with DoD 5220.22-M and maintain a facility approved for the use and storage of classified material, up to and including material classified as SECRET. The Contractor shall comply with DFARS Clause 252.204-7012.

3.2.3.2 Protection of Controlled Unclassified Information (CUI)

The Contractor shall comply with Department of Defense Manual (DoDM) 5200.01, Volume 4, Enclosures 3 and 4, for identification, protection, and training requirements of CUI. The Contractor shall be responsible for training its personnel and conducting out-processing procedures identified in DoDM 5200.01, Volume 4, Enclosure 4. The Contractor shall comply with DoD 5400.7-R_Air Force Manual (AFMAN) 33-302 requirements. The Contractor shall protect unclassified DoD information not approved for public release on non-DoD Information Systems IAW Department of Defense Instruction (DoDI) 8582.01, Enclosure 3, and the APT Program's Security Classification and Declassification Guide.

3.2.3.3 Operations Security (OPSEC)

The Contractor shall apply OPSEC in its management of the APT System IAW Air Force Instruction (AFI) 10-701 to reduce program vulnerability from successful adversary collection and exploitation of the program's critical information. The APT Program Office will provide the Contractor with its OPSEC Plan, which contains the program's Critical Information List (CIL), as an annex to the APT Program Protection Plan (PPP) at contract award. The APT Program Office will include revisions to the CIL with updates to the PPP.

3.2.3.4 Program Protection Surveys

The Contractor shall support Program Protection Surveys of Contractor and subcontractor facilities handling Critical Program Information (CPI) and critical components (CC) to ensure compliance with protection measures IAW Air Force Pamphlet (AFPAM) 63-113. The Contractor shall immediately notify the APT Program Office upon the discovery of any loss, compromise, or suspected compromise of identified CPI or CC.

3.2.3.5 Requirements Flow-Down to Subcontractors and Suppliers

The Contractor shall include language in all subcontracts that ensures subcontractors and suppliers: 1) comply with all applicable system security requirements in the SOW and 2) support, as necessary, the Government-led efforts to update the PPP.

3.2.3.6 System Security Engineering Working Group (SSEWG)

The Contractor shall support SSEWG meetings, to include creating a group charter, providing technical briefings, supporting development of the PPP and other program documents, tracking issues and action items, working assigned action items, and preparing and distributing meeting minutes as specified in Annex A.

3.2.3.7 Program Protection Plan (PPP)

The APT PPP and supporting annexes will be provided at contract award. The Contractor shall provide support from all appropriate areas of expertise to assist the Government in the development and approval of an updated, Contractor design-specific PPP, including, but not limited to, CPI identification, anti-tamper (AT), Criticality Analysis, vulnerability identification, risk assessment, countermeasure development, Supply Chain Risk Management (SCRM), counterfeit prevention, software assurance, and cybersecurity. The Contractor shall, as requested by the Government, provide support to continue to update the PPP and its associated annexes. The Contractor shall plan for and execute program protection IAW the PPP and program guidance. The Contractor shall develop, implement, and maintain a Program Protection Implementation Plan.
(DI-ADMN-81306, Program Protection Implementation Plan (PPIP), C003)

3.2.3.8 Critical Program Information Assessment

The Contractor shall support a Government-led CPI assessment utilizing a CPI identification process, based on the CPI Decision Aid in AFPAM 63-113, to establish the CPI baseline. The Contractor shall assess system and subsystem component changes for CPI and update the baseline, if necessary. For design changes occurring during the Production phase, the Contractor shall support Government-led updates to the latest list of CPI. The Contractor shall document the CPI assessment(s) in the AT Plan and include a brief description of the component(s) found as candidate CPI, why they meet the stated thresholds for consideration as CPI, and a technical description of their function.
(DI-MGMT-80004A, Management Plan, Anti-Tamper Plan, C121)

3.2.3.9 Anti-Tamper

The Contractor shall provide AT requirements recommendations for Resident CPI, including those identified as a result of CPI assessment updates. The Contractor shall flow down AT requirements to the applicable subsystem and lower-level specifications, develop test plans and

test procedures, and accomplish verification testing. The Contractor shall document the AT analysis, protection requirements, and testing in an AT Plan based on the DoD AT Plan Template. (DI-MGMT-80004A, Management Plan, Anti-Tamper Plan, C121)

3.2.3.10 Criticality Analysis

The Contractor shall support a Government-led Criticality Analysis that follows the procedural steps in Chapter 13 of the Defense Acquisition Guidebook. For design changes occurring during the Production phase, the Contractor shall support Government-led updates to the latest Criticality Analysis. The Contractor shall develop, document, and update the Criticality Analysis tables as depicted in Appendix C, Tables C-1 and C-2, of the DoD's *Program Protection Plan Outline and Guidance,* Version 1.0, and include them in the SSEWG meeting minutes. The Contractor shall provide the following information for each Level I and II CC identified by the Criticality Analysis.

- Company description (company name, address, website, Contractor and Government Entity code),
- Company type (e.g., supplier, integrator, prime, Original Equipment Manufacturer [OEM]),
- Whether the supplier facility has a security clearance, and
- Brief description of product and/or service acquired

(DI-ADMN-81505, Report, Record of Meeting/Minutes, C005)

3.2.3.11 Supply Chain Risk Management

The Contractor shall establish and implement a SCRM process and integrate it into the program's risk management process to ensure that the APT System does not incorporate counterfeit parts, malicious code, or any other elements that would allow adversaries to gain unauthorized access to data, alter data, interrupt communications, or otherwise disrupt operations. The Contractor shall support the Government-led supply chain risk assessment to prioritize the CCs, assess for supply chain risk as defined in DoDI 5200.44, and develop and document mitigations or countermeasures to minimize the risks. If additional CCs are identified as a result of updates to the Criticality Analysis or changes to suppliers of previously identified CCs, the Contractor shall support the Government-led supply chain risk assessment to prioritize these CCs, assess for supply chain risk, and develop and document mitigations or countermeasures to minimize the risks. The Contractor shall require its suppliers and subcontractors to participate in the supply chain risk mitigation activities. The Contractor shall require its subcontractors and suppliers to notify them of changes that affect supply chain risk, such as changes in their suppliers, locations, processes, or technology. The Contractor shall notify the Government within thirty (30) days of these changes. The Contractor shall include supply chain risks in the Risk Management Status Report.
(DI-MGMT-81809, Risk Management Status Report, C112)

3.2.3.12 Counterfeit Prevention

The Contractor shall develop, implement, and maintain a Counterfeit Prevention Plan that describes how it will prevent the procurement of counterfeit materials and parts using Society of Automotive Engineers (SAE) AS5553A as a guide. The Counterfeit Prevention Plan shall include a description of the processes for reviewing suppliers and subcontractors and approving ones that meet appropriate counterfeit avoidance criteria. The Contractor shall require its suppliers and subcontractors to participate in counterfeit prevention activities.
(DI-MISC-81832, Counterfeit Prevention Plan, C183)

3.2.3.12.1 Counterfeit Prevention Activities

If the Contractor uses custom application-specific integrated circuits that are custom-designed, custom-manufactured, or tailored for a specific DoD military end use, then the Contractor shall acquire them using a trusted flow from supplier(s) accredited by the Defense Microelectronics Activity. The Contractor shall buy parts directly from OEMs, Original Component Manufacturers (OCMs), and authorized distributors. The Contractor shall provide rationale for any exceptions to this and conduct a supply chain risk assessment to determine the potential risk of obtaining counterfeit parts from such sources. The Contractor shall establish testing and verification requirements for items not received from an OEM, OCM, or authorized distributor. The Contractor shall base the level of testing and verification on each item's identified risk for counterfeit potential. The Contractor's Certificates of Conformance indicating that the parts are not counterfeit will be acceptable for verification of testing. The Contractor shall make the Certificates of Conformance available on the DAL.
(DI-MGMT-81453A, Data Accession List (DAL), C100)

3.2.3.13 Software Assurance

The Contractor shall perform software assurance activities as identified in the DoD, *Program Protection Plan Outline and Guidance* Version 1.0, including providing data to complete Tables 5.3.3-1 through 5.3.3-3 in the PPP. The Contractor shall use DoD's, *Software Assurance Countermeasures in Program Protection Planning*, March 2014, as guidance. The Contractor shall document all third-party software used in the system, including all libraries, frameworks, components, and other products, whether commercial, free, open source, or closed source in the Software Development Plan (SDP). The Contractor shall ensure that third-party software meets the software assurance requirements of the system and that such third-party software components come from trusted sources and suppliers. The Contractor should consult the Defense Information Systems Agency (DISA)-approved products list at https://aplits.disa.mil/processAPList.action and the National Information Assurance Partnership Product Compliant List at https://www.niap-ccevs.org/CCEVS_Products/pcl.cfm for a list of trusted sources/suppliers.
(DI-IPSC-81427A, Software Development Plan (SDP), Aircraft SDP, C052)
(DI-IPSC-81427A, Software Development Plan (SDP), GBTS SDP, C052)

3.2.3.13.1 Secure Configuration of Commercial Software

The Contractor shall securely configure all commercial off-the-shelf (COTS) operating systems, middleware, Board Support Packages, firmware, and application software IAW applicable DISA Security Technical Implementation Guides (STIG) or Security Requirements Guides (where STIGs are not available) to meet identified baseline security control requirements. The Contractor shall use DoD-approved tools, such as Fortify or Coverity, to ensure the configuration is secure and compliant; the software, hardware, and firmware is controlled; and unique risks they pose are identified and, where possible, mitigated. The Contractor shall document the methodology for maintaining the secure configuration of COTS software in the SDP.
(DI-IPSC-81427A, Software Development Plan (SDP), Aircraft SDP, C052)
(DI-IPSC-81427A, Software Development Plan (SDP), GBTS SDP, C052)

3.2.3.13.2 Maintenance of Commercial Software

The Contractor shall track all fixes, patches, updates, and new releases by the suppliers of COTS and open source software components and evaluate them for impact to software assurance. The Contractor shall plan and implement fixes, patches, updates, and new releases IAW DISA STIG timelines. The Contractor shall document the process to evaluate and incorporate fixes, patches, updates, and new releases of COTS and open source software components in the SDP. The Contractor shall document fixes, patches, updates, new releases that cannot be implemented, and rationale in the SDP. The Contractor shall ensure that the standard methodology for installation, operation, maintenance, update, and/or patching of software does not alter the secure configuration settings from the approved configuration without prior coordination and approval by the Government. The Contractor shall ensure the Configuration Management (CM) of COTS is included in the overall program CM process and is documented in the CMP.
(DI-IPSC-81427A, Software Development Plan (SDP), Aircraft SDP, C052)
(DI-IPSC-81427A, Software Development Plan (SDP), GBTS SDP, C052)
(DI-SESS-80858C, Supplier's Configuration Management Plan, C228)

3.2.3.14 Cybersecurity

The Contractor shall support the APT Program Office and other stakeholders, to include Air Force Life Cycle Management Center Directorate of Engineering (AFLCMC/EN-EZ), to identify, manage, and verify cybersecurity requirements as derived from National Institute of Standards and Technology (NIST) SP 800-53, for the APT Program, IAW relevant, current DoD, Federal, and Air Force requirements. The Contractor shall implement a cybersecurity strategy, as developed by the Government, for the system, its subsystems, components, support systems, and equipment IAW DoDI 8510.01, NIST SP 800-37, AFI 33-210, and the USAF *Platform Information Technology (IT) Guidebook*, Version 1.5 (released December 19, 2013).

3.2.3.14.1 Risk Management Framework Activities

The Contractor shall provide support, source data, and analysis required to support the Government in conducting assessment and authorization (A&A) activities for the system IAW DoDI 8500.01 and DoDI 8510.01 in support of Authority to Operate (ATO) from the designated authorizing official. The Contractor shall provide the artifacts necessary to support the development of the Government's APT Aircraft and a GBTS Architecture Analysis Report (AAR) describing system components, boundaries, interconnections with other systems or networks, and data flows. The Contractor shall support development of the system's installation and configuration documentation developed for consistent deployment of the systems to multiple locations. The Contractor shall document security control implementation and configuration requirements. The Contractor shall meet operational security needs of the hosting installation and shall work with the Information System Security Manager or Information System Security Officer at each location to meet configuration and installation requirements. The Contractor shall utilize Committee on National Security Systems Instruction (CNSSI) 1253 and the NIST SP 800-53 derived security controls, as provided by the Government in the Aircraft and GBTS Security Controls Traceability Matrices, for the risk management framework (RMF)-based A&A of the APT Aircraft and GBTS. The Contractor shall ensure and document bi-directional traceability between RMF security controls and allocated requirements. The Contractor shall include cybersecurity RMF activities and events in the Integrated Master Schedule (IMS) and document schedule risks and delays accordingly.
(DI-MGMT-82000, DoD Information Assurance Certification and Accreditation Process (DIACAP) and Risk Management Framework (RMF) Deliverable Data, Aircraft RMF Deliverable Data, C120)
(DI-MGMT-82000, DoD Information Assurance Certification and Accreditation Process (DIACAP) and Risk Management Framework (RMF) Deliverable Data, GBTS Deliverable Data, C120)

3.2.3.14.2 Cybersecurity Risks

The Contractor shall ensure that cybersecurity risks are identified and managed as a performance risk as part of the overall program risk management process. The Contractor shall ensure that cyber risk management activities are consistent with guidance provided in DoDI 8510.01 and other relevant guidance in effect at the time of contract award and support.
(DI-MGMT-81808, Contractor's Risk Management Plan, C111)

3.2.3.14.3 Cybersecurity Training and Certification

The Contractor's cybersecurity workforce shall maintain compliance with the cybersecurity training and certification requirements in Department of Defense Directive (DoDD) 8140.01 and meet the investigative-level requirements established in Enclosure 3 of DoDI 8500.01. The Contractor shall ensure that training materials, technical manuals, and other technical data developed for the program address the appropriate cybersecurity controls (e.g., administrative,

procedural, inherited) or requirements that affect system operational, maintenance, access, installation, and continuous monitoring activities. Contractor employees or individuals under contract or subcontract that are designated to provide administrative services or support to the Government and require Type-A Access and/or entry to Government assets shall maintain compliance with the cybersecurity training and certification requirements in DoDD 8140.01, DoDI 8570.01-M and AFMAN 33-285, and hold a SECRET security clearance.

3.2.3.14.4 Cyber Awareness Training

The Contractor shall provide Cyber Awareness training before authorizing the use of systems that manage Government information and before performing assigned duties. The Contractor shall provide employees with initial and annual refresher training in the employment and operation of specified systems managing and maintaining Government-controlled information.

3.2.4 Configuration and Data Management

The Contractor shall perform CM and Data Management (DM) for the APT Program that assures systematic tracking, controlling, and reporting activities for change control, to include evaluation, review, coordination, approval, documentation, implementation, and verification of changes to approved baselines for configuration control. The Contractor and subcontractor processes shall comply with CM and DM requirements in DoDI 5000.02. The Contractor shall use MIL-HDBK-61A SE and American National Standards Institute Electronics Industry Association (ANSI/EIA)-649B as guides. The Contractor shall ensure that the subcontractors adhere to CM processes to ensure changes and configuration control are tracked and maintained, as documented in the Contractor's Configuration Management Plan (CMP). The Contractor shall ensure that all requirements are flowed down to its subcontractors and vendors. (DI-SESS-80858C, Supplier's Configuration Management Plan, CMP, C228)

3.2.4.1 Configuration Management

The Contractor shall establish and maintain a disciplined CM process to manage hardware and software changes to the APT Program's configuration baselines and associated documentation. The Contractor shall apply these processes to control system products to include, but not limited to, flight manuals, GBTS operating manuals, maintenance manuals, temporary and permanent modifications, ECPs, Contract Change Proposals (CCPs), RFVs, DRs, and Technical Data Packages (TDPs). With regard to CIs for which the Government is not the Current Document Change Authority (CDCA), the Contractor shall be responsible for managing configuration of the items. The Contractor shall ensure compliance with all specifications and ICDs to which the item was originally developed, tested, and procured. The Contractor shall apply configuration control to each CI/CSCI, its components, and its configuration documentation. Product configuration changes and variances shall be documented, coordinated, and recorded in the status accounting system. The Contractor shall generate the configuration documentation required for the configuration baselines being established by the Government.

3.2.4.2 Data Management

The Contractor shall establish and maintain data management procedures for the preparation, quality control, administration, and delivery of data required by the CDRL as specified in the delivery order. The Contractor shall prepare, maintain, and track the contract data status, schedule and ensure timely data deliveries. The Contractor shall provide the Government with data status reports.
(DI-MGMT-80368A, Status Report, Data Status Reports, C089)

3.2.4.3 Classified and Unclassified Data Markings

The Contractor shall provide classification markings IAW DoD 5220.22-M. Classified and unclassified data, including metadata, Bill of Materials (BOM), data file deliveries, and the Summary Report, shall be packaged and shipped separately. Contract requirements for protection of classified data shall apply.

3.2.4.4 Configuration Management Plan (CMP)

The Contractor shall develop, submit and maintain a CMP, using MIL-HDBK-61A table A-3 as a guide. The Contractor shall describe its processes, methods and procedures used to manage the functional and physical characteristics of the assigned CI/CSCI(s) for the life of the program. The Contractor's CMP shall include the Contractors and subcontractors' CM principles, practices, and metrics. The Contractor's CMP shall include a methodology for generating, measuring, and reporting CM performance data. The Contractor's CMP shall address data handling, processing, storage, integrity, transfer, releasability, and disclosure, security, and maintenance documentation requirements. The Contractor shall include a Specification Requirements Verification Plan as an annex to the CMP. The Contractor's Specification Requirements Verification Plan shall describe the processes and procedures used to verify compliance to specification requirements. The Contractor's Specification Requirements Verification Plan shall address the Specification Verification Review (SVR) as described in IEEE 15288.2 section 5.9.
(DI-SESS-80858C, Supplier's Configuration Management Plan, C228)

3.2.4.5 Change Management Process

The Contractor shall manage and track change activities using a systematic, measurable change process. The Contractor shall ensure that baselines are maintained and controlled. The Contractor's configuration change and variance documentation shall address all areas of impact, to include cost, operational, sustainment and implementation actions. The Contractor shall use an ECP to document changes to baseline documentation. The Contractor shall update and maintain the APT Aircraft and the GBTS SSs through the use of ECPs and Specification Change Notices (SCNs). Upon Government approval of the SCN, the Contractor shall submit a complete revision of the appropriate specification to include the change(s). All Changes to the APT

Aircraft and the GBTS SSs shall be submitted to the program office. ECPs and SCNs shall be submitted for lower level specifications and ICDs when the Government is the CDCA. The Contractor shall submit all Class I ECPs to the program office for approval. The Contractor shall support the Government Configuration Control Boards. The Contractor shall submit all Class II ECPs to the Defense Contract Management Agency (DCMA) for classification review and submit a copy to the program office. All submitted ECPs shall include a completed Airworthiness Determination Form (ADF) and an Environment, Safety, and Occupational Health (ESOH) assessment report and/or impact statement. The Contractor shall classify ECPs IAW MIL-HDBK-61A, section 6.2.2, Table 6-2. The Contractor's CCPs shall be issued for non-technical changes to the contract. The Contractor shall submit all CCPs to the program office for approval. The Contractor shall obtain the Government's approval on any product that is not in conformance with the SSs and lower level specifications when the Government is the CDCA. The Contractor shall accomplish this by submitting an RFV prior to the delivery to the Government. The Contractor's submitted RFVs shall include a completed ADF and an ESOH assessment report and/or impact statement.
(DI-SESS-80639D, Engineering Change Proposal (ECP), C225)
(DI-ADMN-81401B, Contract Change Proposals (CCPs), C004)
(DI-SESS-80640D, Request for Variance (RFV), C226)
(DI- SESS-80643D, Specification Change Notice (SCN), C227)

3.2.4.6 Configuration Audits

The Contractor shall host, support, and co-chair (with the Government) Functional Configuration Audits (FCAs) and Physical Configuration Audits (PCAs) encompassing all CIs and CSCIs for the entire APT Program IAW Annex B. The Contractor shall generate agendas, develop and distribute meeting minutes and action items, and work assigned action items. The Contractor shall perform FCAs/PCAs IAW the program Integrated Master Plan (IMP) and IMS and may accomplish them incrementally. The Contractor shall produce and deliver a Configuration Audit Plan for the FCA and PCA. The Contractor shall be responsible for ensuring that subcontractors, vendors, and/or suppliers participate in FCAs and PCAs as appropriate. The Contractor shall deliver an SRVM delineating the status of each requirement. The Contractor shall generate and make available the documentation necessary to support the FCA/PCA IAW EIA-649-1.
(DI-SESS-81646B, Configuration Audit Plan, C251)
(DI-MISC-81283, Specification Requirement Verification Matrix, Aircraft SRVM, C166)
(DI-MISC-81283, Specification Requirement Verification Matrix, GBTS SRVM, C166)

3.2.4.7 Configuration Status Accounting (CSA)

The Contractor shall establish and maintain a configuration status system. The Contractor shall perform CSA to document the current configuration, status of changes in work, change history, and the as-designed, as-built, as-delivered, and as-modified configuration of all CIs within the APT System. The Contractor shall adhere to the capabilities in EIA-649-1, 3.4.1. The

Contractor shall incorporate all approved configuration changes and Engineering Release Records into its CSA system. The Contractor shall give the Government, at a minimum, Type-C Access to this database.

3.2.4.8 Delivery Method for Contract Data Requirements List Deliveries

The Contractor shall electronically deliver all contractual data using the Government-controlled system, Multi-user ECP Automated Review System (MEARS). The Contractor shall ensure that an adequate number of Contractor personnel obtain Type-A Access to MEARS. The Contractor shall complete training required by the Government on the MEARS system.

3.2.4.9 Integrated Digital Environment (IDE)

The Contractor shall establish, maintain, and provide the Government Type-F Access to a secure IDE to enable collaboration and information sharing of all technical and programmatic data used on or produced for the performance of this contract. The Contractor shall develop, implement, and maintain IDE Training Materials. The Contractor shall provide the Government initial training and associated instructional material for the IDE and other Contractor databases and systems for which Type-F Access is required by the Government. The Contractor shall provide updated training and training materials to the Government IDE team on the same schedule as updates are provided to users internal to the company.
(DI-ILSS-80872, Training Materials, Training Materials for IDE, C045)

3.2.4.10 Data Accession List

The Contractor shall develop and maintain a DAL that includes contract-referenced data, existing data, internally generated data, and computer software used by the Contractor to develop, test, and manage the program, and not otherwise delivered IAW a CDRL. The Contractor shall flow this requirement down to the subcontractors and suppliers and shall include their data on the DAL. Upon request, the Contractor shall deliver data items from the DAL.
(DI-MGMT-81453A, Data Accession List (DAL), C100)

3.2.4.11 Item-Unique Identification (IUID)

The Contractor shall develop, implement, and maintain an IUID Plan IAW MIL-STD-130N. The Contractor shall apply IUID markings permanently to the components and maintain serialized item management tracking (e.g., using automatic identification technology, and unique identification) processes IAW MIL-STD-129R, MIL-STD-130N and DFARS 252.211-7003. The Contractor shall enter the IUID data for all marked components into the Wide Area Work Flow and submit the IUID information at the time of acceptance via completion of the electronic DD Form 250, *Material Inspection and Receiving Report.* The Contractor shall prepare and submit an IUID Marking Activity Validation and Verification Report.
(DI-MGMT-81803, Item Unique Identification (IUID) Marking Plan, C109)

(DI-MGMT-81804, Item Unique Identification (IUID) Marking Activity and Verification Report, C110)

3.2.5 Aircraft System Integration Laboratory

The Contractor shall design, develop, integrate, test, maintain, and deliver a comprehensive software and hardware-in-the-loop ASIL. The Contractor shall deliver an ASIL within 90 days of Aircraft SVR completion. The Contractor's ASIL shall emulate and simulate subsystem characteristics (for new and/or modified components as a minimum) and insert all production-representative aircraft avionics, hardware and software, and other ASIL-specific hardware and software needed for integration testing and troubleshooting (to include key components and interfaces as a minimum). The Contractor's ASIL shall display visual imagery sufficient for flight hardware system-level integration testing and for supporting initial flight test rehearsals and anomaly investigation. The Contractor's ASIL software shall include utilities, CM tools, databases, and data files. The Contractor's ASIL hardware shall include computers, peripheral equipment, hardware simulators, stimulators, emulators, diagnostic equipment, and non-computer equipment as applicable. The Contractor's ASIL shall record aircrew and operator inputs, bus signals, switch positions, multiple-view video recording required for system integration, OFP development, and anomaly investigation. The Contractor shall set up and assemble the ASIL and shall successfully accomplish an acceptance test upon delivery to the Government Depot. The Contractor shall provide training, associated training materials, and user manuals required for the operation and maintenance of the ASIL. The Contractor shall develop, implement and maintain a Systems Integration Plan (SIP). The SIP shall address the complete APT Aircraft System functional configuration integration process. The SIP shall describe in detail the Contractor's intended approach to systems integration utilizing all necessary aircraft components within the ASIL.
(DI-ILSS-80872, Training Materials, Aircraft System Integration Lab (ASIL), C049)
(DI-IPSC-81443A, Software User Manual (SUM), Aircraft System Integration Lab (ASIL), C068)
(DI-QCIC-80553A, Acceptance Test Plan, C207)
(DI-NDTI-80603A, Test Procedure, Acceptance Test Procedure, C188)
(DI-QCIC-81891, Acceptance Test Report, C212)
(DI-MGMT-80004A, Management Plan, Systems Integration Plan, C084)

3.2.6 Manufacturing and Quality Assurance

The Contractor shall support Production Working Group meetings IAW Annex A.

3.2.6.1 Manufacturing Management Program

The Contractor shall develop and implement a program-specific Manufacturing Management Program that meets the requirements of SAE AS6500. The Contractor shall document this

program in the Manufacturing Management Plan (MMP). The Contractor shall include its plan for Manufacturing Readiness Assessments (MRAs) as an annex to the MMP.
(DI-MGMT-80004A, Management Plan, Manufacturing Management Plan, C080)

3.2.6.2 Quality Management System (QMS)

The Contractor shall develop and implement a program-specific QMS that meets the requirements of AS9100C. The Contractor shall document this QMS in the Contractor's Quality Assurance Program Plan. The Contractor's QMS shall allow for program office and DCMA entry to the production line for all mandatory inspections, other Government identified inspections, and periodic facility and process reviews. The Contractor shall provide all reasonable facilities and assistance to the Government to conduct surveillance and inspection.
(DI-QCIC-81794, Quality Assurance Program Plan, C211)

3.2.6.3 Manufacturing Readiness Assessments

The Contractor shall conduct assessments of manufacturing readiness using the definitions, criteria, and processes defined in the *Manufacturing Readiness Level* (MRL*) Deskbook* (www.dodmrl.com) IAW Annex B. Assessments shall be conducted at the locations and frequencies specified in the MRA Plan. These assessments will be led by the Government when conducted at the Contractor's facilities. The Contractor shall lead these assessments when conducted at a supplier's facility. The Contractor shall notify and allow Government participation in the assessments at the supplier's facilities. The Contractor shall re-assess MRLs in areas for which design, process, source of supply, or facility location changes have occurred that could impact the MRL. The Contractor shall develop and implement manufacturing maturation plans for areas that do not meet the target MRL. The Contractor shall document the results of all MRAs in an Assessment of Manufacturing Risk and Readiness.
(DI-SESS-81974, Assessment of Manufacturing Risk and Readiness, C269)

3.2.6.4 Production Metrics

The Contractor shall use cost, schedule, and quality metrics to monitor and improve the effectiveness of the Contractor's manufacturing, quality, and supplier management programs. The Contractor's metrics shall include, but are not limited to, hours per ship set, travelled work, build-to-package completions, cycle time, process capabilities, non-conformances, number of each type of Material Review Board dispositions, quality escapes, supplier ratings, foreign object debris findings, scrap rework and repair, and counterfeit components to monitor and improve the effectiveness of the Contractor's manufacturing, quality, and supplier management programs. The Contractor's metrics, and the subsystems and components for which they are collected, shall be included in the MMP and approved by the Government as part of the MMP. The Contractor shall collect and deliver the metrics to include the associated values and tolerance bands.
(DI-MISC-80508B, Technical Report – Study/Services, Manufacturing/Quality Metrics, C130)

3.2.6.5 Indentured Bills of Material (BOMs)

The Contractor shall deliver to the Government complete production representative searchable electronically-formatted BOMs for the aircraft, GBTS, and Peculiar Support Equipment (PSE). The Contractor shall include in the BOMs indentured system breakdowns for all OEM/subcontractor/supplier systems and subsystems, LRUs and SRUs. The Contractor's BOM entries for each part number (National Stock Numbers [NSNs] if applicable) shall include the name and location of the supplier that produces it, the current configuration dash number, who has design control authority for the part number, and the next higher and lower assemblies (as applicable). The Contractor shall deliver indentured BOMs for all ECPs, modifications, or changes that in any way change the original production representative BOM.
(DI-PSSS-81656A, Bill of Materials (BOM) for Diminishing Manufacturing Sources and Material Shortages Management, C203)

3.2.6.6 Government-Industry Data Exchange Program (GIDEP)

The Contractor shall have an account and participate in the GIDEP, as referenced in the GIDEP Operations Manual, *Government-Industry Data Exchange Program,* November 1994 (http://www.gidep.org), and notify the Government whenever a GIDEP alert impacts the APT System.
(DI-QCIC-80125B, Government Industry Data Exchange Program (GIDEP) Alert/Safe-Alert Report, C205)
(DI-QCIC-80126B, Government Industry Data Exchange Program (GIDEP) Alert/Safe-Alert Response, C206)

3.2.6.7 Preservation and Storage of Tooling

The Contractor shall develop and maintain a plan to store tooling associated with the production of the APT Aircraft IAW the Annex to the 3 Aug 2009 memo from USD (AT&L), *Preservation and Storage of Tooling for Major Defense Acquisition Programs,* August 2009. The tools shall be serially managed and meet the requirements of IUID as directed in DoDI 8320.04. This plan shall be documented and approved as part of the MMP.
(DI-MGMT-80004A, Management Plan, Manufacturing Management Plan, C080)

3.2.6.8 Manufacturing Modeling and Simulation

The Contractor shall develop and maintain a high-fidelity production simulation model for the APT Aircraft using commercially available simulation software. The Contractor shall provide a model capable of analyzing the improvements and impacts of various scenarios, including material shortages, process changes, schedule risk assessments, and production rate excursions. The Contractor shall continually update the production simulation model and make formal updates to it every 60 days. The Contractor shall deliver the model to the Government for approval.

(DI-MISC-80508B, Technical Report – Study/Services, APT Production Simulation Model, C131)

3.2.6.9 System Acceptance

3.2.6.9.1 Acceptance Test Plans and Acceptance Test Procedures

The Contractor shall develop, implement, deliver, and maintain the Acceptance Test Plans and Acceptance Test Procedures, defining the acceptance test performance and inspection objectives and criteria as well as detailed procedures for the acceptance of each Aircraft, GBTS component, SE, and any other CIs that will be separately accepted and delivered to the Government. The Contractor's plans and procedures shall accommodate Government surveillance.
(DI-QCIC-80553A, Acceptance Test Plan, C207)
(DI-NDTI-80603A, Test Procedure, Acceptance Test Procedure, C188)

3.2.6.9.2 Acceptance Test Reports

The Contractor shall generate acceptance test reports documenting the results of acceptance tests and inspections for each CI that will be separately accepted and delivered to the Government.
(DI-QCIC-81891, Acceptance Test Report, C212)

3.2.6.9.3 Acceptance Test Support

The Contractor shall provide support to Government-conducted acceptance tests IAW the Government-approved Acceptance Test Plans and Procedures and TO 1-1-300 prior to submittal of the DD Form 250.

3.2.6.9.4 Conformity Plan

The Contractor shall create and maintain an Aircraft Conformity Plan defining how conformity to the aircraft type design and Military Type Certificate (MTC) will be accomplished for delivered aircraft. The Contractor's plan shall identify all inspections and tests necessary to determine that the delivered aircraft conform to the MTC type design, including subcontractor provided items, manufacturing and assembly processes, and how the Contractor will accomplish the conformity inspection(s).
(DI-MGMT-80004A, Management Plan, APT Aircraft Conformity Plan, C081)

3.2.6.9.5 Production Aircraft Conformity

The Contractor shall conform delivered aircraft to the type design and MTC IAW with the Conformity Plan, document conformity, and certify the aircraft is airworthy and in a condition for safe operation.
(DI-MISC-80678, Certification/Data Report, Aircraft Conformity Report, C160)

3.2.6.9.6 Engineering and Manufacturing Development (EMD) Aircraft Conformity

The Contractor shall conform EMD aircraft to the MTC type design IAW the Aircraft Conformity Plan. The Contractor shall document the results of the conformity inspection, identify areas of non-compliance to the MTC type design, and certify that the aircraft is airworthy and in a condition for safe operation.
(DI-MISC-80678, Certification/Data Report, Aircraft Conformity Report, C160)

3.2.6.9.7 Non-Conforming Material

The Contractor shall notify the Government of any product non-conformances within thirty (30) days of identification. The Contractor shall submit all major and critical RFVs to the program office for disposition. The Contractor shall submit all minor RFVs to DCMA for disposition and submit a copy to the program office. All of the Contractor's major and critical RFVs shall include a Corrective Action Plan. The Contractor shall classify RFVs IAW EIA-649B, section 5.3.4.1. The Contractor shall include an ESOH assessment report and/or impact statement in all RFVs.
(DI-SESS-80640D, Request for Variance (RFV), C226)

3.2.6.9.8 Aircraft Mass Properties / Weight and Balance (W&B)

The Contractor shall track and deliver the mass properties of each aircraft delivered under this contract. The Contractor shall enter each aircraft's basic weight and moment in the W&B handbook prior to that aircraft's delivery, using TO 1-1B-50 as a guide. The Contractor shall obtain Type-A Access and use the Air Force Automated Weight and Balance System program IAW TO 1-1B-50 Section 6.1.
(DI-MGMT-81501A, Weight and Balance Report for Aircraft, C102)
(DI-MGMT-81502A, Sample Chart A and Chart E Report for Aircraft, C103)

3.2.6.9.9 Aircraft, Engine, and Equipment Records (Jacket File)

The Contractor shall deliver each aircraft with all aircraft and engine maintenance historical data to include documentation for all installed equipment and assemblies. The Contractor shall deliver historical data for each CI that will be separately accepted and delivered to the Government. The Contractor's data shall include serial numbers, date of manufacture, IUID information, and all operating hours.
(DI-MNTY-81067, Logbooks and Records, Aircraft and Aeronautical Equipment, C185)

3.2.6.9.10 Supplemental Aircraft Accountable Equipment

The Contractor shall provide all supplemental aircraft-accountable equipment required for the aircraft in a non-flying mode. The Contractor shall deliver the equipment with the aircraft.

3.2.6.9.11 Reliability and Maintainability Information System (REMIS) Initial Equipment Load

The Contractor shall deliver REMIS initial equipment load data for each aircraft prior to aircraft acceptance using TO 00-20-2 as a guide.
(DI-MISC-80508B, Technical Report – Study/Services, REMIS Initial Equipment Load Data, C137)

3.2.7 Reliability, Availability, and Maintainability (RAM)

3.2.7.1 Reliability & Maintainability (R&M) Program

The Contractor shall develop, implement and maintain an R&M program, using SAE/GEIA-STD-0009 as a guide, to ensure Aircraft and the GBTS SSs R&M requirements are met. The Contractor's R&M Program shall include R&M and Built-In Test (BIT) analyses as well as test tasks for the system. The Contractor shall present R&M activity updates at Technical Reviews, TIMs, and audits as appropriate.

3.2.7.1.1 Reliability and Maintainability Program Plan (RMPP)

The Contractor shall develop a comprehensive RMPP, using SAE/Government Electronic and Information Technology Association (GEIA)-STD-0009 as a guide, that details how the system R&M activities, functions, processes, test strategies, measurements, data collections, resources, and timelines, required to ensure R&M system requirements, as defined by the Aircraft and GBTS SSs and the SOW, will be achieved. The Contractor's plan shall address the schedule, output, and staffing for all R&M analysis as well as test and demonstration activities. The Contractor shall also describe the R&M activities that support development of maintenance support activities in the RMPP.
(DI-SESS-81613A, Reliability and Maintainability (R&M) Program Plan, C247)

3.2.7.2 Reliability-Centered Maintenance (RCM)

The Contractor shall establish and implement an RCM Program for the aircraft IAW SAE JA1011. The Contractor shall use the RCM Program as a logical decision process for determining optimum aircraft failure management strategies, including maintenance approaches, and establishing the evidence of need for both reactive and proactive maintenance tasks. The Contractor shall develop and deliver an RCM Program Plan (RCMPP) to the Government that details the RCM Program implementation strategy to include but not limited to a detailed development and delivery schedule for all RCM analysis tasks and documentation. The Contactor shall develop and deliver, IAW the Government-approved RCMPP, for all RCM Program data and analyses required to implement the RCM program IAW SAE JA1011.
(DI-MGMT-81911, Work Management Plan, Reliability Centered Maintenance Program Plan, C115)
(DI-ILSS-80111A, Reliability Centered Maintenance Analysis Data, C034)

3.2.7.2.1 Condition-Based Maintenance Plus (CBM+)

The Contractor shall develop and implement a CBM+ program for the aircraft consistent with DoDI 4151.22 and use the *Condition Based Maintenance Plus DoD Guidebook,* May 2008, as a guide. The Contractor shall document the CBM+ implementation strategy in a CBM+ Program Plan. The Contractor shall implement CBM+ enabling technologies, tools, and process improvements in the selection of failure management strategies, when applicable, based on RCM analysis and other R&M analysis results.
(DI-MGMT-81915, Condition Based Maintenance Plus (CBM+) Program Plan, C116)

3.2.7.2.1.1 Condition-Based Maintenance Plus Analysis

The Contractor shall conduct analysis of all recorded aircraft information (as defined in the Aircraft SS), including, but not limited to, trending of historical data, identifying emergent failures, and aggregating data (e.g., operational, environmental, system and subsystem condition) to determine prognostic indicators as identified through the RCM process. The Contractor shall deliver a report to the Government identifying the prognostic indicators and detailing the results of the analysis. The Contractor shall deliver the tool(s) used to conduct the CBM+ analysis. The Contractor's tool shall be commercially available or Contractor developed. If a Contractor developed tool is provided, the Contractor's software tool shall be delivered and accepted as a CI/CSCI. The Contractor's analysis tool shall be compatible with the AF Standard Desktop and meet all AF IT security requirements. The Contractor shall provide a single training class for up to five Government personnel on the tool that analyzes the data to support the CBM+ program. The Contractor shall provide training materials and a user's manual that includes step-by-step instructions for all functionality of the tool.
(DI-MISC-80508B, Technical Report – Study/Services, CBM+ Prognostic Indicators Report, C133)
(DI- ILSS-80872, Training Materials, Training for CBM+ Analysis Tool, C046)
(DI-IPSC-81443A, Software User's Manual (SUM), CBM+ Analysis Tool User's Manual, C067)

3.2.7.3 Logistics Composite Model (LCOM)

The Contractor shall develop, deliver, and maintain an aircraft LCOM Analysis Tool Kit (ATK) model using version 4.2.2 or later. The Contractor's model shall be detailed to the LRU level for the aircraft system. The Government is the final approving authority on the validity of the LCOM model. The Contractor shall document all ground rules as well as assumptions, rationale, and calculations for the metrics to be used and modeled in an LCOM Study Input Plan. The Contractor shall use the Government-validated LCOM ATK model to develop operational and materiel availability predictions. The Contractor shall document and deliver assessed reliability values in the RAM Assessment Report (as defined in 3.2.7.4.1) that details the parameters and assumptions used, including, but not limited to, operational scenarios, manpower, part supply, and SE availability.

(DI-PSSS-XXXXX, Logistics Composite Model Analysis Toolkit (LCOM ATK) Study, Logistics Composite Model, C198)
(DI-PSSS-XXXXX, Logistics Composite Model Analysis Toolkit (LCOM ATK) Study Input Plan, Logistics Composite Model, C197)
(DI-SESS-81497A, Reliability and Maintainability Predictions Report, RAM Assessment Report, C239)

3.2.7.4 Aircraft System Reliability & Maintainability Model (SRM)

The Contractor shall develop and maintain an SRM using reliability block diagram analysis and deliver an SRM Report describing the model and analysis. The Contractor's SRM shall consist of the lowest identifiable functions or elements and their relationships to each other. The Contractor's SRM shall encompass all hardware and non-hardware elements, including, but not limited to, Contractor developed, COTS, non-developmental item (NDI), Government-Furnished Equipment (GFE), software, human interaction, and manufacturing elements. At a minimum, the Contractor shall use the SRM to (1) generate and update the reliability allocations, (2) identify critical elements in the system design and additional design or testing activities required to achieve reliability requirements, and (3) identify repairable and replaceable items and Built-In-Test design expectations. Critical elements are defined as those elements whose failure impacts mission completion, essential functions, or safety, or elements whose failure rates significantly affect overall system reliability.
(DI-SESS-81496A, Reliability and Maintainability (R&M) Block Diagrams and Mathematical Models Report, System R&M Model, C238)

3.2.7.4.1 Aircraft Reliability, Availability, and Maintainability Assessments

The Contractor shall assign assessed R&M metric values for materiel reliability (R_m), mean time between inherent failures ($MTBF_{Type1}$), mean time between maintenance (MTBM), mean flight hours between false alarms (MFHBFA), mean flight hours between sortie aborting false alarms (MFHBSAFA), and mean time to repair (MTTR) to each element of the SRM Model. The Contractor shall base the values on one or more of the following methods: (1) reliability analysis from actual or comparable systems and elements, (2) historical reliability from predecessor systems/elements, or (3) documented subject matter expert (SME) engineering estimation. The Contractor shall provide a table with all elements contributing to critical weaknesses of the SRM Model. The Contractor shall include each SRM Model element's associated R&M metric predictions and confidence rating criteria (high, medium, low), based upon the following guidance:

- High Confidence – Measured (M) based on test data or reliability analysis of actual or comparable systems (following the APT Syllabus Maneuvers and Mission Profile conditions in Appendix A of the Aircraft SS),
- Medium Confidence – Comparative Analysis (C) based on historical reliability of systems of similar complexity, test data, or reliability analysis of comparable systems (not

following the APT Syllabus Maneuvers and Mission Profile conditions in Appendix A of the Aircraft SS), and

- Low Confidence – Projected (P) or Allocated (A) based on reliability projections, SME engineering estimates, or other methodologies not identified as high or medium confidence.

An acceptable comparable/similar system is defined as a system whose model, make, and construction is so alike that for reliability purposes the systems could be reasonably expected to have a nearly identical reliability assessment as the system in the final design. The Contractor shall develop a plan to mitigate all elements rated as low or medium confidence. The Contractor shall provide the Government all mitigation plans upon development. The Contractor shall execute the mitigation plans and complete them with sufficient time to meet all RAM requirements, as defined in the SS. The Contractor shall use the Government validated LCOM ATK model to assess the system materiel and operational availability using the R&M assessment values and actual or projected supportability factors (e.g., part supply, part demand, manpower, SE availability) as model inputs and design parameters. The Contractor shall provide the resultant operational and materiel availability assessments and all parameters and assumptions used in the model as part of the RAM assessment report.
(DI-SESS-81497A, Reliability and Maintainability Predictions Report, RAM Assessment Report, C239)

3.2.7.5 Identification of Aircraft Failure Modes and Mechanisms

The Contractor (to include subcontractors and suppliers, as applicable) shall identify, confirm, and mitigate the aircraft failure modes (through modeling, analysis, and test) that will result when life cycle loads are imposed. The Contractor shall start to identify the failure modes upon contract award and continue to identify and analyze failure modes throughout the contract period of performance. The Contractor shall identify and confirm through analysis and test any failure modes that may be induced by user or maintainer error. The Contractor shall identify and confirm through analysis and test any failure modes that may be induced by manufacturing variation or errors. The Contractor's test approach to identify and confirm failure modes shall include, but not be limited to, the use of accelerated life testing and environmental stress screening using MIL-HDBK-781 as a guide.

3.2.7.5.1 Aircraft Failure Modes and Effects Testing (FMET)

The Contractor shall conduct FMET. The Contractor shall include all single point failure components in FMET to ensure the failure does not result in the loss of a safety critical function(s). The Contractor shall include FMET as a part of the overall R&M test strategy for the aircraft. The Contractor shall develop and deliver a test plan for FMET that identifies all FMET activities and procedures. The Contractor's FMET Plan shall include, but not be limited to, the following:

- Identification of processes that will be used to perform FMET

- The scope, level of resolution, and ground rules of FMET
- Selection criteria of components and the failure modes to be tested

The Contractor shall develop and deliver test reports for all FMET activities.
(DI-SESS-81585B, Reliability and Maintainability (R&M) Test Plan, C246)
(DI-SESS-81628A, Reliability Test Report, R&M Test Report, C248)

3.2.7.5.2 Aircraft Failure Modes, Effects and Criticality Analysis

The Contractor shall perform FMECA on the aircraft system and deliver a report. The Contractor's FMECA shall clearly identify those failure modes that are detectable by BIT. The Contractor's FMECA shall document all failure modes, effects up to higher indenture levels (including the subsystem and weapon system level), and severity levels. The Contractor shall identify, evaluate, and minimize, during the design process, all single point failure modes that directly result in mission failure or create unsafe conditions. The Contractor shall conduct failure mode risk mitigation to include one or more of the following strategies: (a) elimination of the failure mode, (b) reduction of the failure mode's probability of occurrence or frequency, (c) incorporation of redundancy, and (d) mitigation of the failure mode's effects. The Contractor shall develop, implement, maintain, and deliver a relational database that contains the FMECA and associated source data for ease of update and to facilitate logistics support analyses. The Contractor shall provide cross reference FMECA entries to related Failure Reporting, Analysis, and Corrective Action System (FRACAS) entries by Failure Number and to related Hazard Tracking System (HTS) entries by Hazard ID in the FMECA Report and in the FMECA Database. The Contractor's FMECA database shall be compliant with Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d). The Contractor shall provide the Government Type-D Access to the relational database which shall include all the data in the Failure Modes, Effects, and Criticality Analysis Report Data Item Description (to include tailored content in the CDRL). The Contractor shall continually update the database, and make formal updates to it no later than 45 calendar days prior to Preliminary Design Review (PDR), Critical Design Review (CDR), Test Readiness Review (TRR), and Operational Test Readiness Review (OTRR). The Contractor shall update the database when system modifications are implemented and failure modes and effects are discovered. The Contractor shall incorporate into the FMECA any new failure modes and effects discovered within sixty (60) days of an occurrence. The Contractor shall develop, implement, and maintain a training program for users of the FMECA database. The Contractor shall deliver training and training materials to the Government on the use of the FMECA database.
(DI-SESS-81495A, Failure Modes, Effects, and Criticality Analysis Report, C237)
(DI-ILSS-80872, Training Materials, Training for FMECA Database, C045)
(DI-IPSC-81441A, Software Product Specification (SPS), Database Delivery, C071)
(DI-IPSC-81437A, Database Design Description (DBDD), C281)

3.2.7.6 Failure Reporting, Analysis, and Corrective Action System

The Contractor shall define and implement a closed-loop failure reporting, analysis, and corrective action system for the aircraft and GBTS to monitor and communicate the following: test and field failures, failure trends, analyses of failure modes and root cause failure mechanisms, the status of design and process corrective actions, risk mitigation decisions, the effectiveness of corrective actions, and lessons learned. The Contractor's FRACAS shall capture failures of the APT System as well as failures from any variant of the system that are relevant from all activities performed during the contract, to include but not be limited to, test activities (e.g., laboratory, ground, flight), demonstration events, and transports (e.g., ferry flight deliveries). The Contractor shall identify failure trends for all failure modes found on assemblies and subassemblies, to include, but not limited to, Contractor developed, COTS, NDI, GFE, and software. The Contractor shall perform root cause investigations and implement appropriate corrective actions in order to meet established reliability and Built-In Test requirements. The Contractor shall include all failure modes, from initial modeling and analysis through the fielding and operation of the system in the FRACAS. The Contractor shall develop, implement, maintain, and deliver a FRACAS relational database that is compliant with Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d). The Contractor shall provide the Government Type-D Access to the electronic FRACAS database, which shall include, but not be limited to, all the data in the Failure Summary and Analysis Report Data Item Description (to include tailored content in the CDRL) and all R&M data and metrics needed to assess the R&M metrics defined in the SS. The Contractor shall provide cross reference FRACAS entries to related FMECA entries by Identification Number and to the HTS entries by Hazard ID in the FRACAS report and in the FRACAS database. The Contractor shall continually update the database with the initial submittal occurring no later than 45 days after the first failure is observed, with formal updates occurring quarterly thereafter. The Contractor shall develop, implement, and maintain a training program for users of the FRACAS database. The Contractor shall deliver training and training materials to the Government on the use of the FRACAS database. The Contractor shall deliver a final copy of all information in the FRACAS database upon contract completion with all failures encountered during the contract period of performance.
(DI-SESS-80255A, Failure Summary and Analysis Report, FRACAS Report, C222)
(DI-ILSS-80872, Training Materials, Training for FRACAS Database, C045)
(DI-IPSC-81441A, Software Product Specification (SPS), Database Delivery, C071)
(DI-IPSC-81437A, Database Design Description (DBDD), C281)

3.2.7.6.1 Failure Review Board (FRB)

The Contractor shall establish an FRB to review failure data and trends, assess root cause investigation and determination status, corrective action status, and to assure adequate corrective actions are taken. The Government reserves the right to appoint a representative to the FRB as an observer. If the Contractor can identify and use an already existing function to perform the

FRB functions, then a description of how the existing function will be employed to meet requirements shall be provided in the RMPP.
(DI-SESS-81613A, Reliability and Maintainability (R&M) Program Plan, C247)

3.2.7.7 Reliability Growth

The Contractor shall develop and implement an R&M Growth Program (RMGP) using MIL-HDBK-189C as a guide. The Contractor's RMGP Plan shall be described in the RMPP and include R&M growth planning and tracking curves for the aircraft and GBTS. The Contractor shall develop and deliver an R&M Test Plan that details all aircraft and GBTS R&M related test and demonstration activities. The Contractor shall develop and deliver R&M Test Reports for each R&M test and demonstration activity, as identified in the R&M Test Plan, to include periodic test summary report and final report deliveries. The Contractor shall develop and deliver a report to track progress towards achieving RAM metrics.
(DI-SESS-81613A, Reliability and Maintainability (R&M) Program Plan, C247)
(DI-SESS-81585B, Reliability and Maintainability (R&M) Test Plan, C246)
(DI-SESS-81628A, Reliability Test Report, R&M Test Report, C248)
(DI-MISC-80508B, Technical Report – Study/Services, RAM Metric Tracking and Progress Report, C132)

3.2.7.8 Reliability and Maintainability Working Group (R&MWG)

The Contractor shall support R&MWG meetings IAW Annex A.

3.2.8 Human Systems Integration (HSI)

3.2.8.1 Human Systems Integration Program Plan

The Contractor shall develop, implement, and maintain an HSI program and document it in an HSI Program Plan (HSIPP). The Contractor's HSIPP shall document the approach to developing and managing HSI requirements, elements, and functionalities to ensure the attainment of all HSI goals and objectives. The Contractor's HSIPP shall describe the implementation strategy to integrate and facilitate tradeoffs across the nine HSI domains (Manpower, Personnel, Training, Human Factors Engineering (Human Engineering), Environment, Safety, Occupational Health, Survivability, and Habitability) to optimize total system performance while minimizing total ownership costs throughout the program.
(DI- HFAC-81743A, Human Systems Integration Program Plan, C031)

3.2.8.2 Human Systems Integration Report (HSIR)

The Contractor shall develop and deliver an HSIR documenting the progress of the Contractor's HSI program. The HSIR shall describe HSI issues, risks, opportunities, requirements compliance, and positive impacts on the system and total ownership costs. The HSIR shall be used to report the following: HSI activities, results and system impacts, status of HSI

requirement compliance verification, summary of HSI issues and risks, HSI progress and status, HSI program quality control, and HSI planned activities.
(DI-HFAC-81833, Human Systems Integration Report, C032)

3.2.8.3 Human System Integration Working Group

The Contractor shall support the Human Systems Integration Working Group as specified in Annex A.

3.2.8.4 Human Engineering Program

The Contractor shall develop, implement, and maintain a human engineering program, using MIL-STD-46855A as a guide, to provide safe and effective human interfaces to support system performance requirements and shall document it in the Human Engineering Program Plan.
(DI-HFAC-81742A, Human Engineering Program Plan, C030)

3.2.8.5 Human Engineering Test and Evaluation

The Contractor shall establish and conduct human engineering test and evaluation to demonstrate that human-system interfaces enable users to accomplish functions IAW the SSs. The Contractor shall develop human engineering test plans that serve to validate human performance requirements. The Contractor shall prepare human engineering test reports that provide fully documented results of the human engineering studies, analysis, tests, and evaluations performed.
(DI-HFAC-80743B, Human Engineering Test Plan, C025)
(DI-HFAC-80744B, Human Engineering Test Report, C026)

3.2.8.6 Human Engineering Design Approach Document – Operator (HEDAD-O)

The Contractor shall develop, implement, and maintain a HEDAD-O, describing the equipment that interfaces with operators. This document provides a source of data to evaluate the extent to which equipment having an interface with operators meets human performance requirements and human engineering criteria of MIL-STD-1472G and provides the human engineering rationale for the design.
(DI-HFAC-80746C, Human Engineering Design Approach Document – Operator, C027)

3.2.8.7 Human Engineering Design Approach Document – Maintainer (HEDAD-M)

The Contractor shall develop, implement, and maintain a HEDAD-M, describing the characteristics, layout, and installation of all equipment having a maintainer interface. This document provides a source of data to evaluate the extent to which equipment having an interface with maintainers meets human performance requirements and human engineering criteria of MIL-STD-1472G and provides the human engineering rationale for the design.
(DI-HFAC-80747B, Human Engineering Design Approach Document – Maintainer, C028)

3.2.8.8 Critical Task Analysis

The Contractor shall conduct a critical task analysis and provide a Critical Task Analysis Report (CTAR) describing the results of analyses of critical tasks performed by the operator and maintainer, which provides a basis for identifying high risk tasks affecting human-system performance, mission accomplishment, system suitability, and safety.
(DI-HFAC-81399B, Critical Task Analysis Report, C029)

3.2.8.9 Primary Flight Reference (PFR) Endorsement

The Contractor shall perform tasks, compile the data, and develop the PFR endorsement package information as described in *Air Force Flight Standards Agency* (AFFSA), *White Paper Primary Flight Reference Endorsement Process (AFFSA White Paper),* AFI 11-202V3, and *MIL-STD-*1787C. The Contractor shall conduct a demonstration of the PFR for the Government's Flight Symbology Development Group. The Contractor shall coordinate and get approval of all data collection and analysis activities with the program office before execution of this activity.
(DI-MISC-80508B, Technical Report – Study/Services, Primary Flight Reference Endorsement – Display Information Package, C149)

3.2.8.10 Cockpit Working Groups

The Contractor shall support the Cockpit Working Group IAW AFI 63-112 and as specified in Annex A.

3.2.8.11 Cockpit Mock-Up

The Contractor shall maintain, and make available at the Contractor's facility, a powered mock-up of the aircraft cockpits beginning ninety (90) days after contract award until delivery of the first production aircraft. The Contractor's mock-up shall be physically and functionally representative of the production aircraft, include both aircrew positions and have a representation of the nose of the aircraft. Flight simulation capabilities are not required; nor are the representation of the effects of the flight control surfaces. The Contractor's mock-up shall have electronic displays that are capable of, at a minimum, displaying test patterns. The Contractor's mock-up shall be capable of supporting anthropometric evaluations (with personal flight equipment), crew station evaluations, escape path clearance evaluations, human factors evaluations, and cockpit configuration modification validations. The Contractor shall maintain currency of the mock-up with the latest configuration and ensure the mock-up is available for use at all meetings at the Contractor's facility in which crew systems issues are on the agenda.

3.2.8.12 Anthropometric Evaluations

The Contractor shall support Government anthropometric evaluations, using the cockpit mock-up and EMD, LRIP, and Production aircraft IAW Annex B. The Contractor shall support an anthropometric evaluation on the mock-up between ninety (90) and one hundred twenty (120) days after contract award. The Contractor shall modify the mock-up to the configuration

approved at CDR and support an anthropometric evaluation (to be conducted within sixty (60) days after CDR) on the mock-up as a part of the CDR completion. Additionally, if cockpit configuration changes occur, following the CDR anthropometric evaluation, the Contractor shall support additional Government anthropometric evaluations, as required by the Government, using either the mock-up or a representative aircraft. The Contractor shall support a final anthropometric evaluation on a production representative aircraft. The Contractor shall deliver a cockpit configuration package which includes a digital copy of the 3-Dimensional Computer Aided Design (CAD) drawings of both cockpits (updated to the latest configuration) for all Government anthropometric evaluations.
(DI-SESS-81000E, Product Drawings/Models and Associated Lists, Cockpit Configuration CAD Package, B004)

3.2.8.13 On-Board Oxygen Generation System (OBOGS) - Oxygen System (if equipped)

The Contractor shall supply the Government with one complete production-representative OBOGS for use in OBOGS safe-to-fly testing. The Contractor's OBOGS shall be provided to the Government eight (8) months prior to Aircraft TRR.

3.2.8.13.1 On-Board Oxygen Generation System (if equipped) Safe-to-fly Testing

The Contractor shall support OBOGS safe-to-fly testing performed by a Government agency at a Government facility. Prior to testing, the Contractor shall support coordination of the Government test agency-developed test plan. The Contractor shall support the safe-to-fly evaluation IAW Annex B, using the equipment described above. Testing will be performed as soon as practicable in support of the Experimental Flight Release Basis (EFRB) Compliance process.

3.2.9 Environment, Safety, and Occupational Health (ESOH)

3.2.9.1 Environment, Safety, and Occupational Health Program

The Contractor shall develop, implement, and maintain an ESOH program, per MIL-STD-882E, that is integral to the systems engineering and program management processes. The Contractor shall ensure that appropriate consideration is given to reducing or eliminating the hazardous materials (HAZMAT) associated with the system and the resultant pollution created. The Contractor shall ensure environmental and occupational hazards are appropriately identified, assessed, and factored into the program's overall safety risk management process to compliment the System Safety Program tasks.

3.2.9.1.1 System Safety Program Plan (SSPP)

The Contractor shall develop, maintain, and deliver a SSPP per MIL-STD-882E Task l02, documenting the methodology for the identification, classification, and mitigation of all ESOH hazards. The Contractor's SSPP shall demonstrate compliant industrial, ground, and flight safety

programs throughout the system life cycle, including disposal. The Contractor's SSPP shall also address approaches for compliance to AFI 91-202 (including AFMC and Air Education and Training Command (AETC) supplements), AFI 91-203, and AFI 91-204 requirements and recommended processes contained in the Joint Software Systems Safety Engineering Handbook and MIL-STD-882E (including the suggested risk matrices). The Contractor's SSPP shall describe all management and engineering tasks, methods, organizational make-up, and functional interrelationships required to implement a systematic, comprehensive approach to hazard identification, hazard analysis and tracking, risk assessment, risk elimination/mitigation, and hazard communication/reporting. The Contractor shall deliver a complete SSPP document and a Systems Safety Hazard Analysis Report (SSHAR).
(DI-SAFT-81626, System Safety Program Plan, C217)
(DI-SAFT-80101C, System Safety Hazard Analysis Report, C213)

3.2.9.1.2 Hazardous Materials Management Program (HMMP)

The Contractor shall develop, implement, and maintain an HMMP Plan, per MIL-STD-882E Task 108, as an appendix to the SSPP. The Contractor's HMMP Plan shall define roles, responsibilities, and procedures needed to successfully accomplish the overall HAZMAT management, risk mitigation, and hazard tracking processes. The Contractor's plan shall include strategies and methods for National Aerospace Standard (NAS) 411 compliance and shall incorporate NAS 411-1. The Contractor's plan shall include details of tracked hazardous materials, including those identified in the current DoD-and-AIA-agreed "Prohibited" and "Restricted" listings. Additionally, all Class II Ozone Depleting Substances are "Prohibited." The Contractor's HMMP Plan shall comply with the AFI 32-7086 and AFI 32-7086 AETC Supplement. The Contractor shall generate and deliver the HMMP Report in compliance with the approved SSPP and HMMP Plan.
(DI-MGMT-81398C, Hazardous Materials Management Program (HMMP) Plan, C099)
(DI-MISC-81397C, Hazardous Materials Management Program (HMMP) Report, C172)

3.2.9.1.3 Hazardous Materials Handling

The Contractor shall ensure approved authorizations are in place prior to ordering HAZMATs and coordinate with AF Hazardous Materials Pharmacy (HAZMART) prior to the purchase of any HAZMAT. The Contractor shall verify only customers with an approved AF Form 3952 in AF-Enterprise Environment, Safety, & Occupational Health (EESOH) are provided the requested HAZMAT EESOH-Management Information System (EESOH-MIS) authorizations. The Contractor shall ensure proper labeling, to include barcodes, for all stocked and issued HAZMAT and ensure closeout in EESOH-MIS prior to issue of additional HAZMAT(s). The Contractor shall maintain HAZMATs at the minimum levels to meet mission needs, practicing just-in-time supply concepts to the greatest extent possible. The Contractor shall ensure all unneeded HAZMATs are made available to organizations via the HAZMART Free Issue program and that unopened or unused HAZMAT are made available to Defense Logistics Agency (DLA)

Disposition Services redistribution channels prior to disposing of waste. The Contractor shall document how these efforts will be met in the HMMP Plan and document it in the HMMP Report. The Contractor shall ensure that HAZMATs requiring performance-oriented packaging are packaged and marked (United Nations container markings and hazardous commodities markings) IAW the following regulations: AFMAN 24-204(I); *International Civil Aviation Organization, International Maritime Dangerous Goods Code (IMDG) Code, 2014 Edition, Volume 2*; *Title 29, Part 1910, Subpart Z Code of electronic Federal Regulations (eCFR)*; *Department of Transportation Final Rule, Hazardous Material Carriage by Aircraft, Federal Register Part-175, of 49 CFR dated*, 1 October 2010, and marked IAW MIL-STD-129R.
(DI-MGMT-81398C, Hazardous Materials Management Program (HMMP) Plan, C099)
(DI-MISC-81397C, Hazardous Materials Management Program (HMMP) Report, C172)

3.2.9.1.4 Health Hazard Analysis (HHA)

The Contractor shall develop, maintain, and deliver an HHA per MIL-STD-882E Task 207 and the approved SSPP. The Contractor's HHA shall analyze all health hazards described by Task 207, including the escape system and lighting.
(DI-SAFT-80106C, Health Hazard Assessment Report (HHAR), C214)

3.2.9.1.5 Environmental Hazard Analysis (EHA)

The Contractor shall develop an EHA per MIL-STD-882E Task 210 to support National Environmental Policy Act and Executive Order 12114 requirements. The Contractor shall develop and deliver a SSHAR, documenting the EHA effort. The Contractor shall support National Environment Policy Act reviews, operation, test, and maintenance locations and address local laws and regulations.
(DI-SAFT-80101C, System Safety Hazard Analysis Report, C213)

3.2.9.1.6 Community and Personnel Noise Measurement and Reporting

The Contractor shall measure and report the flyover noise and near-field and far-field ground run-up noise IAW ANSI S12.75. The Contractor shall accomplish all requirements of ANSI S12.75, sections 1, 2, 3, 4, 5, 7, and 8. Required microphone noise measurement locations and orientation are detailed below.
(DI-HFAC-81975, Noise Measurement Report, C033)

3.2.9.1.6.1 Flyover Noise

The Contractor shall measure and document, in a Noise Measurement Report, flyover noise IAW ANSI S12.75. Specifically, sections 6.1, 6.2 and 6.5 detail the Conventional Take-off and Landing (CTOL) flyover noise methods of ANSI S12.75. The very far-field microphones of section 6.5.1.6 of ANSI S12.75 are not required.
(DI-HFAC-81975, Noise Measurement Report, C033)

3.2.9.1.6.2 Near-field and Personnel Noise

The Contractor shall measure and report near-field and personnel ground run-up noise IAW ANSI S12.75, Section 6.3.2, which details the near-field and personnel noise methods. The Contractor also shall measure and report near-field and personnel ground run-up noise for a 250-foot arc, IAW procedures in ANSI S12.75 for a 125 foot arc.
(DI-HFAC-81975, Noise Measurement Report, C033)

3.2.9.1.6.3 Far-field and Community Ground Run-up Noise

The Contractor shall measure and report far-field and community ground run-up noise IAW ANSI S12.75. Section 6.3.4 details the far-field and community noise methods of ANSI S12.75, and these methods are required. Additionally, the 1000-foot arc microphones of ANSI S12.75, section 6.3.5.2.5 are also required.
(DI-HFAC-81975, Noise Measurement Report, C033)

3.2.9.1.7 System Hazard Analysis

The Contractor shall conduct a continual System Hazard Analysis process per MIL-STD-882E, Task 205 to identify and assess the safety of the evolving design using quantitative and qualitative engineering techniques. The Contractor's analysis shall evaluate and quantify the risk contributions from both hardware and software at the component and equipment design levels to the integrated risk of the operational air vehicle for all new and existing aircraft parts and systems. The Contractor shall use data from other key safety, engineering (e.g., Fault Tree Analysis, Sneak Circuit Analysis), testing, and logistics (e.g., Failure Mode Effects Analysis) sources in formulating the risk assessment. The Contractor shall document and deliver the analysis in a SSHAR. If a previously undocumented hazard is identified, the Contractor shall provide an Ad Hoc Hazard Assessment containing a technical summary and an assessment of the severity and probability of the hazard using MIL-STD-882E criteria, and recommended actions necessary to eliminate the hazard or mitigate its associated risk.
(DI-SAFT-80101C, System Safety Hazard Analysis Report, C213)
(DI-MISC-80508B, Technical Report-Studies/Services, Ad Hoc Hazard Assessment, C129)

3.2.9.1.8 Hazard Tracking System

The Contractor shall develop, implement, maintain and deliver a closed-loop HTS relational database per MIL-STD-882E Task 106 that is compliant with Section 508 of the Rehabilitation Act of 1973 (29U.S.C. 794d). The Contractor shall deliver a report for each Hazard ID in the HTS database that contains all the fields for said Hazard ID and a searchable index containing the Hazard ID and Hazard description. The Contractor's HTS shall show traceability to all safety requirements. The Contractor shall provide cross reference HTS entries to related FMECA entries by Identification Number and to FRACAS entries by Failure Number in the HTS report and in the HTS database. The Contractor shall provide the Government with Type-G Access to the HTS. HTS data modification capability shall include the ability for the

Government to efficiently review, coordinate, comment, and disposition identified system hazard in support of the System Safety Working Group (SSWG) and System Safety Group (SSG), technical meeting, airworthiness, test readiness, risk management, and risk acceptance activities. The Contractor shall continually update the HTS, and make formal updates to it 30 days prior to any System Safety Group; 45 days prior to PDR, CDR, and Test Readiness Review; and 60 days following the conclusion of aircraft and GBTS developmental test and evaluation. The Contractor shall develop, implement, and maintain a training program for users of the HTS. The Contractor shall deliver training and training material to the Government on the use of the HTS.
(OT-16-30025, Hazard Tracking System (HTS) Data, C279)
(DI- ILSS-80872, Training Materials, Training for Hazard Tracking System, C045)
(DI-IPSC-81441A, Software Product Specification (SPS), Database Delivery, C071)
(DI-IPSC-81437A, Database Design Description (DBDD), C281)

3.2.9.1.9 Software Safety

The Contractor shall develop, implement, and maintain a software safety program as part of the overall System Safety Program Plan. The Contractor shall identify software safety-critical requirements and the Contractor shall flow down these requirements to the applicable subcontractors. The Contractor shall use software safety analyses and risk assessments to substantiate requirement traceability to ensure that safety-critical software provides an acceptable level of risk. The Contractor shall include software safety analysis in the SSHAR
(DI-SAFT-80101C, System Safety Hazard Analysis Report, C213)
(DI-SAFT-81626, System Safety Program Plan, C217)

3.2.9.1.10 Critical Safety Items (CSIs)

The Contractor shall develop and maintain a list of CSIs based on the criteria contained in the *Joint Aeronautical Logistics Commanders Aviation CSI Management Handbook,* August 2005.
(DI-SAFT-81932, Critical Safety Items (CSI)/Critical Application (CAI) List, C218)

3.2.9.1.11 System Safety Working Group (SSWG) and System Safety Group (SCG)

The Contractor shall support a SSWG and SCG per AFI 91-202 and MIL-STD-882E Task 105 to include presentation of ESOH program status, hazard assessment summation, ongoing analyses, hazard resolution actions, and residual risk. The Contractor shall support the SSWG and SSG IAW Annex A.

3.2.9.1.12 Explosive Hazard Classification, Explosive Ordnance Disposal, and Ammunition Card Source Data

The Contractor shall develop and provide the necessary source data package per MIL-STD-882E, Task 402 for assigning interim and final DoD Explosive Hazard Classifications consistent with AFMAN 91-201 and TO 11A-1-47 processes and standards. This source data package shall require Contractor and/or the item or component manufacturer’s interaction and coordination

with DoD hazard classifying offices of test planning activities, test execution, test reporting, and/or other substantiation basis, as applicable, to complete new classification assignments or assignments by similarity. The Contractor shall develop and provide Explosive Ordnance Disposal (EOD) source data per MIL-STD-882E, Task 403 for any explosive, pyrotechnic items, or other hazardous materials inherent in the aircraft system or subsystems, and for any explosives being developed or modified, or procured as NDI under this contract. The Contractor shall develop and provide an Ammunition Data Card per MIL-STD-1168 containing traceable historic information to the build of a production component lot or end item lot of explosive material.
(DI-SAFT-81299C, Explosive Hazard Classification Data Report, C216)
(DI-SAFT-80931B, Explosive Ordnance Disposal Data, C215)
(DI-MISC-80043B, Ammunition Data Card (ADC), C122)

3.2.10 Aircraft Software Planning and Control

3.2.10.1 Aircraft Software Development Plan

The Contractor shall develop, implement, maintain, and deliver an SDP for all newly developed or modified software. The Contractor's SDP shall capture the current baseline software metrics, as identified in the SEP, and computer resource utilization (memory, throughput, and bus loading). The Contractor shall include a plan for software quality assurance in the SDP which details the subsystem and system level processes used to ensure software products are tested and validated IAW the systems engineering requirements decomposition. Software quality assurance shall be flowed to subcontractors that produce software products used in meeting program requirements.
(DI-IPSC-81427A, Software Development Plan (SDP), Aircraft SDP, C052)

3.2.10.2 Aircraft Software Development and Documentation

The Contractor shall develop, implement, maintain, test, verify and deliver software; software and interface requirements; software specifications; analysis; test plans, descriptions, and reports; and design and version descriptions for each CSCI using a minimum CMMI-Level 3 certified systematic methodology for all software development organizations supporting the APT Program. The Contractor shall mark and label software IAW EIA-649-1.
(DI-IPSC-81433A, Software Requirements Specification (SRS), C055)
(DI-IPSC-81434A, Interface Requirements Specification (IRS), Aircraft IRS, C056)
(DI-IPSC-81441A, Software Product Specification (SPS), C063)
(DI-IPSC-81435A, Software Design Description (SDD), C057)
(DI-IPSC-81436A, Interface Design Description (IDD), C058)
(DI-IPSC-81442A, Software Version Description (SVD), C066)
(DI-IPSC-81438A, Software Test Plan (STP), C060)
(DI-IPSC-81439A, Software Test Description (STD), C061)
(DI-IPSC-81440A, Software Test Report (STR), C062)

(DI-MISC-80508B, Technical Report Study/Services, Verification Analysis Reports, C127)

3.2.10.3 Aircraft Software Development Lab

The Contractor shall design, develop, integrate, test, maintain, and deliver a SDL for all OFP/SIs associated with the key components and interfaces as a minimum (as described in SS section, 3.10.3) for executable code development and qualification efforts. The Contractor shall have separate software development stations (or develop integrated like-capability), for each unique OFP/SI, for making source code updates. The Contractor shall deliver a SDL within 60 days of Aircraft SVR completion. The Contractor's SDL shall emulate sufficient system characteristics for OFP/SI development, integration, testing, and qualification. The Contractor's SDL shall support bus level testing with emulated or actual LRUs present as necessary. The Contractor shall set up and assemble each development and qualification station contained within the SDL and shall successfully accomplish an acceptance test for each upon delivery to the Government Depot. The Contractor shall provide training, associated training materials, and user manuals required for the operation and maintenance of the SDL.
(DI-ILSS-80872, Training Materials, Aircraft Software Development Laboratory (SDL), C049)
(DI-IPSC-81443A, Software User Manual (SUM), Aircraft Software Development Laboratory (SDL), C068)
(DI-QCIC-80553A, Acceptance Test Plan, C207)
(DI-NDTI-80603A, Test Procedure, Acceptance Test Procedure, C188)
(DI-QCIC-81891, Acceptance Test Report, C212)

3.2.10.4 Aircraft Software Metrics

The Contractor shall establish a process to track and manage software metrics and include it in the SEMP. The Contractor shall use the software metrics in the SEP as the initial set of software metrics. These metrics shall apply to all OFPs and SIs that are new or modified for the APT aircraft. Any changes to the metrics will be defined and agreed upon during the Computer Resources Working Group (CRWG) meetings. The Contractor shall document and deliver the software metrics.
(DI-MISC-80508B, Technical Report – Study/Services, Software Metrics, C126)

3.2.10.5 Computer Resources Working Group

The Contractor shall support the CRWG IAW Annex A. The Contractor shall provide updates of the software metrics during the CRWG meetings.

3.2.10.6 Organic Software Training

The Contractor shall accommodate up to two (2) embedded Government personnel at each specific Contractor's software development location. This is required for all OFP/SIs designated key components defined in the Open Systems Architecture section of the aircraft SS 3.10.3, in order to facilitate owning the software technical baseline and transition to organic software

sustainment. The Contractor shall designate all OFP/SIs associated with key components as CSCIs unless they are 100% reused software and then the designation would be on a case-by-case basis as agreed to by the Government. The Contractor shall provide these accommodations through the completion of SVR.

3.2.10.7 Post Deployment Software Support

The Contractor shall provide, via the CRWG, inputs to the Software Transition Plan (STrP) and Computer Resources Life Cycle Management Plan in support of transition to full organic software sustainment. The Government will provide a draft version of the STrP.

3.2.11 Certifications and Approvals

The Contractor shall perform all activities necessary to support the Government in obtaining the required certifications, accreditations, approvals, waivers, and endorsements listed in Annex D. This includes but is not limited to participation in planning and technical meetings, providing data, conducting analyses, and performing tests.

3.2.11.1 Frequency Spectrum Allocation

The Contractor shall prepare and submit required spectrum certification and frequency allocation data via DD Form 1494, for each item that will use the electromagnetic spectrum IAW AFI 33-580.
(DI-EMCS-81827, Spectrum Certification Spectral Characteristics Data, DD Form 1494, C017)

3.2.11.2 Electromagnetic Environmental Effects (E3)

The Contractor shall perform and deliver an analysis of the E3 interface and performance requirements into system hardware and software that provides the means for the Government to evaluate compliance with MIL-STD-464C. The Contractor shall develop and deliver a procedure for verifying compliance with MIL-STD-464C for the aircraft. The Contractor shall ensure that the GBTS complies with the commercial Federal Communications Commission Class B *Emissions and Immunity*, standard. The Contractor's procedures shall describe the methods of test, analysis, and inspections used to verify compliance with the E3 interface and performance requirements. The Contractor shall follow the E3 verification procedures and deliver a report on the results of the electromagnetic effects testing for the Aircraft and GBTS.
(DI-EMCS-81540B, Electromagnetic Environmental Effects (E3) Integration and Analysis Report (E3IAR), C014)
(DI-EMCS-81541B, Electromagnetic Environmental Effects (E3) Verification Procedures (E3VP), C015)
(DI-EMCS-81542B, Electromagnetic Environmental Effects (E3) Verification Report (E3VR), C016)

3.2.11.3 Communication, Navigation, Surveillance and Air Traffic Management (CNS/ATM)

The Contractor shall provide technical assistance for tailoring of and compliance with all CNS/ATM compliance requirements. The Contractor shall support the Government in obtaining a Type 2 Navigation Data Chain Letter of Acceptance, CNS/ATM functional capability Letters of Compliance, and all applicable documentation to achieve Airworthiness and fielding Operational Approvals IAW general flight rules, AFI 11-202, Volume 3. The Contractor shall deliver tailoring recommendations for the draft APT Tailored Performance Matrices. The Contractor shall deliver the corresponding verification artifacts or equivalent certifications (as applicable) IAW AFI 63-137.
(DI-MISC-80508B, Technical Report – Study/Services, CNS/ATM Compliance Data, C142)

3.2.11.4 Air Traffic Control Radar Beacon System, Identification Friend or Foe MARK XII System (AIMS) Certification

The Contractor shall prepare and submit AIMS certification documentation in support of AIMS box-level and platform integration certification and National Telecommunications and Information Administration spectrum certification of 1030/1090 megahertz systems, as applicable.
(DI-NDTI-80809B, Test/Inspection Report, AIMS Certification Data, C191)

3.2.11.5 SEEK EAGLE Certification

The Contractor shall provide all technical support necessary to obtain USAF SEEK EAGLE Stores Certification. The Contractor shall perform all activities necessary to maintain SEEK EAGLE Stores certification of the aircraft. The Contractor shall include all data required for SEEK EAGLE Certification on the DAL.
(DI-MGMT-81453A, Data Accession List (DAL), C100)

3.2.12 Aircraft Airworthiness

The Contractor shall design, produce, and deliver aircraft that comply with USAF Airworthiness Certification requirements within DoDD 5030.61, AFPD 62-6, and AFI 62-601.

3.2.12.1 Production Aircraft Design

The Contractor shall develop a production aircraft design that complies with the USAF APT Airworthiness Certification Basis and supports issuance of a USAF MTC IAW AFPD 62-6 and AFI 62-601.

3.2.12.2 Developmental Test & Evaluation (DT&E) Aircraft

The Contractor shall design, produce, deliver, maintain, and operate test aircraft that conform to the USAF-approved EFRB and Military Flight Releases (MFRs) and will conform to the APT

Airworthiness Certification Basis when modified to the production-representative configuration, reference paragraphs 3.1.2 and 3.4.1.10.

3.2.12.3 Airworthiness Program

The Contractor shall develop, implement, and maintain an airworthiness program that supports issuance of a design-based MTC for the aircraft prior to entrance into Initial Operational Test and Evaluation (IOT&E) as well as MFRs for EMD flight test operations prior to the aircraft TRR. The Contractor's airworthiness program shall be consistent with the Government's APT Airworthiness Plan; USAF airworthiness policy and guidance in DoDD 5030.61, AFPD 62-6, AFI 62-601, USAF Airworthiness Bulletins; and MIL-STD-882E. The Contractor shall allow the program office technical insight into execution of the airworthiness program and development of airworthiness compliance artifacts.

3.2.12.4 Airworthiness Working Group (AWG)

The Contractor shall support AWG meetings, IAW Annex A, to include creating a group charter, generating agendas, defining the airworthiness data repository implementation, providing technical briefings, presenting certification status, discussing issues, identifying and assigning action items, tracking issues and action items, working assigned action items, and preparing and distributing meeting minutes.

3.2.12.5 Contractor APT Airworthiness Plan

The Contractor shall develop, implement, maintain, and deliver a Contractor Airworthiness Plan that documents its airworthiness program, processes and procedures, organization, interfaces, and Government certification tasks, products, and schedule. The Contractor's plan shall describe how it satisfies airworthiness requirements in the Government APT Airworthiness Plan. The Contractor's plan shall identify the system being certified, including both the aircraft and engine. If the aircraft is based on an existing aircraft, the Contractor's plan shall identify the aircraft, existing airworthiness certification, and summarize significant modifications to be accomplished to meet SS requirements. The Contractor's plan shall address airworthiness requirements in AFI 62-601 and *Airworthiness Bulletin* (AWB)-002A. The Contractor's Airworthiness Plan shall describe how the APT Airworthiness Certification Basis will be tailored and the Contractor's support to obtain its final approval from the USAF TAA. The Contractor's plan shall summarize key aspects of flight test, including EFRB development and approval, requirements for flight-envelope expansion, and MFR approval. The Contractor's Airworthiness Plan shall discuss development of the certification compliance reports for the MTC and MFRs, and the Contractor's support during evaluation and approval of these compliance reports by the USAF TAA. The Contractor's plan shall discuss how the EMD aircraft will be updated to the production representative configuration and conformed to the MTC Type design. (DI-MGMT-80004A, Management Plan, Contractor Airworthiness Plan, C082)

3.2.12.6 Certification Basis

3.2.12.6.1 APT Airworthiness Certification Basis

The Contractor shall prepare an APT Airworthiness Certification Basis, documented in a TACC, for the MTC IAW AWB-004A and 005 using MIL-HDBK-516C and applicable Change Notices, the AFLCMC/EZ Air Refueling Modification Airworthiness Certification Criteria (MACC) and the TAA-approved TACC as guidance.
(DI-SESS-81766, Airworthiness Specification, APT Certification Basis, C261)

3.2.12.6.2 Experimental Flight Release Basis

The Contractor shall prepare an EFRB for approval of MFRs authorizing EMD flight test aircraft configuration(s) and planned flight test operations. The Contractor shall prepare the EFRB IAW AWB-004A and 005, using MIL-HDBK-516C and applicable Change Notices, the AFLCMC/EZ Air Refueling MACC and the TAA-approved TACC as guidance.
(DI-SESS-81766, Airworthiness Specification, Experimental Flight Release Basis (EFRB), C262)

3.2.12.6.3 USAF Technical Airworthiness Authority (TAA) Approval Support

The Contractor shall provide technical support necessary to enable the program office to obtain USAF TAA approval of the airworthiness certification basis for the MTC and MFRs IAW AWB-003A and update this certification basis when changes are approved by the Government.

3.2.12.7 Airworthiness Certification Compliance

The Contractor shall complete and document all activities, and provide all data, as necessary, to show compliance to the USAF TAA approved certification basis. The Contractor shall not use foreign military or civil airworthiness certificates to show compliance to the certification basis.

3.2.12.7.1 Experimental Flight Release Basis Compliance Report

The Contractor shall prepare and update, as required, a Certification Compliance Report that documents compliance with the EFRB IAW AWB-003A, AWB-005, and AFI 62-601 paragraph 1.16.1.
(DI-SESS-81768, Airworthiness Certification Criteria Report, APT and EFRB Certification Report, C263)

3.2.12.7.2 APT Compliance Report

The Contractor shall prepare and update as required a Certification Compliance Report that documents compliance with the APT Airworthiness Certification Basis IAW AWB-003A, AWB-005, and AFI 62-601 paragraph 1.16.1.
(DI-SESS-81768, Airworthiness Certification Criteria Report, APT and EFRB Certification Report, C263)

3.2.12.7.3 Airworthiness Risks

The Contractor shall identify and assess risks associated with non-compliance to applicable airworthiness certification criteria IAW AWB-005 and MIL-STD-882E. The Contractor shall develop and implement plans to retire or mitigate the risks associated with non-compliances. The Contractor shall mitigate single or multiple criteria non-compliances and their resulting hazards with a serious or high risk (Risk Assessment Code or Software Safety Criticality Index IAW MIL-STD-882E) to achieve a medium or lower risk as adjudicated by the Government. The Contractor shall identify when the risk will be mitigated to a medium or low Hazard Risk Index level as defined in MIL-STD-882E. The Contractor shall analyze multiple medium or lower non-compliances that exist in one Certification Basis assessment area and treat those that collectively result in a serious or high risk at the resultant Hazard Risk Index level. The Contractor shall track the identified risks in the closed-loop HTS.
(DI-MISC-80508B, Technical Report – Study/Services, Airworthiness Non-Compliance Risk Assessment, C138)

3.2.12.7.4 Airworthiness Compliance Verification Documentation (CVD)

The Contractor shall prepare a CVD for each applicable criterion in the airworthiness certification basis. The Contractor shall document compliance rationale, cite applicable compliance artifacts, and reference applicable portions of the artifacts by section, page and paragraph number in the CVD. The Contractor shall document the residual risk and mitigation for each non-compliant criterion IAW MIL-STD-882E. The Contractor shall make the CVD the first reference cited for each airworthiness criteria in the Substantiating Data References section of Certification Compliance Reports.
(DI-MISC-80508B, Technical Report – Study/Services, Airworthiness Compliance Verification Document, C139)

3.2.12.7.5 Compliance Artifacts

The Contractor shall generate and make available compliance artifacts for review by the Government to support program office and TAA approval of compliance reports. The Contractor's artifacts shall be in the English language, and be the complete document (i.e., not excerpts, redactions, or a summary report of the original document). The Contractor's compliance artifacts shall include Prime Contractor, subcontractor, and supplier data as needed to support the APT airworthiness requirements.

3.2.12.7.6 Compliance Technical Support

The Contractor shall provide technical support to update airworthiness compliance reports and substantiation products as necessary for TAA approval of the Certification Compliance Reports and issuance of the MTC and MFRs.

3.2.12.7.7 Compliance Status Report

The Contractor shall provide a recurring status report on completion of the compliance reports that includes airworthiness metrics for each tab of the TACC and EFRB. The Contractor's airworthiness metrics shall include total number of criteria, number of applicable criteria, number of criteria that have been completed, number of criteria that are compliant, total number of risks identified, the number of medium risks, the number of serious risks, and the number of high risks. The Contractor shall identify the status of risk mitigation plans IAW 3.2.12.7.3 for non-compliant criteria with medium or higher risk.
(DI-MGMT-80368A, Status Report, Certification Compliance Report Preparation, C092)

3.2.12.8 Airworthiness System Safety Risk Assessments (SSRA)

The Contractor shall document safety hazards arising from non-compliances identified in the APT and EFRB *Certification Compliance Reports*. The Contractor shall prepare SSRAs IAW formatting guidance in AWB-013A for each identified hazard using MIL-STD-882E risk matrices. The Contractor shall provide technical support and update the SSRAs as necessary to obtain approval IAW AFI 62-601 paragraph 1.16.1, MIL-STD-882E, and DoDI 5000.02.
(DI-MISC-80508B, Technical Report – Study/Services, System Safety Risk Assessment (SSRA), C135)

3.2.12.9 Airworthiness Data Access

The Contractor shall establish, maintain, and administer an electronic airworthiness data repository for all airworthiness data that facilitates the communication, demonstration, and assessment of compliance to airworthiness criterion, criterion non-compliances, and residual risk. The Contractor shall collaboratively define the data repository implementation during the course of Government-Contractor AWG interactions prior to data repository establishment. The Contractor shall provide Type-E Access to the airworthiness data repository for authorized Government personnel and their designees. The Contractor shall make the airworthiness database repository available for Government use 30 days prior to submission of compliance report data for a MFR or MTC but NLT Aircraft PDR. The Contractor shall develop, implement, and maintain a training program for users of the airworthiness electronic data repository. The Contractor shall deliver training and training material to the Government on the use of the airworthiness data repository.
(DI- ILSS-80872, Training Materials, Training for Airworthiness Data Access System, C045)

3.2.12.10 Airworthiness Data Access to Support Future Modifications

The Contractor shall provide Type-E Access to airworthiness data that the Government requires for two (2) years after either a) acceptance of all items (other than data or computer software) to be delivered under this contract or b) termination of this contract, whichever is later. The Contractor shall submit a proposal for Type-E Access to airworthiness data, relevant to the Government-identified configuration, that the Government orders by name, document number, or

keyword from two (2) years after either a) acceptance of all items (other than data or computer software) to be delivered under this contract or b) termination of this contract through the date when the aircraft is no longer an active asset in the Government inventory. The Contractor shall provide Type-E Access to the technical data of a subcontractor and pertaining to an item obtained from the subcontractor for the same period. The Contractor's proposal shall be for data discovery or search, required technical updates to airworthiness data to which Type-E Access was provided under this contract, conversion to the Government-prescribed form contained in the order, and secure Type-E Access by the Government. The Government's rights to use said data or computer software shall be pursuant to the hardware and software data rights defined in this contract.

3.2.13 Flight Performance and Flight Dynamics Data

The Contractor shall conduct technical analyses; provide all resulting data necessary to evaluate aircraft performance, flight dynamics, and handling qualities; and perform accurate analyses and simulation of air vehicle rigid-body dynamic motions, flight path, and response to controls or configuration changes. The Contractor shall provide this data and the Standard Aerodynamic Characteristics Charts as part of the Substantiating Data Report (MIL-C-005011B can be used for formatting guidance).
(DI-MISC-80711A, Scientific and Technical Reports, Flight Performance & Flight Dynamics Data, C162)

3.2.14 Aircraft Information Program

The Contractor shall implement and maintain an Aircraft Information Program to develop Recorded Aircraft Information (RAI) requirements IAW the Aircraft SS. The Contractor shall incorporate RAI requirements into the appropriate specifications and ICDs. The Contractor shall support the Government to define processes and procedures for formatting, storing, downloading, transferring, and analyzing RAI data. The Contractor shall deliver a RAI parameter list.
(DI-MISC-80508B, Technical Report-Study/Services, RAI Parameter List, C123)

3.2.14.1 Aircraft Information Working Group (AIWG)

The Contractor shall support the AIWG IAW AFI 63-133 and Annex A.

3.2.14.2 Aircraft Information Format Conversion Software

The Contractor shall provide software that is capable of exporting RAI into a Comma Separated Values format. The Contractor shall provide a user's manual that includes step-by-step instructions for all functionality of the software. The Contractor's software shall be compatible with the AF Standard Desktop and shall meet all AF IT security requirements.
(DI-IPSC-81443A, Software User Manual (SUM), RAI Format Conversion, C067)

(DI-IPSC-81441A, Software Product Specification (SPS), Aircraft Information Format Conversion Software, C064)

3.2.15 Ground Based Mission Support Systems and Datalink Equipment

3.2.15.1 Mission Support Systems

The Contractor shall design, develop, integrate, test, and certify mission support systems equipment required to accomplish Mission Support functions (mission planning (except for the development of the Unique Planning Component), mission scenario generation and mission debriefing) to meet section 3.12 of the Aircraft SS. The Contractor shall deliver and install mission support systems equipment and shall successfully accomplish an acceptance test upon delivery to the Government. The Contractor shall deliver a Software User Manual for each the mission debriefing function and the mission scenario generation function.
(DI-QCIC-80553A, Acceptance Test Plan, C207)
(DI-NDTI-80603A, Test Procedure, Acceptance Test Procedure, C188)
(DI-QCIC-81891, Acceptance Test Report, C212)
(DI-IPSC-81443A, Software User Manual (SUM), Mission Debriefing, C068)
(DI-IPSC-81443A, Software User Manual (SUM), Mission Scenario Generation, C068)

3.2.15.2 Ground Based Datalink Equipment

3.2.15.2.1 Ground Support Station (GSS) Connectivity

In the event the Aircraft System includes the GSS Connectivity objective requirement as defined in section 3.2.4.6 of the Aircraft SS, the Contractor shall design, develop, integrate, and test the ground-based data link equipment to meet the Aircraft SS. The Contractor shall deliver and install the ground-based data link equipment and shall successfully accomplish an acceptance test upon delivery to the Government. The Contractor shall deliver a Software User Manual for the GSS.
(DI-QCIC-80553A, Acceptance Test Plan, C207)
(DI-NDTI-80603A, Test Procedure, Acceptance Test Procedure, C188)
(DI-QCIC-81891, Acceptance Test Report, C212)
(DI-IPSC-81443A, Software User Manual (SUM), Ground Support Station, C068)

3.2.15.2.2 Ground Based Training System (GBTS) Connectivity

In the event the Aircraft System includes the GBTS Connectivity objective requirement as defined in section 3.2.4.5 of the Aircraft SS and section 3.4.6.4 of the GBTS SS, the Contractor shall design, develop, integrate, and test ground-based data link equipment to meet the Aircraft SS and GBTS SS. The Contractor shall deliver and install the ground-based data link equipment and shall successfully accomplish an acceptance test upon delivery to the Government.
(DI-QCIC-80553A, Acceptance Test Plan, C207)

(DI-NDTI-80603A, Test Procedure, Acceptance Test Procedure, C188)
(DI-QCIC-81891, Acceptance Test Report, C212)

3.2.15.3 Ground Support Station

In the event the Aircraft System includes the GSS Connectivity objective requirement as defined in section 3.2.4.6 of the Aircraft SS, the Contractor shall design, develop, integrate, and test APT GSSs to meet the Aircraft SS. The Contractor shall deliver and install the GSSs and shall successfully accomplish an acceptance test upon delivery to the Government.
(DI-QCIC-80553A, Acceptance Test Plan, C207)
(DI-NDTI-80603A, Test Procedure, Acceptance Test Procedure, C188)
(DI-QCIC-81891, Acceptance Test Report, C212)

3.3 Program Management

3.3.1 Program Planning and Management

3.3.1.1 Integrated Program Management and Product Development

The Contractor shall develop, implement, deliver, and execute an Integrated Product and Process Development approach and Program Management Plan for the APT Program. The Contractor shall document its Program Management Plan for the APT Program, using the current *Defense Acquisition Guidebook* and the *DoD Guide to Integrated Product and Process Development,* August 1998 as guides. The Contractor shall provide a level of effort to support the Government's accomplishment of acquisition phase reviews, milestones, and associated documentation required by DoDI 5000.02 and AFI 63-101/20-101. The Contractor's Program Management Plan shall describe the approach for the development, delivery, management, and sustainment of all APT Program activities and shall delineate any approach or task which detracts from concurrency between the Aircraft and GBTS. The Contractor's Program Management Plan shall delineate all phases of the systems approach to tasks, and shall describe plans for CM and concurrency of all training devices and software, and shall describe linkages to the Work Breakdown Structure, IMP, IMS, and the overall APT CMP. The Contractor's Program Management Plan shall describe details of the Contractor's organization, practices, documentation, and techniques to be used in managing the APT Program to include management of subcontractors. The Contractor shall accomplish all PM tasks necessary to execute the APT Program successfully. The Contractor shall be responsible for designating program management for the aircraft and for the GBTS including all Contractor and Subcontractor efforts on the APT Program. The Contractor shall ensure all efforts on this contract are managed as one integrated system engineering effort. The Contractor's program managers shall be responsible for overall planning, directing, and controlling of the APT Program components, services and documentation. The Contractor shall provide real-time program status to the Government to ensure there is open communication for the APT Program.

(DI-MGMT-81797, Program Management Plan, C108)

3.3.1.1.1 Program Status Report

The Contractor shall generate a monthly program status report to include all technical activities completed, in progress, estimated start, current issues and resolution, schedule, and other program status items applicable to Contractor, subcontractors, and suppliers' performance. The Contractor shall provide separate sections in the Status report for Aircraft and GBTS.
(DI-MGMT-80368A, Status Report, Program Status Report, C090)

3.3.1.1.2 Quality Assurance Surveillance Plan (QASP)

The Government will inspect and evaluate the Contractor's performance to ensure services are received IAW requirements set forth in this contract. The Contractor shall support the Government's surveillance of performance objectives as specified in the APT QASP. The Government will perform inspections and record all surveillance observations. The services to be performed by the Contractor during the period of this contract shall, at all times and places, be subject to review by the Procurement Contracting Officer (PCO) or authorized representative. Any matter concerning a change to the scope/price/terms/conditions of this contract shall be referred to the PCO only. The Contractor Performance Assessment Report will be used by the Government as a means to document the Contractor's successful performance of these performance objectives.

3.3.1.2 Integrated Master Plan and Integrated Master Schedule

3.3.1.2.1 Integrated Master Plan

The Contractor shall develop, implement, deliver, and maintain an APT Program IMP. The Contractor shall include the necessary events, significant accomplishments, and accomplishment criteria needed to successfully complete the program, including the mandatory events, accomplishments, and entry and exit criteria identified in the Government-provided IMP. The Contractor shall include details of the Contractor's integrated processes to include all necessary activities performed by all functional disciplines to produce the product requirement by the contract. The Contractor shall utilize the *DoD IMP and IMS Preparation and Use Guide, version 0.9*, October 2005 as guidance.
(DI-MGMT-81797, Program Management Plan, Integrated Master Plan, C282)

3.3.1.2.2 Integrated Master Schedule

The Contractor shall develop, implement, maintain, update and provide to the Government an Integrated Program Management Report (IPMR), to include an IMS that shall contain the necessary planned events and milestones, accomplishments, entrance, and exit criteria, and activities from contract award to the end of the contract period of performance for the entire APT Program. The Contractor shall develop an APT Program IMS to include both the aircraft and the

GBTS as clearly identifiable, segregated subsets. The Contractor shall develop its IMS to align with the APT Program IMP including the Government-identified, mandatory IMP events, accomplishments, and entry and exit criteria associated with those events. The Contractor shall maintain and update the IMS to reflect the Government approved changes to the IMP, or changes in the Contractor's detailed execution of activities or schedule. The Contractor's IMS shall include the discrete activities to be performed by the Contractor and its major subcontractors and suppliers, and shall be mapped to the Work Breakdown Structure. The Contractor shall facilitate a schedule analysis of the IMS as part of the Integrated Baseline Review (IBR). The Contractor's analysis shall include a Vertical Schedule Analysis, Horizontal Schedule Analysis, and a Schedule Health Assessment (SHA). The Contractor shall use the DCMA 14 Point Assessment for the SHA. Prior to finalizing the IMS at the first IBR, the Contractor shall perform a Schedule Risk Assessment (SRA) and adjust the IMS as necessary per the results of the SRA. The Contractor shall utilize the *DoD IMP and IMS Preparation and Use Guide, version 9,* October2005 and the Government Accountability Office (GAO)-16-89G as guidance.
(DI-MGMT-81861A, Integrated Program Management Report (IPMR), C114)

3.3.1.3 Risk Management

The Contractor shall develop, document, implement and maintain an APT Program risk management process that systematically identifies, assesses, and mitigates program cost, schedule, and technical risks to include Government-owned and identified risks. The Contractor shall generate, implement, and maintain a Program Risk Management Plan that is consistent with the Government's APT Risk Management Plan IAW AFLCMC *Standard Process for Risk and Issue Management in Acquisition Programs version 1.3,* AFI 63-101/20-101, and AFPAM 63-128, Chapter 12 as guides. The Contractor shall submit periodic Risk Management Status Reports. The Contractor shall identify tasks in the IMS impacted by all Moderate and High risks. The Contractor shall highlight tasks on the critical path and near-critical path in the IMS that are associated with all Moderate and High risks. The Contractor shall support the Integrated Risk Assessment (IRA) IAW AFLCMC *Standard Process for Risk and Issue Management in Acquisition Programs version 1.3,* as specified in Annex B. The Contractor shall submit risks and opportunities to the Government in support of RWG's and RMB's. The Contractor shall document and track risks and opportunities, including assessments and risk handling plans in the Contractor's risk management tool.
(DI-MGMT-81808, Contractor's Risk Management Plan, C111)
(DI-MGMT-81809, Risk Management Status Report, C112)

3.3.1.4 Risk Working Group and Risk Management Board

The Contractor shall support the Risk Working Group (RWG) and Risk Management Board (RMB) as specified in Annex A.

3.3.1.5 Government Representative Accommodations

3.3.1.5.1 Permanent Government Representative Accommodations

The Contractor shall furnish suitable office space and equipment to include high speed network hookup, desks, chairs, phones, and whiteboard for Government representatives at the appropriate Contractor and subcontractor facility throughout the contract period as required in 3.2.10.6 and 3.2.6.2.

3.3.1.5.2 Temporary Government Representative Accommodations

The Contractor shall furnish suitable office space and equipment to include high speed network hookup, telephone services, desks, chairs, cubicle walls, phones, and whiteboard, for Government representatives throughout the contract period as defined below:

a) Routine Government visitors: Up to (15) Government representatives in or conveniently located near the Contractor's program management offices and manufacturing and/or modification facilities.
b) Resident Integrated Logistics Support Activity: Up to (15) Government representatives co-located at the Contractor's facility to review drawings, TOs, and provisioning work efforts.
c) Aircraft DT&E and IOT&E Activity: Up to thirty (30) Government representatives starting 12 months prior to first EMD aircraft delivery and co-located with the Contractor's primary flight test facilities in order to facilitate ferry flights, test planning, and combined testing that is impracticable to execute at a Government facility. After SVR and FCA are complete the number shall be reduced to (12) persons until IOT&E is complete. One dedicated conference room (large enough for 20 personnel) shall be made available at this location for Government use.
d) GBTS DT&E and IOT&E Activity: Up to twelve (12) Government representatives starting 12 months prior to first ATD system performance assessment and co-located with the Contractor's primary ATD development facilities. After acceptance of EMD ATDs is complete the number shall be reduced to (6) persons.
e) Production acceptance testing: Up to ten (10) Government representatives starting 12 months prior to first LRIP aircraft delivery and co-located with the Contractor's primary acceptance test facilities.
f) GBTS IMI and Electronic Media SME Support: Up to eight (8) Government representatives at the location of Contractor IMI and Electronic Media development and test activities.

3.3.1.6 Program Management Reviews

The Contractor shall host Program Management Reviews (PMRs) as specified in Annex B throughout the contract period of performance. At a minimum, the Contractor PMRs shall

include a program status of progress on cost, schedule, performance, and any special interest items.

3.3.1.7 Support of Working Groups

The Contractor shall participate in working groups IAW Annex A. The Contractor shall flow down requirements to appropriate subcontractors and suppliers to support Working Groups IAW Annex A. The Contractor shall prepare and deliver agendas, presentation materials and meeting minutes as indicated in Annex A.
(DI-ADMN-81249A, Conference Agenda, C002)
(DI-ADMN-81505, Report, Record of Meeting/Minutes, C005)

3.3.1.8 Support of Meetings, Reviews, and Audits

The Contractor shall support the Contractor and Government held meetings, conferences, and audits as described in Annex B in support of the contract performance in the operation of the Defense Acquisition System and the Joint Capabilities Integration Development System to include major milestone reviews, In-Process Reviews, Defense Acquisition Boards, and the development and update of documentation per DoDI 5000.02, Enclosure 1. The Contractor shall flow down requirements to appropriate subcontractors and suppliers to support Meetings and Reviews IAW Annex B. The Contractor shall prepare and deliver agendas, presentation materials and meeting minutes as indicated in Annex B.
(DI-ADMN-81249A, Conference Agenda, C002)
(DI-ADMN-81505, Report, Record of Meeting/Minutes, C005)

3.3.1.9 Post-Award Conference

The Contractor shall host a post-award conference as specified in Annex B. The Contractor shall present, at a minimum, the approach to meeting the cost, schedule, and performance requirements of the contract.

3.3.1.10 Associate Contractor Agreements

The Contractor shall establish and maintain the necessary Associate Contractor Agreements (ACAs) IAW Air Force Federal Acquisition Regulation Supplement Informational Guidance (IG) 5317-9000 in order to facilitate an open exchange of information necessary to fulfill the requirements of this contract. If directed, the Contractor shall develop and enter into an ACA with a potential Maintenance Training System (MTS) Contractor in order to share the MTS data package for the MTS.

3.3.1.11 Maintenance Training System Support

If directed, the Contractor shall support the fielding and sustainment of the Government's MTS. The Contractor shall provide APT Aircraft SMEs and engineering support to the Government to support the design and development of the MTS. The Contractor shall participate in MTS design

reviews, provide answers to aircraft system data that is provided as part of the simulator data package, and support the testing phase of the MTS. The Contractor shall provide SMEs and engineering support to the Government for the development of the Maintenance Training System Requirements Analysis (TSRA). The Contractor shall assist the Government in the development of the training task analysis and lesson objectives based on APT Aircraft.

3.3.1.12 Studies and Analyses

The Contractor shall perform studies and analyses related to design, integration, testing, logistics, maintenance, and operation of the APT Program, as requested by the Government. Upon Government request, the Contractor shall generate a proposed study-SOW and a proposed completion date in a Time and Materials (T&M) proposal for the study and study report. Proposed hours shall apply the pre-priced WRAP rate for the year(s) in which the work will occur. The Contractor shall not begin performance on an effort until it is approved. Upon Government approval, the Contractor shall perform the work and submit a final report by the agreed completion date. The Contractor shall submit a DD Form 250 upon completion of each study and the submittal of the final report. The Contractor shall maintain status of all open tasks with hours authorized, original completion date, and expected completion date. The Contractor shall provide status to the Government.
(DI-MISC-80508B, Technical Report – Study/Services, Design Trade Studies and Cost Benefit Analyses (CBA), C147)
(DI-MGMT-80368A, Status Report, Program Status Report, C090)

3.3.1.13 Over and Above Requirements

Over and Above (O&A) work is defined as work discovered during the course of the contract that is (1) within the general scope of the contract, (2) not covered by the line item(s) for the basic work under the contract, and (3) necessary in order to satisfactorily complete the contract. O&A work is authorized for unknown or unexpected events that have not been specifically identified as a known requirement prior to contract award. The Contractor shall submit a Truth in Negotiations Act (TINA) compliant proposal for any O&A effort that exceeds the TINA threshold. Requests for O&A approval for efforts under the TINA threshold will be processed through contract channels for PCO concurrence IAW Annex F.

3.3.2 Business Management

3.3.2.1 Cost and Software Data Reporting (CSDR) Plan

The Contractor shall systematically collect and report actual contract costs in order to provide DoD cost analysts with needed data to estimate future costs. The Contractor shall establish management procedures that provide for the generation of timely and reliable information for the Contractor Cost Data Reports (CCDRs) and Software Resources Data Reports (SRDRs) required by the CCDR and SRDR data items of this contract. The Contractor shall require and flow down

the requirement for CSDR reporting to subcontractors at any tier with a subcontract that exceeds $50 million or any subcontracts valued between $20 million and $49 million that are for software efforts or designated by the Government as being high risk, high value, or high technical interest. If the subcontracts exceed $50 million, the Contractor changes subcontractors or makes new subcontract awards, the Contractor shall notify the Government. The Contractor shall use the Government-approved CSDR plan for this contract, DD Form 2794, and the related Resource Distribution Table as the basis for reporting. The Contractor shall prepare reports IAW DFARS 252.234-7004, DoDI 5000.02 and DoD 5000.04-M-1.
(DI-FNCL-81565C, Cost Data Summary Report (DD Form 1921), Contractor Cost Data Reporting, C020)
(DI-FNCL-81566C, Functional Cost-Hour Report (DD Form 1921-1), C021)
(DI-FNCL-81567C, Progress Curve Report (DD Form 1921-2), C022)
(DI-FNCL-81765B, Contractor Business Data Report (DD Form 1921-3), C023)
(DI-FNCL-81992, Sustainment Functional Cost-Hour Report (DD Form 1921-5), C024)
(DI-MGMT-82035, Software Resources Data Reporting: Development and Maintenance Reports and Data Dictionary, C283)

3.3.2.2 Cost and Software Data Reporting Post Award Conference

The Contractor shall host a CSDR post award conference as specified in Annex B IAW DFARS 252.234-7004 to validate that the Contractor's standard CSDR process satisfies the guidelines contained in the DoD 5000.04-M- 1, CSDR Manual, and the requirements in the Government-approved CSDR plan for the contract, DD Form 2794, and related Resource Distribution Table.

3.3.2.3 Contractor Work Breakdown Structure (CWBS)

The Contractor shall develop and deliver the CWBS and CWBS dictionary for the APT Program. The Contractor shall maintain and update the CWBS and CWBS dictionary during contract execution. The CWBS and the CWBS dictionary shall meet the requirements of MIL-STD-881C and conform to the Government-approved CSDR Plan for the contract and DD Form 2794. The Contractor shall use the CWBS as the framework for contract planning, budgeting, and reporting of cost, schedule, and performance. The CWBS may be extended to lower levels that represent the plan to accomplish the entire contract work scope consistent with internal organizations and processes.
(DI-MGMT-81334D, Contract Work Breakdown Structure, C098)

3.3.2.4 Earned Value Management System (EVMS)

The Contractor shall provide monthly cost and schedule reporting using the tenets and reporting formats of Earned Value Management IAW DFARS 252.234-7001, DFARS 252.234-7002 and DFARS 252.242-7005. The Contractor shall provide the Government documentation of work breakdown structure lower level detail (no lower than the control account level) as required. The Contractor shall ensure that the EVMS correlates with the CWBS. The Contractor shall deliver a

Contract Funds Status Report (CFSR) and IPMR. The Contractor's CFSR shall reconcile to IPMR Format 1. The Contractor shall use the Central Repository for Earned Value Management Data Manual as a reference when publishing reports to the Central Repository.
(DI-MGMT-81468, Contract Funds Status Report (CFSR), C101)
(DI-MGMT-81861A, Integrated Program Management Report (IPMR), C114)

3.3.2.5 Financial Management Reporting

The Contractor shall support the APT Program Office's budgeting process by providing actual expenditures to date and forecasted future expenditures to include termination liability.
(DI-MGMT-80368A, Status Report, Program Status Report, C090)

3.3.2.6 Integrated Baseline Review

The Contractor shall host IBRs as specified in Annex B. The IBR shall establish mutual Government and Contractor understanding of program cost, schedule, and performance requirements.

3.3.2.7 General Equipment Valuation

The Contractor shall provide cost and useful life information for equipment with a cost equal to or greater than $1,000,000 in support of the Government's General Equipment Valuation requirement IAW the Statement of Federal Financial Accounting Standards No. 35.
(DI-FNCL-81565C, Cost Data Summary Report (DD Form 1921), Contractor Cost Data Reporting, C020)

3.3.2.8 Affordability

The Contractor shall provide cost and affordability data and provide insight into the costs of developing, producing, and maintaining the APT System to support the Government's process of developing and maintaining Life Cycle Cost (LCC) estimates for the APT Program as requested by the Government. The Contractor shall also identify LCC drivers and cost reduction opportunities. The Contractor shall support updates to the Program Office Estimate annually.
(DI-MISC-80508B, Technical Report – Study/Services, Affordability Assessment, C146)

3.3.2.9 Long Lead-Time Items for Production

The Contractor shall identify and deliver a report of long lead-time items required to produce the aircraft and GBTS. The Contractor's report shall include all materials, parts, components, and effort that must be procured in advance of the APT Program Milestone C approval, in order to maintain a planned production schedule. The Contractor's report shall include cost information and quantities for all long lead-time items.
(DI-SESS-81758A, Logistics Product Data, LPD for Aircraft, C257)
(DI-SESS-81758A, Logistics Product Data, LPD for Propulsion, C258)
(DI-SESS-81758A, Logistics Product Data, LPD for GBTS, C256)

3.3.3 Small Business Subcontracting Report

The Contractor shall develop and deliver a Small Business Subcontracting Report IAW FAR 52.219-9 (DEVIATION 2013-2014), DFARS 252.219-7003, and Special Contract Provision H003.
(DI-MGMT-81642, Small Business Subcontracting Report, Small Business Utilization, C104)

3.3.4 Government Furnished Property (GFP) Management/Government Furnished Information (GFI)/Government Furnished Equipment (GFE)

The Contractor shall provide a comprehensive list of all GFP, GFI and GFE required, with associated quantities and need dates based on forecasts or milestones. The Contractor shall provide written notification to the Government of any GFP, GFI, and GFE required 45 days prior to the required need-by date to execute the contract in sufficient time to allow the Government to take appropriate actions to acquire the information.
(DI-MGMT-81453A, Data Accession List (DAL), C100)

3.3.4.1 Government Furnished Equipment (GFE)

In the event that the Contractor requires GFE, the Contractor shall manage GFE IAW *FAR* 52.245-01, and *FAR* 52.245-9. Additionally, the Contractor shall comply with DFARS clauses 252.245-7001, 252.245-7002, 252.245-7003, 252.245-7004, 252.211-7007 and *Procedures Guidance, and Information (PGI)* 245.102-70, *PGI* 245.103-71, *PGI* 245.103-72 and *PGI* 245.105. The Contractor shall notify the Government of any issues dealing with GFE to allow the Government to take appropriate reporting and corrective actions as required. The Contractor shall enter all GFE transactions in an Air Force Accountable Property System of Record (APSR) and track the location and condition of each item. The Contractor shall support a Government annual physical inventory of all GFE to ensure 100 percent accountability.

3.3.4.2 Financial Improvement and Audit Readiness

The Contractor shall comply with all Financial Improvement and Audit Readiness reporting requirements regarding Government Furnished Material. The Contractor shall use manual reporting until an Air Force APSR is available. Once an Air Force APSR is available the Contractor shall utilize an accountability system that is compatible with an Air Force APSR.
(DI-MGMT-80259, Physical Inventories Report, Financial Improvement and Audit Readiness, C001)

3.3.5 Diminishing Manufacturing Sources and Material Shortages (DMSMS) Management

The Contractor shall be responsible for the development of alternate sources of supply/designs for all systems/subsystems, LRUs, SRUs/Shop Replaceable Assemblies (SRU/SRA), component piece parts, PSE, and materials throughout the life of this contract.

3.3.5.1 DMSMS Management Plan (DMP)

The Contractor shall develop, implement, deliver, and maintain the currency of a DMP. The Contractor developed DMP shall include procedures for identifying and controlling DMSMS in the aircraft, GBTS, and PSE and shall include all subcontractors systems/subsystems, LRUs, SRUs/SRAs and components to the piece parts level. The Contractor's DMP shall describe and define the methods and predictive tools that will be used to categorize and quantify identification of DMSMS parts, problem resolution, and a recommended approach for mitigating risks associated with DMSMS throughout the life of the contract. The Contractor's DMP shall establish guidance, assign responsibilities, and set into motion processes to minimize DMSMS impacts to the APT System and ensure continued availability of parts required for the manufacture, production, modification, repair, maintenance, and sustainment support. The Contractor's DMP shall consider the current system configuration, planned system upgrades, modifications, and maintenance requirements. The Contractor's DMP shall be developed IAW DoD DMSMS SD-22 Guidebook guidance. The Contractor's DMP shall identify its business processes and the DMSMS Working Group's (DWGs) responsibilities.
(DI-MGMT-81948, Diminishing Manufacturing Sources and Material Shortages (DMSMS) Management Plan, C117)

3.3.5.2 DMSMS Working Group (DWG)

The Contractor shall establish a DWG IAW DoD DMSMS SD-22 guidebook and Annex A.

3.3.5.3 Diminishing Manufacturing Sources and Material Shortages Surveillance

The Contractor shall flow DMSMS identification, predictive analysis, and resolution responsibilities down to subcontractors and suppliers. The Contractor shall include requirements in purchase orders and commodity agreements for suppliers to notify the Contractor of any pending or future actions to discontinue purchased parts, components, or commodities as regular product lines. The Contractor shall deliver an implementation plan that includes an alert system that involves contact with all the subcontractors and suppliers to obtain all the information necessary to provide proactive DMSMS capabilities.
(DI-MGMT-81949, Diminishing Manufacturing Sources and Material Shortages (DMSMS) Implementation Plan, C119)

3.3.5.4 DMSMS Notification and Impact Assessment

The Contractor shall provide written notification to the Government of all concerns, risks, and issues related to the loss or impending loss (at all tiers) of manufacturers, suppliers, and repair capabilities to include all DMSMS impacts (real and potential) in the performance of this contract. When a DMSMS concern, risk, or issue is identified, the Contractor shall include a DMSMS impact assessment that states whether the issue is an actual or potential problem and

estimate how and when the issue will impact the APT System (e.g., what aircraft production lot buy or serial number and/or when sustainment support will first be affected).
(DI-MISC-80508B, Technical Report – Study/Service, DMSMS Impact Assessment, C150)

3.3.5.5 DMSMS Business Case Analysis (BCA)

The Contractor shall deliver a BCA for all identified DMSMS concerns, risks, and issues. The Contractor's BCA shall determine the immediate and long range impacts to APT production and sustainment based on subject parts/components usage, availability, reparability, and other criteria required. The Contractor's BCA shall accurately predict and report DMSMS cost, schedule, and performance impacts. The Contractor's BCA shall include DMSMS resolution options and a recommended solution.
(DI-MISC-80508B, Technical Report – Study/Service, DMSMS BCA, C151)

3.3.5.6 Diminishing Manufacturing Sources and Material Shortages Health Assessment

The Contractor shall develop, update, maintain, and deliver a detailed component-level (piece parts) DMSMS Health Assessment for all systems/subsystems, LRUs and SRUs in the aircraft, GBTS, and PSE. The Contractor shall deliver a health assessment to reflect the production-representative configuration to the Government at CDR IAW *SD*-22 *DMSMS Guidebook*. In the health assessment the Contractor shall identify and prioritize those components with existing or upcoming (through production) DMSMS availability and supportability concerns, risks, and issues. The Contractor shall report these according to year of impact and include a procurement opportunity window. The Contractor‘s health assessment shall also include the total number of the Contractor/subcontractor/supplier part numbers (to the component piece/parts) analyzed. The Contractor shall categorize these part numbers as number/percent obsolete (no active suppliers), number/percent sole source (one active supplier), and number/percent two or more active sources. The Contractor shall include a health assessment summary detailing the impacts to the health assessment with each ECP submittal.
(DI-MISC-80508B, Technical Report – Study/Services, DMSMS Health Assessment, C152)
(DI-SESS-80639D, Engineering Change Proposal (ECP), C225)

3.3.5.7 Diminishing Manufacturing Sources and Material Shortages Resolution

The Contractor shall identify, qualify, and integrate new or additional sources of replacement parts and software to resolve DMSMS issues in support of aircraft, GBTS, and PSE during development and production. The Contractor shall submit an ECP for any DMSMS resolution that requires a specification change. The Contractor submitted changes shall be forward and backward compatible. The Contractor's DMSMS resolutions shall be accomplished with no change to the contract's firm-fixed-prices.
(DI-SESS-80639D, Engineering Change Proposal (ECP), C225)

3.3.6 Correction of Deficiencies

The Contractor shall correct any deficiencies within scope of the Aircraft and GBTS SS discovered in the APT System components (e.g., air vehicle, GBTS, SE, training materials) during EMD to include the periods of integrated test (DT, OT) through IOT&E. The Contractor shall update all delivered system components and associated documentation, and yet to be delivered system components exercised under this contract to reflect the APT System production configuration established at Final PCA. The Contractor shall also be responsible for updating the APT test assets to correct any deficiencies. The correction of deficiencies shall be accomplished within the scope of the contract.

3.4 System Test and Evaluation

The Contractor shall plan and conduct DT&E, including combined Contractor and Government DT&E, and support the Government in planning and conduct of Government DT&E and OT&E activity. The Contractor shall actively participate and support the APT Program Integrated Test Team (ITT) and associated Test Integrated Product Teams (Test Planning Working Group, Cybersecurity T&E Working Group, OT&E Readiness Certification Working Group, Test WIT/DRB Working Group, Joint Reliability and Maintainability Evaluation Team, GBTS T&E Working Group) IAW Annexes A and B. The Contractor shall develop and implement a comprehensive test plan and schedule (included in the IMS) to maximize program resource efficiencies and reduce test redundancies. The Contractor's test strategy shall utilize combined Contractor and Government DT&E to the maximum extent practicable to verify contractual requirements. The Contractor shall support Government DT&E including an Integrated Systems Evaluation (ISE) and other capability verification test points for the purpose of ensuring readiness for dedicated operational test. The Contractor shall plan and conduct DT&E for required clearances, endorsements, and certifications IAW Annex D.

3.4.1 Developmental Test and Evaluation (DT&E)

The Contractor shall plan, implement, and maintain a developmental test program for the aircraft and GBTS to include System Integration Lab (SIL) testing, aircraft ground and flight tests, ST-2000 based simulator testing, testing of GBTS components, and testing of any necessary SE. The Contractor shall incorporate testing techniques, metrics, and procedures for specification verification (Aircraft SS, GBTS SS, sub-system specifications, and CI/CSCI specifications), airworthiness certification testing, and development and certification of all flight manuals and other TOs required to support DT&E, IOT&E, and fielding. The Contractor shall plan and utilize combined Contractor and Government developmental testing to the maximum extent practicable to verify the product meets contractual requirements. The Contractor shall utilize an integrated Contractor and Government Lead Developmental Test Organization (LDTO) team concept to implement a combined test program in order to facilitate joint approval for test plan technical adequacy, test safety planning, and test execution. The Contractor shall use Edwards AFB as the primary location for combined Contractor and Government developmental ground

and flight testing of the aircraft. The Contractor shall support Government test objectives necessary to reduce program risk and determine system readiness prior to IOT&E (e.g., demonstrate APT end-to-end functionality and performance in a mission representative context).

3.4.1.1 Test Planning

The Contractor's detailed test plans (DTPs) and supporting Test Information Sheets (TIS) shall support test objectives in the Integrated Test Plan (ITP). The Contractor's test plans shall include system and subsystem integration tests to be conducted to verify system and performance requirements and compliance with the APT Airworthiness Certification Basis, and to obtain required system certifications prior to the dedicated operational testing. The Contractor shall implement combined Contractor and Government ground and flight test planning which includes allowance for incorporating Government test requirements and objectives into integrated Contractor/Government test plans (including DTPs and TISs) when appropriate to reduce risk to and/or scope of operational test.

3.4.1.1.1 Integrated Test Plan

The Contractor shall develop (with input from the ITT), coordinate, deliver, implement, update, and maintain the ITP. The Contractor shall support the Government test strategy and processes as outlined in the APT Test Evaluation Master Plan TEMP and incorporate them into the ITP. The Contractor's ITP shall describe the plans for a common test and evaluation (T&E) database capability that enables sharing of test data necessary for independent Government evaluation (including subcontractor data used for subsystem qualification, SS verification, and APT System certifications).
(DI-NDTI-81284, Test and Evaluation Program Plan (TEPP), Integrated Test Plan (ITP), C194)

3.4.1.1.2 Detailed Test Plans

The Contractor shall develop, implement, and deliver Government-approved DTPs for all tests supporting SS verification, airworthiness and other required certifications, and cybersecurity assessments. The Contractor shall submit draft detailed test plans to include test requirements in sufficient time to accommodate Government input prior to formal start of Air Force Test Center technical adequacy approval process IAW Edwards AFB Instruction 99-101. The Contractor shall submit test safety planning and analysis products as an annex to the DTP in sufficient time to support the Air Force Test Center safety approval process IAW AFTCI 91-203. The Contractor's DTPs shall be included as subsequent volumes (Volumes II, III, etc.) under the ITP with the ITP as Volume I.
(DI-NDTI-80566A, Test Plan, Detailed Test Plan, C186)

3.4.1.1.3 Test Information Sheet and Test/Inspection/Demonstration Procedure

The Contractor shall develop and implement Government-approved TISs for aircraft ground and flight test supporting SS verification, airworthiness and other required certifications, and

cybersecurity assessments. The Contractor shall develop and implement Government-approved Test/Inspection/Demonstration Procedures for all other (off-aircraft) tests, inspections and demonstrations supporting SS verification, airworthiness and other required certifications, and cybersecurity assessments. The Contractor shall include TISs and Test/Inspection/Demonstration Procedures as appendices to the DTP volumes.
(DI-QCIC-81536, Test Information Sheet (TIS), C210)
(DI-NDTI-80603A, Test Procedure, Test/Inspection/Demonstration Procedure, C187)

3.4.1.1.4 Test Cards

The Contractor shall support Government development of test cards (detailed procedures for test execution) for aircraft ground and flight testing.

3.4.1.1.5 Test Scheduling

The Contractor shall provide Type-E Access to Contractor DT&E schedules for purposes of Government insight. The Contractor shall actively participate in the combined DT&E scheduling process as required to support test operations at Government facilities. The Contractor shall provide test requirements as input to the combined DT&E scheduling process including near term (one to two weeks) and longer term (one to six months) requirements for resource planning.

3.4.1.1.6 Civil Aircraft Landing Permits for Operations at Military Bases

The Contractor shall comply with the provisions of AFPD 10-10 and AFI 10-1001 for supplying proof of insurance and securing approval for any civil registered aircraft to include test articles and pre-delivered aircraft. The above referenced regulations lay out the criteria and required forms as well as the approval process.

3.4.1.2 Flight Test Releases

The Contractor shall support the Government in obtaining required approvals and releases for the aircraft to include but not limited to MFRs, test plan technical adequacy approvals, test safety approvals, system safety releases, Government Flight Representative (GFR) approvals, and cybersecurity approvals including Interim Authorization to Test (IATT) and ATO. The Contractor shall accommodate Government reviews and oversight of any ground tests or flights accomplished under the Ground and Flight Risk Clause to include functional check flights, engineering test flights, and experimental test flights. The Contractor shall provide Type-C access to aircraft performance and flying quality predictive models in order to obtain test plan technical adequacy and safety approvals (as applicable) necessary to execute combined flight test for independent Government evaluation of data. These models and supporting information shall include: mass properties to include 3-Axis center of gravity and inertias; simulation aerodynamic model; simulation propulsion model; In-flight thrust deck; 6-Degree of Freedom simulations

used to predict the aircraft stability, control and performance characteristics; and a full Flight Control System description.

3.4.1.3 Contractor Developmental Test and Evaluation

The Contractor shall plan and conduct discretionary risk reduction and systems integration / engineering testing to ensure readiness for timely and efficient combined DT&E operations. The Contractor shall accommodate Government participation in Contractor discretionary DT&E when reasonably practicable to ensure readiness for combined DT&E operations. The Contractor shall allow the Government to observe and participate in all Contractor development testing when reasonably practicable, including allowance for properly trained and qualified Government personnel at the controls of test aircraft during ground and flight test. The Contractor shall incorporate opportunities for Government verification of TOs during Contractor development testing.

3.4.1.4 Combined Testing

The Contractor shall integrate Government personnel into test planning and operations, for the purpose of facilitating combined Contractor and Government verification of requirements. The Contractor shall accommodate and facilitate Government review and approval of associated test plans, safety plans, and test procedures involving Government resources (personnel, facilities, and/or equipment) prior to test execution. The Contractor shall develop, formalize, implement, and document in the ITP a Government-approved, combined Contractor / Government concept of operations prior to CDR, to include combined test force organizational roles and responsibilities, capability verification planning, infrastructure agreements, data sharing agreements, the flight release process, mutual adaptation of existing processes to accommodate aircrew and engineering involvement, Technical Review Board and Safety Review Board support and timelines, aircrew scheduling and training, changes to previously approved test and safety plans, DT&E execution metrics, test card and test procedure approvals, and tracking of deficiencies found during DT&E. The Contractor shall formalize agreements with a combined test force charter and operations directive to be incorporated in the ITP.
(DI-NDTI-81284, Test and Evaluation Program Plan (TEPP), Integrated Test Plan (ITP), C194)

3.4.1.5 Operating Procedures and Manuals

The Contractor shall provide preliminary aircraft operating procedures and operating manuals to the Government. These manuals shall include, but are not limited to, Electromagnetic Interference/ Electromagnetic Compatibility, functional check flight, avionics manuals, embedded training, and normal aircraft and systems operations. The Contractor shall provide the Contractor Operating Procedures IAW DFARS 252.228-7001 and the combined Defense Contract Management Agency Instruction (DCMA INST) 8210.1C and AFI 10-220.
(TM-86-01P, Technical Manual Contract Requirements, A007)

3.4.1.6 System Integration Lab Tests

The Contractor shall perform SIL testing to produce aircraft and GBTS software releases, verify SS requirements, support cybersecurity test objectives, and achieve USAF Airworthiness certification IAW the SSs, airworthiness certification criteria, and other test planning documents (e.g., DTP, TIS).

3.4.1.7 Airworthiness Certification Tests

The Contractor shall perform testing required to support USAF Airworthiness Certification and provide the Government Type-C Access to all artifacts produced during developmental testing and any other artifacts that are necessary to support the certification(s). The Contractor shall ensure criteria compliance verification is integrated into the DT&E program.

3.4.1.8 Aircraft Ground Tests

The Contractor shall perform aircraft ground tests to verify the SS and airworthiness requirements IAW SS and airworthiness certification criteria. The Contractor shall perform aircraft ground tests to obtain any certifications required for fielding.

3.4.1.9 Aircraft Flight Tests

The Contractor shall perform aircraft flight tests to verify SS and airworthiness requirements IAW SS and airworthiness certification criteria. The Contractor shall perform aircraft flight tests to obtain any certifications required for fielding.

3.4.1.10 Engineering and Manufacturing Development (EMD) Aircraft

The Contractor shall deliver five (5) production-relevant aircraft during EMD to support both developmental and operational test requirements. The Contractor shall deliver EMD aircraft to the designated Government flight test facility for use in combined Contractor/Government DT&E operations.

3.4.1.11 Test Facility Support

The Contractor shall generate or collect any information necessary to complete facility change requests to existing Government test facilities for purposes of APT System or subsystem testing. The Contractor shall generate or collect the information necessary to complete local environmental impact analysis due to test operations, as required by USAF procedures at test operating locations. The Contractor shall make all this information available on the DAL. (DI-MGMT-81453A, Data Accession List (DAL), C100)

3.4.1.12 Ground Based Training System (GBTS) Tests

The Contractor shall develop and deliver test plans for the GBTS. The Contractor shall perform GBTS testing to include ATDs and GTDs to verify GBTS SS requirements and obtain any necessary certifications. The Contractor shall conduct DT&E using the ST-2000 process as a

guide with Government participation to verify compliance with the requirements of the applicable specification(s). The Contractor shall support Government System Performance Assessments of ATDs and GTDs prior to Contractor engineering verification testing. The Contractor shall support Government System Performance Evaluation(s) (SPE) of ATDs and GTDs and a Government chaired Ready-To-Ship Assessment prior to shipment to the designated user location. The Contractor shall support Government Functional Mission Tests (FMT) and initial Simulator Certification (SIMCERT) of ATDs (WST, OFT, UTD) and GTDs (EST, AGET, Part Task Trainer [PTT]) after installation at user location(s) and prior to final acceptance (via DD Form 250). The Contractor shall provide the listed support to include: all instrumentation, data logs, SE, test equipment, spares, repair parts, technical data, and documentation required for Government testing of the GBTS.
(DI-NDTI-80566A, Test Plan, Detailed Test Plan, C186)

3.4.1.13 Test Readiness Review (TRR)

3.4.1.13.1 Aircraft Test Readiness Review

The Contractor shall plan and host the aircraft TRR to assess readiness to begin combined DT&E including Government verification of contractual requirements IAW Annex B. The Contractor shall perform the TRR IAW IEEE 15288.2-2014 as tailored by the SEMP and IMP. The Contractor shall include readiness of the aircraft and SIL to accomplish any system level testing of specification requirements. The aircraft TRR may be accomplished in an incremental manner if necessary.

3.4.1.13.2 Ground Based Training System Test Readiness Review

The Contractor shall conduct TRRs prior to commencement of SPE and Functional Mission Testing (FMT)/SIMCERT of the ATDs and GTDs, in order to ascertain readiness and make the decision to commence the Government evaluations supporting verification, validation, and final acceptance. The Contractor shall perform the TRRs IAW IEEE 15288.2-2014 as tailored by the SEMP and IMP. The Contractor shall provide evidence of readiness at each TRR including:

(a) Confirmation that priority 1 and 2 discrepancies discovered during Contractor verification testing have been corrected;
(b) Confirmation that all training devices have traceability to the RTM;
(c) Evidence that a deficiency reporting system is in place;
(d) Delivery of an updated Training Task Traceability Matrix (T3M)

3.4.1.14 Aircraft and GBTS Special Test Instrumentation

The Contractor shall design, develop, install, maintain, and remove instrumentation systems that support Contractor and Government aircraft ground, flight, and GBTS testing. The Contractor shall instrument each aircraft as necessary to support the test objectives in the ITP and DTPs. The Contractor shall use MIL-STD-27733 as a guide for marking, safety, airworthiness, and

configuration control practices of temporary non-standard modifications to aircraft supporting developmental T&E. The Contractor shall accommodate Government participation in the instrumentation design reviews, formulation of operating procedures, and installation in order to facilitate test planning and safety approvals IAW Annex B. The Contractor shall design, develop, and deliver a temporary modification package for each aircraft instrumentation kit, IAW AFI 63-101/20-101, AFI 63-131, AFMCI 21-126, and AFMCI 21-126 Edwards AFB Supplement 1. The Contractor shall update the temporary modification package(s) as necessary during performance of EMD activities. The Contractor shall develop and deliver a technical data package associated with special test instrumentation on board the designated aircraft to be used for long term development test purposes by the APT Program.
(DI-MISC-81562, Temporary Non-Standard Modification Documentation and Marking Requirements for Test Equipment in Aerospace Vehicles and Related Ground Support Equipment, Temporary Aircraft Modification Data Package for One EMD Aircraft, C181)
(DI-MISC-81562, Temporary Non-Standard Modification Documentation and Marking Requirements for Test Equipment in Aerospace Vehicles and Related Ground Support Equipment, T2 Modification for all EMD Aircraft, C182)

3.4.1.15 Aircraft and Ground Based Training System Configuration Updates

The Contractor shall update all five EMD aircraft, and all GBTS assets to the most current production representative baseline (IOT&E) configuration NLT ninety calendar (90) days prior to the start of dedicated IOT&E. The Contractor's update shall include installation, testing, and logistics support element changes necessary to field these assets including TO's, manuals, supply/provisioning data updates, PSE updates, and training course updates.

3.4.1.15.1 Engineering and Manufacturing Development (EMD) Aircraft Instrumentation Removal

The Contractor shall remove special test instrumentation from the four EMD production representative aircraft designated as primary OT&E test assets prior to their arrival at the IOT&E location.

3.4.1.15.2 Post-Engineering and Manufacturing Development Test Aircraft

The Contractor shall ensure one (1) of the five EMD aircraft is maintained in a configuration that will support post-Milestone C developmental T&E needs including closure of SVR/FCA, and any verification of correction of deficiencies. The Contractor shall ensure that at the completion of DT&E, the designated aircraft is configured to support projected long-term APT System development test needs to include verification of future OFP upgrades. The Contractor shall provide and install any special instrumentation required on the one (1) designated DT&E aircraft along with necessary documentation for the Government to operate and maintain. The Contractor shall provide and deliver training on operations and support of the aircraft test

instrumentation. The Contractor shall continue to support airworthiness certification of this aircraft until all verification and certification activities have completed.
(DI-ILSS-80872, Training Materials, Aircraft Special Instrumentation Training Materials, C048)

3.4.1.15.3 Ground Based Training System Instrumentation Removal

The Contractor shall remove special test instrumentation from GBTS devices prior to their utilization in IOT&E familiarization period preceding formal IOT&E activities.

3.4.1.16 Cybersecurity Test and Evaluation

The Contractor shall integrate cybersecurity T&E into DT&E activities and support planning and execution of Government cybersecurity T&E events. The Contractor shall integrate RMF activities as practicable into DT&E planning and execution IAW DoDI 5000.02, DoDI 8500.01, and DoDI 8510.01. The Contractor shall use the *DoD Cybersecurity Test and Evaluation Guidebook* as a guide.

3.4.1.16.1 Assessment of Cybersecurity Requirements

The Contractor shall perform characterization and identification of the APT cyber-attack surfaces with updates as needed to support CDR. The Contractor shall provide a report of the assessment of cybersecurity requirements to include analysis of the system's exposure (attack surfaces) to cyber vulnerabilities with controls in place.
(DI-MISC-80508B, Technical Report – Study/Services, Assessment of Cybersecurity Requirements, C128)

3.4.1.16.2 Cybersecurity Vulnerability

The Contractor shall support independent cybersecurity cooperative vulnerability identification, cooperative vulnerability assessments, adversarial assessments, and testing on the APT System, to include subsystems, components, PSE, embedded systems, GBTS, mission planning interfaces, maintenance data processing equipment and interfaces, and any peripheral data transfer equipment. The Contractor shall provide technical support of independent Government cybersecurity vulnerability and penetration assessments (e.g., Blue and Red Team activity) and associated test events necessary to evaluate the APT System's cybersecurity in a mission context. The Contractor shall support cybersecurity kill chain analysis and adversarial assessment testing necessary to determine any APT critical vulnerabilities and their impact on mission objectives.

3.4.1.16.3 Cybersecurity Test

The Contractor shall develop and deliver the Government cybersecurity test plans (DTPs, TISs), and test reports for approval.
(DI-MGMT-81844, Information Assurance (IA) Test Plan, Cybersecurity Test Plan, C113)
(DI-QCIC-81536, Test Information Sheet (TIS), C210)
(DI-NDTI-80809B, Test/Inspection Report, Cybersecurity Test Report, C193)

3.4.1.16.4 Systems Architecture

The Contractor shall provide the Government high fidelity systems architecture documents as required for DT&E and OT&E planning.
(DI-MISC-80508B, Technical Report – Study/Services, System Architecture Document, C125)

3.4.1.17 Support of Integrated System Evaluation

The Contractor shall support Government ISE flights and related GBTS activity prior to IOT&E familiarization period to include POS for materiel and maintenance needs, input to and participation in Government test planning, provision of on-site FSRs, provision of any requested mission planning, maintenance, and logistical support for launch, recovery, debriefing, repair of aircraft and/or GBTS, and deficiency/anomaly analysis. The Contractor shall allocate schedule and support a dedicated ISE ground and flight test series lasting up to 30 days including daily operations with up to four (4) EMD aircraft.

3.4.1.18 Common Test & Evaluation Data Repository

The Contractor shall provide Type-C Access to a common T&E data repository for shared developmental test data enabling independent evaluation by the Government. The Contractor shall include and make accessible engineering unit data on the Common T&E Database within five calendar days of test completion. The Contractor shall include and make accessible artifacts on the common T&E data repository necessary to support required certifications. The common T&E data repository shall include, but is not limited to, all reported flight discrepancies, scheduled and unscheduled maintenance events, supply and spares usage, Joint Reliability Maintainability and Evaluation Team (JRMET) reliability and maintainability data, ground and flight test quick look test reports, and current daily, weekly, and forecasted test schedules at Government and Contractor facilities. The Contractor shall provide training and training material to the Government on the use of the common T&E data repository, to include a Users' Guide with Data Dictionary containing sufficient detail to enable independent evaluation of data.
(DI-ILSS-80872, Training Materials, T&E Database Training Materials, C050)

3.4.1.19 Integrated Test Event Matrix (ITEM)

The Contractor shall develop and maintain an ITEM to provide bi-directional traceability between SSs and test requirements (DTPs, TISs, and test points). The Contractor's ITEM shall be included on the common T&E database or on a pre-existing system with equivalent Type-C Government Access. The Contractor shall develop the ITEM as a resource-loaded, event-based management system (i.e., considers event complexity, scheduling success rate, and a time phased comparison of planned and actual accomplishments) that traces APT requirements to test points to include tracking of test point accomplishment.
(DI-MISC-80508B, Technical Report – Study/Services, Integrated Test Event Matrix (ITEM), C163)

3.4.1.20 Developmental Test & Evaluation Test Data

The Contractor shall collect, analyze, and provide the Government Type-C Access to all test data from DT&E activity for tests identified in ITP, DTP, and TISs.

3.4.1.21 Developmental Test & Evaluation Test Reporting

The Contractor shall generate test reports for activities contained in the ITP, DTPs, and associated TISs or test procedures. The Contractor shall document and deliver test reports for system and CI/subsystem-level tests that are conducted to verify specification performance and support certifications (e.g., airworthiness certification). The Contractor shall submit an annual summary of test activity as well as an interim DT&E report supporting Milestone C. The Contractor shall provide a concise Quick Look Report summarizing mission accomplishments via electronic means (i.e., email to Program Office) within 36 hours following completion of each test event (e.g., aircraft test sortie) performed in accordance with a DTP.
(DI-NDTI-80809B, Test/Inspection Report, C192)
(DI-NDTI-81284, Test and Evaluation Program Plan (TEPP), Integrated Test Plan (ITP), C194)

3.4.1.22 Modeling and Simulation (M&S)

The Contractor shall develop, implement, and maintain a Modeling and Simulation Support Plan (MSSP). The Contractor shall ensure the MSSP describes the key APT System models and simulations and their intended use to verify requirements and to address developmental and operational test objectives; identifies remaining data requirements and test events for verification and validation of each key model or simulation; explains how test scenarios will be supplemented with M&S; and supports any Government accreditation of key APT System models and simulations used to satisfy developmental and operational test objectives.
(DI-MGMT-80004A, Management Plan, Modeling and Simulation Support Plan, C085)

3.4.1.23 Developmental Test & Evaluation of External Stores

The Contractor shall procure and deliver external stores as described in the Aircraft SS, Table 3 - 34, loadouts #1-2. The Contractor shall deliver one of each of these external stores in conjunction with each of the first three EMD Aircraft deliveries.

3.4.1.24 Developmental Test & Evaluation of Escape System

The Contractor shall plan, conduct, and report on demonstrations, equivalency analyses, and testing of the escape system necessary to verify compliance with the requirements of the Aircraft SS and support USAF airworthiness certification.

3.4.1.24.1 Escape System Qualification Test Plan

The contractor shall develop a qualification test plan to be included in the ITP identifying the test activities needed to verify that the ejection seat components meet the requirements in the Aircraft

SS and support overall airworthiness certification(s). The Contractor shall submit detailed test plans for each qualification activity. The Contractor shall submit any previous qualification testing and/or analysis to the Government for review and approval to avoid potential test redundancies.

3.4.1.24.2 Compatibility Sled Testing

The Contractor shall plan, conduct, and report on compatibility sled testing necessary to verify compliance with the Aircraft SS. The Contractor shall conduct compatibility testing using JSSG-2010-11, Appendix A as a guide. The Contractor shall utilize a Government Test Facility for sled testing to facilitate independent test reviews and evaluation of data unless determined to be impracticable by the Government. The Contractor shall submit a list of any test resources necessary for the Government to provide via the Test Facility Requirements Document (TFRD) to include four (4) anthropometric manikins (two Case 1 size [103 lbs], and two Case 6 size [245 lbs]) with associated instrumentation required to test the range of anthropometric accommodation requirements in the Aircraft SS, Table 3-5). The Contractor shall deliver a representative aircraft forebody for sled testing and provide all related test assets to include production configured ejection seats and associated hardware, canopies, and pyrotechnics. The Contractor shall provide instrumentation for the escape system and aircraft integration tests. The Contractor's sled forebody shall accurately represent the APT aircraft fuselage shape and replicate actual airflow over the cockpit during dynamic sled tests. The Contractor shall ensure the sled forebody is capable of yaw to the maximum side slip angle of the escape system (i.e., the combination of airspeed and yaw angle that produces the worst case side loads). The Contractor shall submit a final test report for each test event. The Contractor shall perform Marginality of Success (MOS) analyses on all tests and provide in the test reports.
(DI-NDTI-80566A, Test Plan, Detailed Test Plan, C186)
(DI-NDTI-80809B, Test/Inspection Report, C192)

3.4.1.25 Specification Requirements Verification Analysis

The Contractor shall generate analysis reports to show compliance with specification requirements for which analysis is the verification method.
(DI-MISC-80508B, Technical Report – Study/Services, Verification Analysis Reports, C127)

3.4.2 Operational Test and Evaluation Support

3.4.2.1 Operational Assessments (OA)

The Contractor shall accommodate and support two Government-conducted OAs each consisting of up to ninety (90) calendar days of Air Force Operational Test & Evaluation Center (AFOTEC) data collection concurrent with ongoing DT&E and development/design activity. The Contractor shall host Government OA team(s) for assessment visits during each OA period. The Contractor shall support ground and flight test activity to accomplish operational test objectives during OA-

2. The Contractor shall accommodate the timing of the OAs specified in the TEMP (OA-1 is anticipated to consist of a review of existing system design and planning artifacts starting within ninety (90) days after PDR. OA-2 is anticipated to include approximately fifteen (15) test sorties in conjunction with DT&E operations starting approximately nine months prior to Milestone C).

3.4.2.2 Initial Operational Test & Evaluation (IOT&E)

The Contractor shall ensure four aircraft are available, configured, and delivered for Government use during IOT&E. The Contractor shall provide GBTS equipment including but not limited to the following: two WSTs, one UTD, one OFT, one AGET, one EST, appropriate course materials, and part task trainer(s) to support IOT&E. The Contractor shall provide engineering and analytical support to address aircraft and GBTS mission critical issues, deficiencies, and unexpected events discovered during IOT&E. The Contractor shall provide aircraft and simulator operations manuals, and maintenance manuals as required for user operations. The Contractor shall provide technical assistance for planning and execution of an independent cybersecurity adversarial assessment on the APT System and associated interfaces in conjunction with IOT&E, culminating in approximately fourteen (14) days of dedicated Government test activity.
(TM-86-01P, Technical Manual Contract Requirements, A007)

3.4.3 Test and Evaluation Support

3.4.3.1 Pre-Operational Support (POS)

The Contractor shall provide POS through the completion of all EMD verification and certification activities. The Contractor's POS shall include performance of all levels of maintenance, repair, supply chain management, and materiel support for five EMD aircraft, associated SE, Test, Measurement and Diagnostic Equipment (TMDE), and GBTS components. The Contractor shall provide POS at Contractor facilities and Government test sites. The Contractor shall provide POS for delivered aircraft and GBTS to meet DT&E, training, and concurrent OT&E objectives to include, but not limited to, SS verification, airworthiness and other certifications, training requirements for DT&E and OT&E aircrews, integrated systems evaluations, Operational Assessments, and resolution of anomalies and deficiencies. The Contractor shall provide mission essential PSE and common support equipment (CSE) for DT&E operations as necessary to ensure continuous availability. The Contractor shall document discrepancies in verified technical orders and submit Publication Change Requests (PCR) to the Government using either the AFTO Form 22 or AFTO Form 27. The Contractor's PCR format is acceptable if it contains all of the same data as the AFTO Form 22 or AFTO Form 27 and is approved by the Government.

3.4.3.1.1 Pre-Operational Support Fuel

The Contractor shall provide fuel for all ground and flight testing accomplished at Contractor and subcontractor locations, and any other Contractor-chosen locations other than Government facilities.

3.4.3.1.2 Pre-Operational Support Reliability and Maintainability

The Contractor shall collect reliability and maintainability data to include, but not limited to, all reported flight discrepancies, scheduled/unscheduled maintenance, supply/spares usage, and JRMET reliability and maintainability data. This data shall be input and made available to the Government through the Common T&E Database System.

3.4.3.1.3 Pre-Operational Support Spares

The Contractor shall provision for and provide spares required to support up to five (5) aircraft during DT&E activity. The Contractor shall provide and make available spares to support Government evaluations of organic O-level maintenance of the aircraft.

3.4.3.1.4 Developmental Test & Evaluation Support

During Government DT&E events, the Contractor shall remove and install LRUs and other components and perform related maintenance operations as required to support ground and flight test activity. The Contractor shall support the Government in performing TO verification during scheduled and unscheduled aircraft maintenance activities. The Contractor shall support the Government in scheduling and execution of TO verification activities during EMD. The Contractor shall provide PSE and CSE as required to support Government TO verification activities.

3.4.3.1.5 Mishap Investigations, Accident Investigation Boards, and Safety Investigation Boards

The Contractor shall support any Mishap Investigations, Accident Investigation Board(s), and Safety Investigation Board(s).

3.4.3.1.6 Non-Delivered Test Articles

The Contractor shall plan for and implement disposition of non-delivered test articles and disposal of residual EMD test items.

3.4.3.1.7 EMD Pre-Operational Support Maintenance Management & Practices

The Contractor shall conduct and manage aircraft maintenance for EMD aircraft IAW AFI 21-101, AFI 21-101 AFMC Supplement, and AFI 21-101 Edwards AFB Supplement at the Government DT&E location(s). The Contractor shall support the following Government host unit-led programs and procedures to include but not limited to: Maintenance Discipline, Tool and Equipment Management/Accountability, Foreign Object Damage (FOD) Prevention,

Dropped Object Prevention (DOP), Hangar Queen Aircraft, Materiel Management Support, Impoundment Procedures, Quality Assurance, Facility Housekeeping and Contamination Control, Aircraft Grounding, Cannibalization Program, and Maintenance Plans, Scheduling, and Documentation (PS&D). The Contractor shall maintain the Aircraft and Engine Logbooks. (DI-MNTY-81067, Logbooks and Records, Aircraft and Aeronautical Equipment, C185)

3.4.3.1.7.1 EMD Pre-Operational Support Maintenance Documentation

The Contractor shall utilize the Integrated Maintenance Data System (IMDS) at the Government DT&E location(s) and update the status and possession of the aircraft with the Maintenance Operations Control Center (MOCC) IAW AFI 21-103 and TO 00-20-1. The Contractor shall utilize and maintain the following AFTO Forms IAW TO 00-20-1 for each aircraft: 781, 781J, 781K and AFTO Form 95. Additional aircraft forms that shall be used include 781A, 781B, 781C, 781E, 781F, 781G, 781H, 781M and 781P.

3.4.3.1.7.2 EMD Pre-Operational Support Maintenance and Flying Scheduling

The Contractor shall support the annual, quarterly, monthly, weekly, and daily flying and maintenance scheduling process with the 412th Test Wing and record deviations IAW AFI 21-101, AFMC Supplement and AFI 21-101 Edwards AFB Supplement.

3.4.3.1.7.3 EMD Pre-Operational Support Maintenance Meetings

The Contractor shall attend the daily maintenance stand-up and production meetings at the Government DT&E location(s) and brief, at a minimum, the flying recap, corrective actions, aircraft status, estimated times in commission (ETICs), and estimated delivery dates (EDDs) for mission capable (MICAP) parts.

3.4.3.2 Initial Operational Test & Evaluation Pre-Operational Support

The Contractor shall provide POS at the IOT&E location including performance of all necessary levels of maintenance, repair, supply chain management, and material support for the APT Aircraft, SE, and GBTS components. The Contractor shall support planning and on-site preparations to accomplish delivery and initial beddown of IOT&E test assets at the designated IOT&E location (anticipated to be JBSA-Randolph, Texas). The Contractor shall provide POS during the user familiarization period (starting approximately 120 days prior to formal start of IOT&E) and IOT&E activities (9-month execution phase for flying operations and cybersecurity Phase 6 adversarial assessment). The Contractor shall provide FSR support as part of POS for the duration of the user familiarization period and formal IOT&E activities. The Contractor shall accommodate Government evaluations of organic O-level maintenance of the aircraft using Government personnel as selectively scheduled by the Government during IOT&E familiarization period and formal IOT&E operations. The Contractor shall accommodate Government's IOT&E evaluation of selected maintenance procedures performed by Government personnel. The Government performed procedures will include, but are not limited to, aircraft

launch, recovery, repair, maintenance, servicing, inspections, and the removal/installation of LRUs. The Contractor shall provide POS for night pattern operations at a secondary IOT&E location (anticipated to be Laughlin AFB, TX) for one week per month up to four total months. The Contractor shall support up to twenty cross country operational test missions as required to successfully recover the aircraft back to the primary IOT&E location. The Contractor shall provide mission essential PSE and CSE for IOT&E operations as necessary to ensure continuous availability.

3.4.3.2.1 IOT&E Reliability & Maintainability Pre-Operational Support

The Contractor shall collect reliability and maintainability data to include, but not limited to, all pilot reported flight discrepancies, scheduled and unscheduled maintenance, supply and spares usage, and JRMET reliability and maintainability data. The Contractor's data shall be available to the Government through the Common T&E Database System.

3.4.3.2.2 Initial Operational Test & Evaluation Pre-Operational Support Spares

The Contractor shall provision for and provide spares (including engines) required to support up to four (4) aircraft during the user familiarization period and formal IOT&E activity. The Contractor shall provide and make available spares to support Government evaluations of organic maintenance of the aircraft.

3.4.3.2.2.1 Initial Operational Test & Evaluation Engine Spares

The Contractor shall deliver two (2) engines (4 if a dual engine aircraft) to the primary IOT&E location prior to first APT aircraft arrival. The engines will be used for Government purposes other than POS, unless otherwise directed by the Government.

3.4.3.2.2.2 Initial Operational Test & Evaluation Engine Spares Support

The Contractor shall maintain the Government-owned engines throughout period of performance of POS. The Contractor shall deliver all associated maintenance records to the Government at the completion of POS.
(DI-MNTY-81067, Logbooks and Records, Aircraft and Aeronautical Equipment, C185)

3.4.3.2.3 Operational Test Pre-Operational Support

The Contractor shall provide POS to four (4) APT Aircraft in support of user training events conducted over and above Operational Test requirements during the user familiarization period and formal IOT&E activities, up to 24 sorties per month.

3.4.3.2.4 IOT&E Pre-Operational Support Maintenance Management & Practices

The Contractor shall manage aircraft maintenance for IOT&E aircraft IAW AFI 21-101, AETC Supplement at the IOT&E location(s). The Contractor shall support the following Government host-unit programs and procedures IAW AFI 21-101, AETC Supplement, and AETC Instruction

(AETCI) 21-105, to include but not limited to: Maintenance Discipline, Tool and Equipment Management/Accountability, FOD) Prevention, DOP, Hangar Queen Aircraft, Materiel Management Support, Impoundment Procedures, Quality Assurance, Facility Housekeeping and Contamination Control, Aircraft Grounding, Cannibalization Program, and Maintenance Plans, Scheduling, and Documentation (PS&D). The Contractor shall maintain the Aircraft and Engine Logbooks.
(DI-MNTY-81067, Logbooks and Records, Aircraft and Aeronautical Equipment, C185)

3.4.3.2.4.1 IOT&E Pre-Operational Support Maintenance Documentation

The Contractor shall utilize the IMDS at the IOT&E location and update the status and possession of the aircraft with the MOCC IAW AFI 21-103 and TO 00-20-1. The Contractor shall utilize and maintain the following AFTO Forms IAW TO 00-20-1 for each aircraft: 781, 781J, 781K, and AFTO FORM 95. Additional aircraft forms shall be used include 781A, 781B, 781C, 781E, 781F, 781G, 781H, 781M and 781P.

3.4.3.2.4.2 IOT&E Pre-Operational Support Maintenance and Flying Scheduling

The Contractor shall support the annual, quarterly, monthly, weekly, and daily flying and maintenance scheduling process with AFOTEC, the AETC operations squadron, and the local maintenance directorate at the IOT&E location and record deviations IAW AFI 21-101, AETC Supplement.

3.4.3.2.4.3 IOT&E Pre-Operational Support Maintenance Meetings

The Contractor shall attend the daily maintenance directorate stand-up and production meetings at the IOT&E location and brief the flying recap, corrective actions, aircraft status, ETICs, EDDs for MICAP parts.

3.4.3.2.4.4 Pre-Operational Support Exit Criteria

The Contractor shall return the EMD aircraft to Fully Mission Capable (FMC) status prior to the completion and termination of POS. The Contractor shall complete the steps to transfer each EMD aircraft as specified in TO 00-20-1, Chapter 8, with the Contractor's POS acting as the losing organization and the host Government organization (i.e., AFMC or AETC) as the recipient, prior to the completion and termination of EMD POS.

3.4.3.3 Test & Evaluation Working Groups

3.4.3.3.1 Test Planning Working Group

The Contractor shall support the Test Planning Working Group IAW Annex A.

3.4.3.3.2 Operational Test & Evaluation (OT&E) Readiness Certification Working Group

The Contractor shall support the OT&E Readiness Certification Working Group IAW Annex A.

3.4.3.3.3 GBTS Test & Evaluation Working Group
The Contractor shall support the GBTS T&E Working Group IAW Annex A.

3.4.3.3.4 Cybersecurity Test Evaluation Working Group
The Contractor shall support the Cybersecurity T&E Working Group IAW Annex A.

3.4.3.3.5 Joint Reliability and Maintainability Evaluation Team
The Contractor shall support the JRMET IAW Annex A.

3.4.3.4 Test Meetings and Reviews
The Contractor shall support all test meetings and reviews IAW Annex B.

3.4.4 Test Facilities
The Contractor shall deliver a TFRD that provides detailed requirements for all requested Government test facilities and other resources needed to support ITP identified tests. The Contractor's TFRD shall include quantities, need dates, and durations of use for each required facility/resource. The Contractor shall use Government T&E capabilities unless an exception can be justified as cost-effective to the Government.
(DI- FACR-80810A, Test Facilities Requirements Document (TFRD), C018)

3.4.5 Production Related Testing and Evaluation
The Contractor shall perform production acceptance testing to include first article tests, pre-production qualification tests, production qualification tests, and production acceptance test and evaluation. The Contractor shall provide engineering and analytical support for any post-IOT&E Follow-on Operational T&E that takes place within 24-months of first LRIP aircraft delivery and is required due to EMD deficiency corrections. The Contractor shall maintain and administer a common T&E database capability as a single-point electronic repository, or provide a single point Type-C Access to pre-existing systems, for shared test data enabling independent evaluation by the Government as necessary during the production phase of the program. The Contractor shall provide Type-C Access to the database or a single-point Type-C Access location to required systems and shall include current production test schedules and reporting from first article tests, pre-production qualification tests, production qualification tests, and production acceptance tests.

3.5 Ground Based Training System (GBTS)

3.5.1 Working Group Participation and Support
The Contractor shall support GBTS working groups IAW Annex A.

3.5.1.1 Training Planning Team (TPT)

The Contractor shall support and participate in the TPT per AFI 36-2251 and IAW Annex A.

3.5.1.2 Ground Based Training System Development Working Groups (GDWG)

The Contractor shall support GDWG meetings, IAW Annex A which shall occur in conjunction with required reviews and meetings wherever possible. The Contractor shall use this group to validate GBTS IMI products against the designed curriculum.

3.5.1.3 Database Working Group

The Contractor shall support Database Working Group (DBWG) meetings, IAW Annex A which shall occur in conjunction with required reviews and meetings wherever possible. The Contractor shall present recommended new airfield models, additions, changes, and improvements to the current visual database, and problems encountered for consideration and resolution by the DBWG.

3.5.1.4 Training System Configuration Working Group

The Contractor shall support the Training System Configuration Working Group (TSCWG) which is tasked with change and baseline management of the GBTS IAW Annex A. The Contractor and the Government shall co-chair and preside over the TSCWG. The Government has authority to implement and direct TSCWG taskings via submission of an Instructional Change Request (ICR) and documented in a Training System Change Order (TSCO). In conjunction with each TSCWG, the Contractor shall present its findings and recommendations resulting from previous TSCWG taskings.

3.5.1.5 Ground Based Training System Site Activation Working Group

The Contractor shall support the Site Activation Working Group (SAWG), IAW Annex A, with appropriate personnel to include but not limited to facility engineers, FSRs, and/or IMI and simulator installation team members. The SAWG may occur independent of the SATAF activities.

3.5.2 Ground Based Training System Training System Products

The Contractor shall design, develop, maintain, update, document, integrate, test, produce, deliver, and support the GBTS. The Contractor shall flow down applicable program plans and processes to training system subcontractors and suppliers, and conduct formal technical reviews IAW Annex B. The Contractor shall provide a Training Equipment Summary for each of the GBTS components as described in the GBTS SS.
(DI-MISC-81184A, Training Equipment Summary, GBTS Training Equipment Summary, C165)

3.5.2.1 Weapon System Trainer

The Contractor shall design the WST IAW the GBTS SS. The Contractor shall integrate, test, manufacture, deliver and install WSTs. The Contractor shall design the GBTS Simulator Debriefing Station IAW the GBTS SS. The Contractor shall integrate, test, manufacture, deliver and install GBTS Simulator Debriefing Station. The Contractor shall perform the engineering tasks necessary to integrate WST and Simulator Debriefing Station system hardware and software. The Contractor shall provide a list of training faults inserted for training purposes. The Contractor shall deliver an Instructor Utilization Handbook (IUH) for the WST and the Simulator Debriefing Station.
(DI-IPSC-81431A, System/Subsystem Specification (SSS), GBTS Subsystem Specification, C054)
(DI-SDMP-81493A, Program-Unique Specification Documents, GBTS CI Performance/Detail Specification, C219)
(TM-86-01P, Technical Manual Contract Requirements, A007)
(DI-PSSS-81527C, Training System Support Document, Instructor Utilization Handbook, C202)
(DI-ILSS-80502, List of Faults Inserted for Training Purposes, ATD & GTD Malfunction List, C038)

3.5.2.2 Operational Flight Trainer

The Contractor shall design the OFT IAW the GBTS SS. The Contractor shall integrate, test, manufacture, deliver and install OFTs. The Contractor shall provide a list of training faults inserted for training purposes. The Contractor shall deliver a Debriefing Station with each OFT delivered to SUPT Main Operating Bases (MOBs). The Contractor shall deliver an IUH for the OFT and Debriefing Station if applicable.
(DI-IPSC-81431A, System/Subsystem Specification (SSS), GBTS Subsystem Specification, C054)
(DI-SDMP-81493A, Program-Unique Specification Documents, GBTS CI Performance/Detail Specification, C219)
(TM-86-01P, Technical Manual Contract Requirements, A007)
(DI-PSSS-81527C, Training System Support Document, Instructor Utilization Handbook, C202)
(DI-ILSS-80502, List of Faults Inserted for Training Purposes, ATD & GTD Malfunction List, C038)

3.5.2.3 Unit Training Device

The Contractor shall design the UTD IAW the GBTS SS. The Contractor shall integrate, test, manufacture, deliver and install UTDs. The Contractor shall provide a list of training faults inserted for training purposes. The Contractor shall deliver an IUH for the UTD.
(DI-IPSC-81431A, System/Subsystem Specification (SSS), GBTS Subsystem Specification, C054)

(DI-SDMP-81493A, Program-Unique Specification Documents, GBTS CI Performance/Detail Specification, C219)
(TM-86-01P, Technical Manual Contract Requirements, A007)
(DI-PSSS-81527C, Training System Support Document, Instructor Utilization Handbook, C202)
(DI-ILSS-80502, List of Faults Inserted for Training Purposes, ATD & GTD Malfunction List, C038)

3.5.2.4 Aircrew Ground Egress Trainer

The Contractor shall design the AGET IAW the GBTS SS. The Contractor shall integrate, test, manufacture, deliver and install AGETs. The Contractor shall provide a list of training faults inserted for training purposes. The Contractor shall deliver an IUH for the AGET.
(DI-IPSC-81431A, System/Subsystem Specification (SSS), GBTS Subsystem Specification, C054)
(DI-SDMP-81493A, Program-Unique Specification Documents, GBTS CI Performance/Detail Specification, C219)
(TM-86-01P, Technical Manual Contract Requirements, A007)
(DI-PSSS-81527, Training System Support Document, Instructor Utilization Handbook, C202)
(DI-ILSS-80502, List of Faults Inserted for Training Purposes, ATD & GTD Malfunction List, C038)

3.5.2.5 Ejection Seat Trainer

The Contractor shall design the EST IAW the GBTS SS. The Contractor shall integrate, test, manufacture, deliver and install ESTs. The Contractor shall provide a list of training faults inserted for training purposes. The Contractor shall deliver an IUH for the EST.
(DI-IPSC-81431A, System/Subsystem Specification (SSS), GBTS Subsystem Specification, C054)
(DI-SDMP-81493A, Program-Unique Specification Documents, GBTS CI Performance/Detail Specification, C219)
(TM-86-01P, Technical Manual Contract Requirements, A007)
(DI-PSSS-81527C, Training System Support Document, Instructor Utilization Handbook, C202)
(DI-ILSS-80502, List of Faults Inserted for Training Purposes, ATD & GTD Malfunction List, C038)

3.5.2.6 Part Task Trainers

The Contractor shall design the PTT IAW the GBTS SS. The Contractor shall integrate, test, manufacture, deliver and install PTTs. The Contractor shall provide a list of training faults inserted for training purposes. The Contractor shall deliver an IUH for the PTT.
(DI-IPSC-81431A, System/Subsystem Specification (SSS), GBTS Subsystem Specification, C054)

(DI-SDMP-81493A, Program-Unique Specification Documents, GBTS CI Performance/Detail Specification, C219)
(TM-86-01P, Technical Manual Contract Requirements, A007)
(DI-PSSS-81527C, Training System Support Document, Instructor Utilization Handbook, C202)
(DI-ILSS-80502, List of Faults Inserted for Training Purposes, ATD & GTD Malfunction List, C038)

3.5.2.7 Ground Based Training System Devices Development & Production

The Contractor shall implement stimulation/simulation decisions to minimize the cost and meet the schedule of concurrency updates, and reduce the impact of changes to the aircraft OFP, using ARINC 610 as a guide.

3.5.2.7.1 Ground Based Training System Devices Hardware Development & Production

The Contractor shall design, develop, and document the GBTS hardware components IAW established system design processes. The Contractor shall maintain copies of all the GBTS baseline hardware drawing information in the TSSC.

3.5.2.7.2 Ground Based Training System Devices Software Development & Production

The Contractor shall use a CMMI-Level 3 (or higher) certified systematic method to plan, perform, and control the requirement analysis, design, coding, integration and testing of all deliverable software. The Contractor shall document that methodology through delivery of a GBTS SDP. The Contractor shall provide the Government Type-E Access to all internal plans and processes that are referenced in the GBTS SDP. The Contractor shall maintain all design and coding information in Software Development Folders. The Contractor shall abide by the following requirements for all GBTS software:

a) The Contractor shall integrate any software developed under this SOW that are required to operate, support, maintain and test any portion of the GBTS into the GBTS software product baseline.
b) The Contractor shall obtain Government approval of the use of proprietary software in the GBTS no later than the GBTS PDR. The Contractor shall maintain a list of the approved proprietary software integrated into the GBTS in the Software Development Plan.
c) The Contractor shall deliver all software source code, data, and executable code developed by the Contractor for all GBTS baseline software to the GBTS TSSC. The Contractor shall deliver all existing/supplier software used in the GBTS with sufficient rights and licenses to permit the operation, support, modification, and re-competition of the GBTS support services.
d) The Contractor shall deliver all computer programs (tools) used by the Contractor to perform software "porting" or re-hosting with the GBTS software.

e) The Contractor shall generate and provide a GBTS SPS to the Government. The Contractor shall generate and provide SPS updates for any changes in GBTS software.
f) The Contractor shall develop, implement, maintain, and deliver software and interface requirements specifications; visual database, analysis, test plans, descriptions, and reports; and design and version descriptions for GBTS software. The Contractor shall generate and provide updates for any changes in GBTS software.
g) The Contractor shall test, and validate GBTS software IAW approved test documentation.

(DI-IPSC-81427A, Software Development Plan (SDP), GBTS SDP, C052)
(DI-IPSC-81433A, Software Requirements Specifications (SRS), C055)
(DI-IPSC-81435A, Software Design Descriptions (SDD), C057)
(DI-IPSC-81436A, Interface Design Descriptions (IDD), C058)
(DI-IPSC-81434A, Interface Requirements Specification (IRS), GBTS IRS, C056)
(DI-IPSC-81437A, Database Design Descriptions, GBTS Visual Database Design Descriptions, C059)
(DI-IPSC-81438A, Software Test Plan (STP), C060)
(DI-IPSC-81440A, Software Test Report (STR), C062)
(DI-IPSC-81441A, Software Product Specification (SPS), C063)
(DI-IPSC-81442A, Software Version Description (SVD), C066)
(DI-IPSC-81443A, Software User Manuals (SUM), GBTS Software User Manuals, C069)
(DI-IPSC-81439A, Software Test Description (STD), C061)
(DI-MISC-80508B, Technical Report Study/Services, Verification Analysis Reports, C127)

3.5.2.7.2.1 Ground Based Training System Software Metrics

The Contractor shall establish a process to track and manage software metrics and include it in the SEMP. The Contractor shall use the software metrics in the SEP as the initial set of software metrics. These metrics shall apply to all GBTS CSCIs that are new or modified for the GBTS. Any changes to the metrics will be defined and agreed upon during the GDWG. The Contractor shall collect and deliver the software metrics.
(DI-MISC-80508B, Technical Report – Study/Services, Software Metrics, C126)

3.5.2.7.2.2 Aircrew Training Device Network Connectivity

The Contractor shall design the ATDs to be linked for training in a networked environment as described in the GBTS SS. The Contractor shall design, build, and deliver an ATD Network Connectivity Interface that adheres to OSA principles.
(DI-SDMP-81493A, Program-Unique Specification Document, GBTS CI Performance/Detail Specification, C219)
(DI-SESS-81248B, Interface Control Document (ICD), ATD Network Connectivity ICD, C231)

3.5.2.8 Ground Based Training System Training Systems Support Center (TSSC)

The Contractor shall design the TSSC IAW the GBTS SS. The Contractor shall integrate, test, deliver and install the TSSC. The Contractor shall design a TSSC that provides hardware/software CM with concurrency support for the GBTS as well as instructional support, IMI maintenance, and CM for the GBTS devices. The Contractor shall develop, deliver and maintain a TSSC that supports maintenance, trouble-shooting, upgrading, and configuration control of all GBTS CI/CSCIs. The Contractor shall develop, deliver, and maintain a TSSC that includes all components necessary for life cycle support of hardware and software development, integration, evaluation and sustainment efforts to include concurrency with the aircraft OFPs. The Contractor shall develop, deliver, and maintain the TSSC with the capability to complete minor modifications on all GBTS devices. The Contractor shall relocate, inventory and re-accomplish the acceptance test of the TSSC, including the GBTS SIL, to the Government designated location prior to the completion of the contract.
(DI-IPSC-81431A, System/Subsystem Specification Document (SSS), GBTS Subsystem Specification, C054)
(DI-MISC-81107A, Inventory/Utilization Data Report, GBTS Inventory/Utilization Data Report, C164)
(DI-QCIC-80553A, Acceptance Test Plan, C207)
(DI-NDTI-80603A, Test Procedure, GBTS Software Test Procedure, C189)
(DI-QCIC-81891, Acceptance Test Report, C212)

3.5.2.8.1 Ground Based Training System, System Integration Laboratory

The Contractor shall design, integrate, test, certify, and deliver a SIL dedicated for the GBTS effort IAW the GBTS SS. The Contractor shall develop the GBTS SIL so that it is representative of the production WST, OFT, and UTD systems to the extent required for life cycle support of software development, integration, evaluation, and sustainment efforts to include concurrency with the aircraft OFPs. The Contractor shall deliver a dedicated GBTS SIL as part of the TSSC with the capability to test the integration of all software, including aircraft OFPs, as appropriate, into the ATDs,
(DI-IPSC-81441A, Software Product Specification, C063)

3.5.2.8.2 GBTS Training Systems Support Center Support Document

The Contractor shall deliver GBTS TSSC User Support Document package for software and hardware technical documents and utilization instructions for individual users (e.g., software developers, test engineers, IMI authors, visual database developers) covering the TSSC support and management systems. The Contractor shall deliver a support document package that provides the complete procedures for utilization of all applicable TSSC software utility programs, support software file generation, and system performance characteristics. The Contractor shall include information to aid users in operating and achieving full utilization of TSSC systems.

(DI-IPSC-81443A, Software User Manuals (SUM), GBTS Software User Manuals, C069)

3.5.2.9 Interactive Multimedia Instruction (IMI) and Curriculum Development

The Contractor shall develop, produce, validate, and distribute IMI and associated lessons plans and course material to various training locations IAW MIL-HDBK-29612-3A and MIL-HDBK-29612-5 for the following training performed by the APT System:

a) SUPT
b) IFF Pilot Training
c) IFF Combat Systems Officer (CSO) Training
d) PIT
e) Upgrade Instructor Pilot Training
f) ENJJPT UPT
g) ENJJPT IFF
h) ENJJPT PIT
i) Simulator Instructor Training
j) Additional IMI as required by the GBTS SS or determined by the Contractor

The Contractor shall provide the Government the following documents for each course:
(DI-SESS-81520B, Instructional Media Design Package, GBTS Instructional Media Design Package, C241)
(DI-MISC-81459A, Syllabus, APT Training Syllabus, C178)
(DI- PSSS-81524C, Training Evaluation Document, C201)
(DI-SESS-81525C, Test Package, C243)
(DI-SESS-81526C, Instructional Media Package, GBTS Instructional Media Package, C244)
(DI-SESS-81695, Course Configuration Documentation Plan, C105)
(DI-SESS-81697, Instructional Design Document (IDD), C252)

3.5.2.9.1 Curriculum Development

The Contractor shall perform curriculum development activities IAW ISD procedures as documented in AFMAN 36-2234. The Contractor shall coordinate all necessary curriculum and syllabi development activities with the Government. The Contractor shall obtain documented Government approval on all curriculum and syllabi development decisions through the process defined in the Training Program Development Plan. The Contractor shall develop a comprehensive plan to direct and control all activities to develop the required curriculum and course materials using AFH 36-2235 Volume 3, as a guide. The Contractor shall also use AFH 36-2235 Volumes 1-13 as guides for following ISD principles and processes. The Contractor shall develop instructional designs, including media, to support the development and presentation of cognitive and procedural training. The Contractor shall develop APT curriculum in support of the various types/levels/courses of training as specified in task lists provided in the GBTS SS.
(DI-SESS-81521B, Training Program Structure Document, C242)

(DI-ILSS-81070, Training Program Development and Management Plan, C051)

3.5.2.9.2 Interactive Multimedia Instruction Development

The Contractor shall develop and deliver all IMI products on this contract IAW AFMAN 36-2234; AFH 36-2235, Volumes 1 through 13; and AFI 36-2201. The Contractor shall support the Government to develop APT curriculum that supports the types/levels of training as specified in the GBTS SS. The Contractor shall ensure IMI conforms with the latest version of Shareable Content Object Reference Model (SCORM) IAW DoDI 1322.26. The Contractor shall provide all necessary printed and digital materials, interactive SCORM-compliant training lessons and all other GBTS training materials as part of the IMI package. The Contractor's training material package shall include support documentation and instructions for both sustainment and modification. The Contractor shall develop and deliver an IMI system that is non-proprietary with unlimited data rights.
(DI-ILSS-80872, Training Materials, GBTS Training Materials, C042)
(DI-SESS-81699, Web-based Courseware, GBTS IMI Material, C254)

3.5.2.9.3 Requirements Analysis

The Contractor shall update, maintain, and deliver the GBTS Training Task Traceability Matrix T3M with all derived requirements using the APT requirements management database as described in section 3.2.2.1. The Contractor shall maintain a T3M that documents how each GBTS training task is defined or derived (via traceability to the source training task and operational documentation), allocated (via traceability to training curriculum and course syllabi), implemented (via traceability to course lesson and lesson module), and verified (via traceability to course review and verification) and shall track all changes to the training tasks. The Contractor shall maintain a T3M that provides an audit trail from the Master Training Task List (MTTL) to the curriculum (Training Program Structure Document), to course syllabi, to the various training media, to course, lesson, and module implementation and verification and include key decisions made to satisfy the training objectives. The Contractor shall document the T3M's change history for the training tasks to include reasons for the changes, when the changes were made, who requested the changes, and who authorized the changes. The Contractor shall update the T3M to identify all the defined and derived training tasks needed to develop and fabricate IMI that meets the training objectives.
(DI-SESS-81518C, Instructional Performance Requirements Document, Master Training Task List, C240)

3.5.2.9.4 Course Design Strategy

The Contractor shall prepare and deliver the Instructional Media Design Package. The Contractor shall identify and document all critical elements required for the production of each course's IMI. The Contractor shall identify and document lesson titles, course identification number(s), curriculum reference(s), safety hazards, lesson objectives, testing and remediation,

interface design and controls, abnormal conditions, course map sequence, and an outline of the curriculum as a minimum for each course. The Contractor shall develop the IMI so it is modular at the lesson plan "objective" level. The Contractor shall build the content such that it provides instructional feedback to the learner on both correct and incorrect performance.
(DI-SESS-81520B, Instructional Media Design Package, GBTS Instructional Media Design Package, C241)

3.5.2.9.5 Style Guide Production

The Contractor shall prepare and deliver a Style Guide as part of the Instructional Media Design Package.
(DI-MISC-81457, Lesson Strategy Report, C176)

3.5.2.9.6 Script/Storyboard Production

The Contractor shall produce script-storyboards which, at a minimum, describe the content of each specific training screen/page, including, branching, false paths, remediation, graphic and audio descriptions and deliver them incrementally. The Contractor shall produce IMI scripted storyboards describing the content of each specific training screen/page. The Contractor shall present and describe false paths, remediation, as well as audio and graphic descriptions with each script and storyboard to the Government. The Contractor shall deliver the script and storyboard as part of the Instructional Media Package.
(DI-SESS-81526C, Instructional Media Package, GBTS Instructional Media Package, C244)

3.5.2.9.7 Flow Diagram Production

The Contractor shall produce logic flow diagrams that show the flow, sequence, and branching of the instructional content in sufficient detail to depict overall flow, and clearly indicate navigational control of content for the user to easily review steps within procedures. The Contractor shall prepare and deliver the Instructional Media Design Package (Logic Flow Diagrams).
(DI-SESS-81520B, Instructional Media Design Package, GBTS Instructional Media Design Package, C241)

3.5.2.9.8 Interactive Multimedia Instruction Development Software

The Contractor shall ensure distributed learning content includes metadata and is delivered to the Government as content packages that are SCORM conformant IAW the current version of SCORM Conformance Requirements. The Contractor shall use Government Off-The-Shelf (GOTS)/COTS software to accomplish IMI development /integration activities unless otherwise directed or approved by the Government. The Contractor shall deliver all source code for any GOTS and/or COTS customizations to the Government.
(DI-IPSC-81441A, Software Product Specification (SPS), C063)
(DI-IPSC-81442A, Software Version Description (SVD), C066)

(DI-EGDS-80918, Technical Data Package Index, GBTS Master Technical Library, B001)

3.5.2.9.8.1 Learning Management System (LMS) Interface

The Contractor shall document and build the required APT Courses, IMI products, other electronic media for hosting on the Government-provided Enterprise Blended Learning Service (EBLS) LMS IAW the GBTS SS. The Contractor shall verify and validate the interface of all media and course with the EBLS. The EBLS will provide the APT interface to the Government Graduate Training Integration Management System.
(DI-IPSC-81436A, Interface Design Descriptions (IDD), C058)

3.5.2.9.9 Interactive Multimedia Instruction Installation and Verification

The Contractor shall install and verify the IMI IAW the GBTS SS. The Contractor shall verify launching of the IMI at each MOB and the GBTS TSSC. The Contractor shall evaluate the IMI against the requirements documented in the performance specification for each course produced. The Contractor shall conduct an integration test to ensure the integration of the IMI with EBLS IAW the GBTS SS at the first MOB prior to Small Group Try Outs (SGTO). The Contractor shall develop a plan for the SGTO. The Contractor shall make necessary course modifications based upon SGTO results. The Contractor shall notify the program office and AETC of the scheduled events. The Contractor shall coordinate with the program office to schedule "Demonstration" verification events that are required to have a Government witness present. The Contractor shall document the results of the Contractor's IMI installation and verification at the first MOB in a verification report.
(DI-MISC-80508B, Technical Report – Study/Services, IMI Installation, Verification, and Validation Report, C156)
(DI-ILSS-81070, Training Program Development and Management Plan, C051)

3.5.2.9.10 Interactive Multimedia Instruction Validation

The Contractor shall develop, implement, maintain, and deliver a validation plan that includes the planning, procedures, analyses, management, and support functions required for the Government to conduct the IMI validation process. The Contractor's program documentation shall be made available upon request to the Government for monitoring purposes. During the development process, the Contractor shall use the Monthly GDWGs for product validation against the designed curriculum. The Contractor shall document the results of the Contractor's IMI validation in a validation report.
(DI-MISC-80508B, Technical Report – Study/Services, IMI Installation, Verification, and Validation Report, C156)
(DI-ILSS-81070, Training Program Development and Management Plan, C051)

3.5.2.9.11 Interactive Multimedia Instruction Reviews and Meetings

The Contractor and appropriate subcontractors shall participate in IMI-related reviews and meetings to support the development of IMI products IAW Annex B.

3.5.2.9.11.1 Preliminary Integrated Interactive Multimedia Instruction Reviews

The Contractor shall conduct and co-chair with the Government, all Preliminary Integrated IMI Reviews (PIIRs) IAW Annex B. The Contractor shall facilitate the Government's complete inspection of the IMI and its integration into the existing software utilizing the applicable design documentation. During the conduct of the PIIR, the Contractor shall make available all proposed, pending, and Government-approved design information. The Contractor shall document all discrepancies identified during the PIIR as a PR. The Contractor shall correct the documented discrepancies prior to the beginning of the IMI Design Review (IMIDR). The Contractor shall document and deliver the results of the PIIR including all identified discrepancies, in the PIIR Report.
(DI-PSSS-81524C, Training Evaluation Document, C201)

3.5.2.9.11.2 Interactive Multimedia Instruction Design Review

The Contractor shall conduct, and co-chair with the Government, reviews of all electronic media including IMI design documents and curriculum materials IAW Annex B. The Contractor shall ensure suitability and acceptability of these documents and materials for the development and production of IMI and all Electronic Media. The Contractor shall freeze the design of each course upon the Government approval of the course's Instructional Design Documentation until the completion of the Government instructional course validation process. The Contractor shall process all IMI updates from design reviews IAW SOW Sections 3.5.3.2.7.5.1 and 3.5.3.2.7.5.2. The Contractor shall report all discrepancies to the Government. The Contractor shall document all discrepancies identified during the IMIDR as a PR. The Contractor shall correct the documented discrepancies prior to the beginning of IMI Installation and Verification. The Contractor shall document the results of the IMIDR and shall determine and document projected dates for final IMI testing and installation in the IMIDR Report
(DI-PSSS-81524C, Training Evaluation Document, C201)

3.5.2.10 Instructional System Formative Evaluation

The Contractor shall plan, design, develop, document, and implement an evaluation program to verify that the instructional system meets all course learning objectives and contractual requirements. The Contractor shall plan and perform the GBTS evaluation process, IAW AFMAN 36-2234 Chapter 8. The Contractor shall develop and deliver an evaluation plan that is integrated with the IMS following the ST-2000 process as a guide.
(DI-MGMT-80004, Management Plan, Instructional System Evaluation Program Plan, C076)
(DI-PSSS-81524C, Training Evaluation Document, C201)

3.5.2.10.1 Interactive Multimedia Instruction and Electronic Media Formative Evaluation

The Contractor shall set-up, coordinate, and lead the IMI and Electronic Media Formative Evaluation activities to include Government SME review, SGTO IAW AFH 36-2235 Volume 3, Chapter 7, Section G, and revision of instructional materials based on identified discrepancies IAW AFH 36-2235 Volume 3, Chapter 7, Section H. The Contractor shall track discrepancies as PRs. The Contractor shall provide the basis for changes to the IMI and Electronic Media which include the measurement and assessment of student learning in terms of knowledge, skills, and proficiency acquired. The Contractor shall analyze this information in terms of depth and rate of learning attained to support the Air Force's decision concerning course readiness. The Contractor shall address key issues including but not be limited to: (1) the technical accuracy of instruction, (2) the completeness of information coverage with respect to training requirements, (3) the compatibility of IMI and all Electronic Media with corresponding GBTS devices, (4) the ability of the selected media to support training objectives, (5) the human factors aspects, including acceptability, and (6) the adequacy of performance measures in all media. The Contractor shall conduct IMI and Electronic Media Formative Evaluation including SGTOs using actual student throughput or as close a replication as possible. The Contractor shall functionally validate IMI and all Electronic Media on the test version of the intended LMS. (DI-PSSS-81524C, Training Evaluation Document, C201)

3.5.2.10.2 System Level Formative Evaluation (SLFE)

The Contractor shall conduct a SLFE and address system related issues including but not limited to: (1) internal interfaces among courses, phases, and media, and (2) the capability of the GBTS components to operate at full capacity. The Contractor shall provide the SLFE. (DI-PSSS-81524C, Training Evaluation Document, C201)

3.5.2.10.3 Support of Course Readiness Reviews (CRRs)

The Contractor shall support a CRR on each new and revised course IAW Annex B. The Contractor shall, as a minimum, support the Government verification of the following areas:

a) the ability of the course and its components to meet expected objectives
b) the course interfaces throughout the GBTS
c) the course requirements tracked in the T3M IAW SOW para 3.5.2.9.3
d) the GBTS capacity to handle the cumulative load as each course comes online without degradation of system effectiveness

The Contractor shall provide the results of IMI and Electronic Media Formative Evaluation and system level formative evaluation for each course at its respective CRR.

3.5.3 Training Services

The Contractor shall train aircrew, simulator operators, test support, and maintenance personnel utilizing the standardized instructions necessary to acquire the knowledge and skills to execute developmental and operational test activities. The Contractor shall train the personnel required

to support the standup of each APT training squadron to prepare them to operate and maintain the aircraft. The Contractor shall provide support services for the GBTS products and capabilities as described in the following paragraphs.

3.5.3.1 Type 1 Training

The Contractor shall design, develop, test, deliver, and maintain Type 1 training materials to include integrating any required subcontractor training or training materials to meet Type 1 training requirements. The Contractor shall develop and provide Type 1 training to Government personnel to support DT&E and IOT&E execution, initial squadron stand-up, and Government familiarization training IAW AETC Instruction (AETCI) 36-2219. All Type 1 training products shall be provided to the Government as non-proprietary materials.

3.5.3.1.1 Type 1 Training Material

The Contractor shall provide Type 1 training instructional materials that are concurrent with the system technical data. For Type 1 training that contains IMI, the Contractor shall provide IMI that complies with the latest version of the DOD SCORM IAW DoDI 1322.26. The Contractor shall ensure that all Type 1 training materials are compliant with AETCI 36-2219, and incorporate AFMAN 36-2234 principles. The Contractor shall deliver all Type 1 training materials to the Government, including outputs, rationale, and associated documentation resulting from the ISD process used to generate the Type 1 training material.
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.2 Developmental Test & Evaluation (DT&E) Type 1 Training

The Contractor shall develop, conduct, manage, deliver, update, and make available DT&E Type 1 training with a corresponding training approach and implementation plan. The Contractor shall develop and conduct Type 1 training for Government aircrew, flight test engineers, maintenance personnel, GBTS simulator operators, and general program support personnel in the continental United States (CONUS) as identified in Annex G, Table 1. The Contractor shall plan for and provide up to 25% additional training (rounded up to the nearest whole number of students) over that specified in Annex G, Table 1 for replacement training of personnel required to support DT&E activities. The Contractor shall provide the Government Type-D Access to DT&E Type 1 training until IOT&E Type 1 training becomes available.
(DI-SESS-81521B, Training Program Structure Document, C242)

3.5.3.1.2.1 DT&E Type 1 Aircrew Training

The Contractor shall deliver and conduct Type 1 training for Government aircrews supporting DT&E execution as identified in Annex G, Table 1, prior to first combined Contractor and

Government aircraft DT&E event as identified in the IMP, and with completion NLT sixty (60) days prior to first EMD aircraft delivery. The Contractor shall develop, conduct, manage, deliver, and update Type 1 aircrew training for unrestricted Government use to train qualified test pilots and produce aircrews that are capable of being qualified to operate the aircraft in the intended test conditions and configurations. The Contractor shall provide the Government Type-D Access to DT&E Type 1 training until IOT&E Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI- SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.2.2 DT&E Type 1 Flight Test Engineer Training

The Contractor shall deliver and conduct Type 1 training for Government Flight Test Engineers supporting DT&E execution as identified in Annex G, Table 1 prior to first combined Contractor and Government aircraft DT&E event, and with completion NLT sixty (60) days prior to the first combined Government and Contractor Aircraft DT&E event. The Contractor shall develop Flight Test Engineer Training that focuses on aircraft performance, flying qualities, systems, general aircraft operating procedures, and flight safety. The Contractor shall develop training that includes simulator sorties to familiarize the flight test engineering students with the aircraft cockpit and flying environment. The Contractor shall schedule the training so that a minimum of 50% of the students listed in Annex G Table 1 are trained prior to first EMD aircraft delivery. The Contractor shall provide the Government Type-D Access to DT&E Type 1 training until IOT&E Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI- SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.2.3 DT&E Type 1 GBTS Simulator Operator Training

The Contractor shall deliver and conduct Type 1 GBTS Simulator Operator training that includes all instruction required to train personnel in the operation of the GBTS training devices as identified in Annex G, Table 1. The Contractor shall provide Type 1 training for GBTS simulator operators assigned to DT&E support with completion NLT thirty (30) days prior to first combined Contractor and Government GBTS DT&E event (initial System Performance Assessment prior to the CEVT). The Contractor shall provide the Government Type-D Access to DT&E Type 1 training until IOT&E Type 1 training becomes available.

(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI- SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.2.4 DT&E Type 1 Government Familiarization Training

The Contractor shall provide and deliver training to Government personnel as identified in Annex G, Table 1, and conduct Type 1 Aircraft and GBTS Familiarization Training. The Contractor shall develop Type 1 Government Familiarization training that is an overview of the aircraft and GBTS along with their systems and subsystems tailored to the program office, AETC staff, contract and financial management, and test support personnel. The Contractor shall deliver and conduct the initial version of this training NLT eighteen (18) months after contract award and update the training materials annually through system FCA. The Contractor shall provide the Government Type-D Access to DT&E Type 1 training until IOT&E Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI- SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.2.4.1 DT&E Type 1 Technical Order Certification and Verification (TOCV) Process Familiarization Training

The Contractor shall deliver and conduct Type 1 TOCV Process Familiarization training for personnel listed in Annex G, Table 1. The Contractor shall schedule training in a phased approach (i.e., multiple training opportunities) during EMD to enable early Government feedback on manuals during DT&E and complete verification activity prior to IOT&E. The Contractor shall provide Type 1 training that allows the Government to use Contractor processes, tools, and equipment to more efficiently accomplish TO verification. The Contractor shall provide the Government Type-D Access to DT&E Type 1 training until IOT&E Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI- SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.2.5 DT&E Type 1 Maintenance Training

The Contractor shall deliver and conduct Type 1 training for Government maintenance personnel required to participate in DT&E execution with completion NLT sixty (60) days prior to first EMD aircraft delivery. The Contractor shall tailor this training for qualified Government maintenance journeyman (5-level) and craftsman (7-level) Air Force Specialty Codes (AFSCs) (or civilian/contractor equivalent) personnel listed in Annex G, Table 1. The Contractor shall schedule each class so that instructor-to-student ratio for hands-on tasks does not exceed 4 students to 1 instructor. The Contractor shall develop and deliver Type 1 Maintenance training to train these maintenance personnel to the 3c proficiency level, as defined in AFI 36-2201, Figure A4.3: Sample Qualitative Requirements, for the APT Program. The Contractor shall include all instruction and training material required to prepare maintenance personnel to maintain the aircraft systems and SE during logistics test events. The Contractor shall provide all instruction and training material for unrestricted Government use. The Contractor shall design Type 1 maintenance training to include, as a minimum, system operations and familiarization, system and subsystem theory of operation, aircraft system interfaces, operational checkout, troubleshooting, and O-level maintenance tasks. The Contractor shall provide the Government Type-D Access to DT&E Type 1 training until IOT&E Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI- SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.3 Initial Operational Test & Evaluation (IOT&E) Type 1 Training

The Contractor shall develop, conduct, manage, deliver, update, and make available IOT&E Type 1 training with a corresponding training approach and implementation plan. The Contractor shall develop Type 1 training for Government aircrew, GBTS simulator operators, maintenance personnel, and life support personnel, in the continental United States (CONUS). The Contractor shall plan for and provide up to 25% additional (rounded up to nearest whole number of students) training over that specified in Annex G, Table 2 for replacement training of personnel needed to support operational test and evaluation activities. The Contractor shall provide the Government Type-D Access to IOT&E Type 1 training until IOT&E is complete and Initial Squadron Standup (ISS) Type 1 training becomes available.
(DI-SESS-81521B, Training Program Structure Document, C242)

3.5.3.1.3.1 Initial Operational Test & Evaluation (IOT&E) Type 1 Pilot Training

The Contractor shall deliver and conduct Type 1 training for IOT&E pilots required to execute IOT&E with completion NLT sixty (60) days prior to first IOT&E event. The Contractor shall develop, conduct, manage, deliver, and update Type 1 pilot training for unrestricted Government use to train qualified T-38 pilots as identified in Annex G, Table 2 and produce APT pilots that are capable of being qualified to operate the aircraft in the intended operational conditions and configurations. The Contractor shall provide the Government Type-D Access to IOT&E Type 1 training until IOT&E is complete and ISS Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.3.2 IOT&E Type 1 Combat Systems Officer Training

The Contractor shall deliver and conduct Type 1 training for IOT&E CSOs required to execute IOT&E with completion NLT sixty (60) days prior to first planned IOT&E event. The Contractor shall develop, conduct, manage, deliver, and update Type 1 CSO training for unrestricted Government use to train qualified CSOs as identified in Annex G, Table 2 and produce CSOs that are capable of being qualified to operate the APT Aircraft in the intended operational conditions and configurations. The Contractor shall provide the Government Type-D Access to IOT&E Type 1 training until IOT&E is complete and ISS Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.3.3 IOT&E Type 1 GBTS Simulator Operator Training

The Contractor shall deliver and conduct Type 1 GBTS Simulator Operator training that includes all instruction required to train personnel in the operation of the GBTS simulators as identified in Annex G, Table 2. The Contractor shall provide and conduct Type 1 training for GBTS simulator operators with completion NLT sixty (60) days prior to the first simulator delivery to the IOT&E location. The Contractor shall provide the Government Type-D Access to IOT&E Type 1 training until IOT&E is complete and ISS Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)

(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.3.4 IOT&E Type 1 Aircrew Flight Equipment (AFE) Training

The Contractor shall deliver and conduct Type 1 AFE training to Government personnel as identified in Annex G, Table 2. The Contractor shall develop and conduct AFE training that includes all instruction required to train AFE personnel in the operation of the aircraft's life support systems and subsystems. The Contractor shall provide Type 1 training for life support personnel with completion NLT 120 days prior to first planned IOT&E event. The Contractor shall provide the Government Type-D Access to IOT&E Type 1 training until IOT&E is complete and ISS Type 1 training becomes available.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.3.5 Initial Operational Test & Evaluation Type 1 Maintenance Training

The Contractor shall deliver and conduct Type 1 training for maintenance personnel required to execute IOT&E starting no earlier than 180 days prior, with completion NLT sixty (60) days prior to the first IOT&E event. The Contractor shall tailor this Type 1 training for qualified Government maintenance journeyman (5-level) and craftsman (7-level) Air Force Specialty Codes (AFSCs) (or civilian/contractor equivalent) personnel listed in Annex G, Table 2. The Contractor shall schedule each class so that instructor to student ratio for hands-on tasks does not exceed 4 students to 1 instructor. The Contractor shall develop and deliver Type 1 Maintenance training to train these maintenance personnel with the required knowledge and demonstrated skills to the 3c proficiency level, as defined in AFI 36-2201, Figure A4.3 Sample Qualitative Requirements, for the APT Program to produce personnel prepared to maintain and support the APT Aircraft systems and SE. The Contractor shall provide all instruction and training material for unrestricted Government use. The Contractor shall design the Type 1 maintenance training to include systems operation and familiarization, system and subsystem theory of operation, aircraft systems interfaces, troubleshooting, and O-level maintenance tasks. The Contractor shall develop Type 1 training that prepares certified maintainers to conduct aircraft maintenance utilizing verified technical data on the aircraft and SE. The Contractor shall provide the Government Type-D Access to IOT&E Type 1 training until IOT&E is complete and ISS Type 1 training becomes available.

(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.3.5.1 Initial Operational Test & Evaluation Type 1 Maintenance Training – MTS

The Government intends to develop and acquire an MTS consisting of instruction, virtual training, and physical training devices. To the maximum extent possible the Contractor shall utilize this system in the development and execution of Type 1 training. If directed, the Contractor shall work in conjunction with a potential MTS Contractor to provide Type 1 training.

3.5.3.1.3.6 Early Type 1 Maintenance Instructor Training – MTS

The Contractor shall deliver and conduct Type 1 training for maintenance instructors starting no earlier than 270 days prior, with completion NLT 180 days prior to the first LRIP aircraft delivery. The Contractor shall tailor this Type 1 training for qualified Government maintenance journeyman (5-level) and craftsman (7-level) AFSCs (or civilian/contractor equivalent) personnel listed in Annex G, Table 5. The Contractor shall develop and deliver Type 1 Maintenance instructor training to train these maintenance personnel with the required knowledge and demonstrated skills to the 3c proficiency level, as defined in AFI 36-2201, Figure A4.3 Sample Qualitative Requirements, for the APT Program to in-turn produce personnel prepared to maintain and support the APT Aircraft systems and SE. The Contractor shall provide all instruction and training material for unrestricted Government use. The Contractor shall design the Type 1 maintenance training to include systems operation and familiarization, system and subsystem theory of operation, aircraft systems interfaces, troubleshooting, and O-level maintenance tasks. The Contractor shall develop Type 1 training that prepares certified instructors to train maintainers to conduct aircraft maintenance utilizing verified technical data on the aircraft and SE. To the maximum extent possible the Contractor shall utilize the MTS in the development and execution of Type 1 training. If directed, the Contractor shall work in conjunction with a potential MTS Contractor to provide Type 1 training.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.4 Initial Squadron Standup Type 1 Training

The Contractor shall develop, conduct, manage, deliver, update, and make available ISS Type 1 training with a corresponding training approach and implementation plan. The Contractor shall develop an ISS Type 1 training package that includes instructor aircrew, student pilot, life support personnel, GBTS simulator operator, and maintenance personnel Type 1 training. The Contractor shall plan for and provide up to 25% (rounded up to the nearest whole number) additional training over that specified in Annex G, Table 3 for replacement training of personnel needed to support ISS activities. The Contractor shall provide the Government Type-D Access to Type 1 training from the start of the classroom training period through contract termination. (DI-SESS-81521B, Training Program Structure Document, C242)

3.5.3.1.4.1 ISS Type 1 Instructor Pilot Conversion Training

The Contractor shall deliver and conduct Type 1 training for T-38 qualified instructor pilots with completion NLT sixty (60) days prior to each squadron standup event. The Contractor shall develop, conduct, manage, deliver, and update Type 1 instructor pilot training for unrestricted Government use to train qualified T-38 instructor pilots as identified in Annex G, Table 3 and produce APT instructor pilots that are capable of being qualified to operate the aircraft in the intended operational conditions and configurations. The Contractor shall provide the Government Type-D Access to Type 1 training from the start of the classroom training period through contract termination.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.4.2 ISS Type 1 Combat Systems Officer Instructor Conversion Training

The Contractor shall deliver and conduct Type 1 training for current CSOs with completion NLT sixty (60) days prior to each squadron standup event. The Contractor shall develop, conduct, manage, deliver, and update Type 1 CSO training for unrestricted Government use to train qualified CSOs as identified in Annex G, Table 3 and produce CSOs that are capable of being qualified to operate the APT Aircraft in the intended operational conditions and configurations. The Contractor shall provide the Government Type-D Access to Type 1 training from the start of the classroom training period through contract termination.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)

(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.4.3 ISS Type 1 Ground Based Training System Simulator Operator Training

The Contractor shall deliver and conduct sufficient ISS Type 1 training to train initial squadron personnel as identified in the IMP with completion NLT sixty (60) days prior to each squadron standup event. The Contractor shall deliver ISS Type 1 GBTS Simulator Operator training that includes all instruction required to train personnel in the operation of the GBTS training devices and training to perform academic instruction as identified in Annex G, Table 3. The Contractor shall provide Type 1 training for experienced flight simulator operators assigned to the initial squadron. The Contractor shall provide the Government Type-D Access to Type 1 training from the start of the classroom training period through contract termination.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.4.4 ISS Type 1 Aircrew Flight Equipment Training

The Contractor shall deliver and conduct sufficient ISS Type 1 training to train initial squadron personnel as identified in the IMP with completion NLT sixty (60) days prior to each squadron standup event. The Contractor shall deliver Type 1 AFE training to Government personnel as identified in Annex G, Table 3. The Contractor shall develop and conduct AFE training that includes all instruction required to train AFE personnel in the operation of the APT Aircraft's life support systems and subsystems. The Contractor shall provide the Government Type-D Access to Type 1 training from the start of the classroom training period through contract termination.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.4.5 ISS Type 1 Organizational Level (O-level) Maintenance Training

The Contractor shall deliver and conduct Type 1 O-level Maintenance training for maintenance personnel required to execute ISS, as identified in the IMP, starting no earlier than 180 days prior with completion NLT sixty (60) days prior to the first Production aircraft delivery at each MOB. The Contractor shall tailor this Type 1 training for qualified Government maintenance journeyman (5-level) and craftsman (7-level) AFSCs (or civilian/contractor equivalent) personnel listed in Annex G, Table 3. The Contractor shall schedule each class so that instructor-

to-student ratio for hands-on tasks does not exceed 4 students to 1 instructor. The Contractor shall develop and deliver Type 1 Maintenance training to train these maintenance personnel with the required knowledge and demonstrated skills to the 3c proficiency level, as defined in AFI 36-2201, Figure A4.3 Sample Qualitative Requirements, for the APT Program. The Contractor shall provide training that prepares the initial cadre to return to their unit to develop on-the-job training. The Contractor shall provide all instruction and training material for unrestricted Government use. The Contractor shall design the training to include systems operation and familiarization, system and subsystem theory of operation, aircraft systems interfaces, troubleshooting, and O-level maintenance tasks. The Contractor shall provide the Government Type-D Access to Type 1 training from the start of the classroom training period through contract termination.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)
(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.1.4.6 ISS Type 1 Depot Maintenance and Commodity Training

The Contractor shall deliver and conduct Type 1 D-Level Maintenance training for maintenance personnel required to support ISS and depot stand-up, as identified in the IMP, with completion NLT sixty (60) days prior to the first Production aircraft delivery. The Contractor shall deliver Type 1 Depot Maintenance and Commodity training to train the initial depot personnel listed in Annex G, Table 4 at the specified location(s). The Contractor shall include systems operation and familiarization, system and subsystem theory of operation, aircraft systems interfaces, troubleshooting, and O-level maintenance tasks in the training. The Contractor shall develop and deliver Type 1 training for D-Level maintenance and commodity maintenance for peculiar items selected for repair at the Government depot repair facilities, as identified during the Level of Repair Analysis (LORA) and the depot capabilities Gap Analysis during the Depot Maintenance Activation Working Group (DMAWG). The Contractor shall provide D-Level aircraft and SE maintenance training that includes operations, operational checkout, maintenance, troubleshooting, repair, rebuild, and refurbishment for Government depot reparable (on and off-equipment) items. The Contractor shall develop training that includes instruction required to prepare maintenance personnel to train others in the depot maintenance and support of the aircraft. The Contractor shall schedule each class so that student-to-instructor ratio for hands-on tasks does not exceed 4 students to 1 instructor. The Contractor shall provide the Government Type-D Access to Type 1 training from the start of the classroom training period through contract termination.
(DI-PSSS-81522C, Course Conduct Information Package, Type 1 Training Course Conduct Information Package, C200)

(DI-ILSS-80872, Training Materials, Type 1 Training Materials, C043)
(DI-SESS-81526C, Instructional Media Package, Type 1 Instructional Media Package, C245)
(DI-SESS-81699, Web-Based Courseware, Type 1 Training IMI Material, C253)
(DI-MISC-81459A, Syllabus, Type 1 Training Syllabus, C177)

3.5.3.2 Ground Based Training System (GBTS) Contractor Logistics Support

3.5.3.2.1 Management of Ground Based Training System

The Contractor shall be responsible for the complete administration, management, maintenance and daily operation of the GBTS. The Contractor shall develop, implement, and maintain a CLS Plan. The Contractor shall work with AETC to develop and integrate the yearly class schedules to allocate the planned available GBTS resources supporting the GBTS availability requirements in the GBTS SS. The Contractor shall provide and manage fully qualified personnel required for the operation, maintenance, and support of the GBTS. The Contractor shall document and deliver a report for all planned and completed CLS activities. The Contractor shall maintain a list of Contractor-provided equipment in the CLS Plan. The Contractor shall develop and deliver an activity schedule.
(DI-MGMT-80721, Daily Site Activity Schedule, CLS DSAS, C094)
(DI-MGMT-80004A, Management Plan, GBTS CLS Management Plan, C077)
(DI-MGMT-80061A, Engineering and Technical Services Accomplishment Report, CLS Activity Report, C087)

3.5.3.2.1.1 Management of Ground Based Mission Support Systems and Datalink Equipment

The Contractor shall be responsible for the complete administration, management, and maintenance of the ground based mission support systems and datalink equipment as described in section 3.2.15. The Contractor shall provide and manage fully qualified personnel required for the maintenance and support of the ground based mission support systems and datalink equipment. The Contractor shall include ground based mission support systems and datalink equipment in the CLS Activity Report.
(DI-MGMT-80061A, Engineering and Technical Services Accomplishment Report, CLS Activity Report, C087)

3.5.3.2.2 Quality Assurance Surveillance Program (QASP)

The Contractor shall support the Government’s quality assurance surveillance program which will monitor the Contractor’s performance of GBTS responsibilities on a site-by-site basis through the life of the contract.

3.5.3.2.2.1 Quality Assurance Inspections

The Contractor shall support periodic Government-conducted Contract Compliance Evaluations (CCE) for GBTS locations to assess Contractor's performance of GBTS support responsibilities to include IMI, simulator training, and facilities support. These evaluations may be accomplished simultaneously with recurring ATD SIMCERTs.

3.5.3.2.3 Simulator Quality Management System (SQMS)

The Contractor shall establish and operate a SQMS for all GBTS components. The Contractor's SQMS shall be documented in the SEMP. The Contractor shall establish and operate a SQMS that includes a policy, process or procedure that controls how discrepancies are recorded for all GBTS components to include the GBTS ATD's AFTO 781. The Contractor shall describe how the discrepancies records are maintained for the life of the contract and made available to the instructors. The Contractor shall track the length of time a component has been missing, malfunctioning or inoperative to include how correction time extensions will be requested from the Government if exceeding 30 days. The Contractor shall maintain a discrepancy prioritization system to prioritize known discrepancies according to their impact on the ATDs functionality and capability to operate as defined in the Minimum Essential Subsystems List (MESL).
(DI-SESS-81785A, Systems Engineering Management Plan (SEMP), C264)

3.5.3.2.3.1 Simulator Operational Quality Assurance (SOQA)

The Contractor shall collect Aircraft Information Program data for SOQA from both WSTs and OFTs, including individual ATD identification, but excluding identification of individual crewmembers. The Contractor shall identify/flag resets during the training missions. The Contractor shall make this data available upon Government request.
(DI-MGMT-81453A, Data Accession List (DAL), C100)

3.5.3.2.3.2 Simulator Certification (SIMCERT)

The Contractor shall support the Air Force conducted SIMCERT of the ATDs IAW AFI 36-2251, Chapter 6. The Contractor shall deliver updated Acceptance Test Procedures before each SIMCERT event. The Contractor shall document the performance of the ATDs in Qualification Test Guides (QTGs), including the applicable 14 CFR Part 60 tests. The Contractor shall support the annual re-certification of ATDs IAW Annex B. The Contractor shall support two Government visits annually. The Contractor shall make required QTG flight performance data available prior to each visit to allow review of training device performance. The Contractor will be provided notification of the scheduled visits along with a request for the necessary curves information at least 45 days prior to the visits. The Contractor shall document all identified degradations/deficiencies IAW SOW section 3.2.1.3.
(DI-NDTI-80809B, Test/Inspection Report, C192)
(DI-NDTI-80603, Test Procedure, Acceptance Test Procedure, C188)

3.5.3.2.4 Training System Requirements Analysis (TSRA)

The Contractor shall develop, implement, and maintain the TSRA documents to be consistent with the Government provided TSRA documents. The Contractor's TSRA documents shall maintain concurrency with all system modifications through the life of this contract.
(DI-SESS-81635A, Mission/Task Analysis Report (MTAR), MTAR Update, C249)
(DI-PSSS-80569A, Objectives and Media Analysis Report (OMAR), CLS OMAR Update, C199)
(DI-ILSS-80570, Training Requirements Analysis Report (TRAR), CLS TRAR Update, C039)
(DI-ILSS-80571, Training Systems Basis Analysis Report (TSBAR), CLS TSBAR Update, C040)
(DI-SESS-81518C, Instructional Performance Requirements Document (MTTL), Master Training Task List, C240)

3.5.3.2.5 Training Device Maintenance

The Contractor shall provide and operate a maintenance program that ensures all scheduled and unscheduled maintenance is performed at each training site for all GBTS system components. The Contractor shall provide total maintenance for all GBTS system components to include, but not limited to, all inspections, preventative and unscheduled maintenance, internal and external ATD cleaning, service, lubrications, replacement of parts, troubleshooting, repair, bench check, reassembly, testing, calibration, and conduct of operational checks to correct malfunctions and shall verify the adequate and proper serviceable condition of components, subsystems, or systems. The Contractor shall provide all resources necessary to accomplish these tasks. The Contractor shall provide all maintenance of the training loads/aids and SE. The Contractor shall provide all maintenance for other GBTS system components that includes:

a) Maintenance of the hardware and computer systems in the Student Learning Center.
b) Maintenance of the flight planning system hardware and LMS hardware.
c) Maintenance of the student and instructor workstations.
d) Maintaining backup copies of all operational training software loads.

(DI-MGMT-80995A, Maintenance Service Report, GBTS Device Maintenance Report, C095)

3.5.3.2.5.1 Minimum Essential Subsystems List

The Contractor shall identify the minimum equipment, including subsystems, required to achieve all training objectives for each specific lesson for all ATDs (reference AFI 21-103 for MESL description). The Contractor shall maintain and update the MESL to reflect all changes required by IMI and/or lesson plan objective updates. The Contractor shall identify training device mission capability IAW the MESL.
(DI-MISC-81417, Minimum Equipment Subsystem List (MESL), MESL for GBTS & Aircraft, C173)

3.5.3.2.5.2 Ground Based Training System Availability

The Contractor shall maintain the training devices in mission capable (MC) status prior to and during scheduled missions to meet the availability requirements in the GBTS SS. Availability is calculated monthly, IAW the methodology outlined in the GBTS SS. For the ATD to be available it must be MC. For the ATD to be MC, all MESL items shall be fully operational for the scheduled training mission objectives. The Contractor shall accomplish unscheduled maintenance, initiated as a result of a Not Mission Capable (NMC) device or an aborted mission, with minimum interference to the remaining aircrew training schedule except where continued use of the device would cause damage to the equipment or compromise personnel safety. The Contractor shall continue unscheduled maintenance at the earliest possible time and shall document it in the Contractor Device Performance Reports. The Contractor shall report deviations from MC status for scheduled training activities to the Contracting Officer Representative (COR) NLT the next training day. The Contractor shall identify the causes of the deviations and take corrective action to prevent their reoccurrence.
(DI-ILSS-80191D, Contractor Device Performance Report, GBTS Availability Report, C037)

3.5.3.2.6 Ground Based Training System Linked Operations

The Contractor shall maintain all site required cabling, hardware and software, routers, switches and/or encryption devices. The Contractor shall be responsible for operating and maintaining hardware and software versions, configurations, and solutions consistent with GBTS interface controls, standards, and configurations. The Contractor shall conduct connectivity testing and network operations integration activity as required to support linked GBTS training activities.

3.5.3.2.7 GBTS Training System Support Center Support

The Contractor shall provide the resources necessary to operate and maintain the GBTS TSSC, to include CM, maintenance, logistics support, integration, modification, and validation of all software, IMI, course curriculums, and training aids for the APT Program. The Contractor shall use the TSSC to design, develop, and implement modifications to GBTS components. The Contractor shall use the GBTS TSSC as the master repository for all data developed and/or used to support the day to day operation of the GBTS. The Contractor shall maintain the GBTS Master Library. The Contractor shall be responsible for data currency and the distribution of changes to the sites. The Contractor shall distribute IMI, TOs, AFIs and pamphlets, and changes. The Contractor shall maintain an evaluation system and use it to prioritize changes to the GBTS. The Contractor shall implement a design request process and instructional change request process. The Contractor shall support Government led audits and inspections IAW Annex B. The Contractor shall document and deliver a report for all planned and completed TSSC activities.
(DI-MGMT-80061A, Engineering and Technical Services Accomplishment Report, CLS Activity Report, C087)

3.5.3.2.7.1 Training System Support Center Staffing

The Contractor shall provide personnel and resources at the TSSC sufficient for all necessary instructional material changes, hardware engineering support, visual database support (either collocated or on call), software development to incorporate aircraft OFP changes into the GBTS components, and development to incorporate changes and modifications to the GBTS devices to maintain concurrency with the aircraft. The Contractor shall determine the best mix of personnel between hardware, software, visual, and instructional material engineering skills, for the tasks that must be completed. If a shortfall is projected, the Contractor shall provide the Government with a recommendation anytime during the performance year for follow-on action. The Contractor shall provide personnel with a minimum of a Bachelor of Science degree in the appropriate discipline from a university which is recognized by an accepted accrediting organization and have demonstrated experience in simulation. The Contractor shall request Government approval to substitute a TSSC staff candidate's appropriate technical training and experience for the educational requirements.

3.5.3.2.7.2 Concurrency and Obsolescence of Ground Based Training System Products

The Contractor shall ensure that the GBTS, including those located in the GBTS TSSC, maintains concurrency with the aircraft. The Contractor shall ensure that the instructional materials are concurrent with the system technical data. The Contractor shall establish a concurrency process that is documented in the CMP to assess potential impacts to IMI, GBTS devices, and GBTS databases before requesting Government approval to implement the changes. The Contractor shall also ensure that instructional materials are concurrent with system technical data. The Contractor shall maintain all GBTS Product baselines in the TSSC and provide Type-D Access to Government personnel. The Contractor shall identify and mitigate impending obsolescence issues and impacts IAW with APT Program DMP for the GBTS Products and GBTS supporting equipment.
(DI-SESS-80858C, Supplier's Configuration Management Plan, GBTS CLS CMP, C229)
(DI-MGMT-81948, Diminishing Manufacturing Sources and Material Shortages Management Plan, DMSMS Management Plan for GBTS, C118)

3.5.3.2.7.3 Software and Interactive Multimedia Instruction Baseline Reviews

The Contractor shall review the GBTS software and IMI baselines annually to incorporate, deliver, and implement approved changes to maintain concurrency with the system and associated operational regulations. The Contractor shall document and deliver the results of its annual baseline review. The Contractor shall support a Government IMI Baseline Audit of the GBTS software and IMI baselines IAW Annex B.
(DI-MGMT-80061A, Engineering and Technical Services Accomplishment Report, GBTS TSSC Software and IMI Baseline Reviews, C086)

3.5.3.2.7.4 Ground Based Training System Configuration Management System

The Contractor shall perform CM to maintain device and instructional material product baseline configurations in the TSSC data library. The Contractor shall distribute all GBTS baseline changes, updates, and supplements to the operational sites. The Contractor shall maintain and provide CM at the TSSC for all operational site-unique electronic files (e.g., visual system databases, initial condition files, user support libraries).
(DI-SESS-81121A, Baseline Description Document, C230)
(DI-SESS-80776A, Technical Data Package, TDP for GBTS and MTS, B005)

3.5.3.2.7.5 Interactive Multimedia Instruction Support

The Contractor shall operate, update, modify, and maintain the IMI Support. The Contractor shall maintain validated training configurations for each GBTS training course. The Contractor shall perform an annual review of the syllabus for each course, identify the impact of aircraft and mission changes to curriculum, incorporate applicable changes into the training system curriculum, and update each course to include Government recommendations. The Contractor shall perform, as a part of normal TSSC operations, IMI changes resulting from student comments, results of surveys and test data analysis, changes to TOs, safety supplements, training change proposals, military instructions, manuals, and regulations that are required for curriculum currency. The Contractor shall provide errata sheets for changes and updates as a result of emergency and provide operational safety supplements within 48 hours of receipt of changes at the TSSC for all IMI and Electronic Media. The Contractor shall provide routine technical corrections (data points, typos) and distribution to the student within 15 training days of Government change notification. In the event of a regulatory release or enhancement, the Contractor shall make these changes within 120 days. The Contractor shall distribute errata sheets reflecting the change before the next presentation of affected instructional material. The Contractor shall incorporate any changes via the TSSC TSCWG process (or change process if applicable).
(DI-MISC-81459A, Syllabus, APT Training Syllabus, C178)
(DI-SESS-81699, Web-based Courseware, GBTS IMI Material, C254)
(DI-MISC-80508B, Technical Report – Study/Services, CLS IMI Update Report, C157)
(DI-MISC-80508B, Technical Report – Study/Services, GBTS Instructional Change Request, C158)
(DI-ILSS-80872, Training Materials, GBTS Training Materials, C042)

3.5.3.2.7.5.1 Interactive Multimedia Instruction and Electronic Media Authoring and Support

The Contractor shall update, modify and maintain the IMI and Electronic Media throughout the life of the contract. The Contractor shall provide non-proprietary IMI authoring capabilities within the GBTS TSSC to fully implement the IMI support required to provide and update the training courses which use the system.

(DI-MISC-81459A, Syllabus, APT Training Syllabus, C178)
(DI-SESS-81699, Web-based Courseware, GBTS IMI Material, C254)

3.5.3.2.7.5.2 Instructional Change Requests (ICR)

The Contractor shall use ICRs to identify changes to IMI. The Contractor shall incorporate approved changes in the form of ICR into a quarterly update cycle, or sooner, if required by the TSCWG. The Contractor shall provide the ICRs to the TSCWG to include priorities. The Contractor shall ensure that ICRs include the appropriate cost or performance impacts.
(DI-MISC-80508B, Technical Reports – Study/Services, CLS IMI Update Report, C157)

3.5.3.2.7.6 Ground Based Training System Summative Evaluation

The Contractor shall plan and conduct a Summative Evaluation of the GBTS at each site IAW AFH 36-2235 Volume 3, Chapter 9. The Contractor's Summative Evaluation will begin incrementally at the first MOB with the first CRR. The Contractor shall include in the Summative Evaluation process the measurable indicators to ensure products, services, and systems satisfactorily perform designed functions within the constraints imposed by the operational training environment. The Contractor's evaluation shall provide recommendations for necessary changes to the IMI and all Electronic Media, hardware, and software. The Contractor's Summative Evaluation process shall determine: (1) the effectiveness and efficiency of the GBTS and components to meet AF training requirements, (2) the integrity of the GBTS under the demands of a totally integrated system including all components and internal interfaces, and (3) the degree to which student performance levels have been achieved. The Contractor shall brief the Government on the results of the evaluation of each course at each Site Training Readiness Review (STRR).
(DI-PSSS-81524C, Training Evaluation Document, C201)
(DI-MGMT-80004A, Management Plan, Instructional System Evaluation Program Plan, C076)
(DI-ADMN-81505, Report, Record of Meeting/Minutes, C005)

3.5.3.2.7.6.1 Site Training Readiness Review

The Contractor shall conduct a STRR of the GBTS as each MOB is stood up IAW Annex B. The Contractor shall provide the results of system level formative evaluation and summative evaluation to date for each MOB IAW AFH 36-2235 Volume 3, Chapter 8, Section A. The Contractor shall confirm that all applicable courses have been implemented, all CIs delivered, and the results of the Formative Evaluation at each site has been completed. The Contractor's successful completion of the STRR review shall be the basis for completion of the Development Formative Evaluation process for a specific MOB.

3.5.3.2.7.7 Operational Evaluation Process

Following the completion of the Summative Evaluations the Contractor shall implement and maintain a continuous operational evaluation process for all GBTS courses throughout the life of

the contract. The Contractor shall perform the operational evaluation using AFH 36-2235, Volume 3, Chapter 9, Section C as a guide. The Contractor shall analyze and deliver the results of the operational evaluations.
(DI-PSSS-81524C, Training Evaluation Document, C201)

3.5.3.2.7.7.1 Supportability Demonstration

The Contractor shall demonstrate that its GBTS CLS approach meets or exceeds GBTS availability requirements and service quality levels in the GBTS SS. The Contractor's Supportability Demonstration will begin incrementally with the first CRR and span the first twelve (12) months of GBTS operation. The Contractor shall use a GBTS Maintenance Data Collection System as the data base source for the demonstration. The Contractor's Supportability Demonstration shall be accomplished using only GBTS assets. The Contractor shall provide the Government with Type-D Access to the supportability demonstration data and provide resulting analysis. The Contractor shall establish and document the supportability demonstration strategy as part of the CLS management plan.
(DI-MISC-80508B, Technical Report-Study/Services, Supportability Demonstration Results, C159)
(DI-MGMT-80004A, Management Plan, GBTS CLS Management Plan, C077)

3.5.3.2.7.8 Ground Based Training System Software Maintenance

The Contractor shall maintain, develop, modify, test, and implement changes to GBTS software. The Contractor shall conduct software load testing of the modified devices and/or subsystems and support Government-conducted objective and subjective tests of the modified devices and/or subsystems. The Contractor shall obtain Government approval before implementing any changes into a training environment. The Contractor shall perform the following software functions to include, but not limited to, maintaining the software baseline in an operable and up to date condition, processing mission generation input data into real time files, and managing the configuration of the mission profiles library. The Contractor shall update and provide the software documentation resulting from any changes and the Contractor shall maintain software documentation in the GBTS Master Technical Library. The Contractor shall maintain off-line electronic copies of the presently fielded baseline, the previously fielded baseline, and the baseline currently under test.
(DI-IPSC-81441A, Software Product Specification (SPS), C063)
(DI-IPSC-81442A, Software Version Description (SVD), C066)
(DI-IPSC-81433A, Software Requirements Specifications (SRS), C055)
(DI-IPSC-81435A, Software Design Description (SDD), C057)
(DI-IPSC-81436A, Interface Design Description (IDD), C058)
(DI-IPSC-81443A, Software User Manuals (SUM), GBTS Software User Manuals, C069)
(DI-IPSC-81439A, Software Test Description (STD), C061)
(DI-IPSC-81440A, Software Test Report (STR), C062)

3.5.3.2.7.8.1 Visual Database Support

The Contractor shall maintain, modify, test, and implement changes to ATD Visual Databases. The Contractor shall obtain and incorporate new visual databases and updates, including new or modified airfields and models. The Contractor shall maintain the visual database baseline in an operable and up to date condition and incorporate updates and changes to the visual database based on authorized change requests from the TSCWG. The Contractor shall obtain Government approval before implementing any changes into a training environment. The Contractor shall distribute incorporated databases, airfield and models to all APT training sites and the Program Office. The Contractor shall document all exported formats, thoroughly describing the production rules for export as well as the export databases' internal hierarchical and topological structures. The Contractor shall update and provide the appropriate visual database documentation and make them available in the GBTS Master Technical Library.
(DI-IPSC-81437A, Database Design Descriptions, GBTS Visual Database Design Descriptions, C059)
(DI-IPSC-81439A, Software Test Description (STD), C061)
(DI-IPSC-81440A, Software Test Report (STR), C062)

3.5.3.2.7.9 Ground Based Training System Master Technical Library

The Contractor shall maintain and keep concurrent with the GBTS components, the reproducible Master Technical Library for the GBTS, on non-proprietary electronic media. The Contractor shall furnish a list of all data contained in the libraries to the Government. The Contractor shall assign personnel to the TSSC to manage the Master Technical Library. The Contractor shall not use the Master Technical Library for operation and/or maintenance purposes, but shall be retained by the Contractor as a reproducible master set, with a backup maintained at a separate location. The Contractor shall obtain reproduction rights to all data contained in the Master Technical Library. The Contractor shall provide the Government Type-D Access to the Master Technical Data Library.
(DI-EGDS-80918, Technical Data Package Index, GBTS Master Technical Library, B001)

3.5.3.2.7.10 Initiation and Control of Training System Support Center Tasks

The Contractor shall implement and maintain a web-based TSCO tracking system with Type-B Access which documents all requested changes to the GBTS system components. The Contractor shall ensure TSCO data is available on the DAL.
(DI-MGMT-81453A, Data Accession List (DAL), C100)

3.5.3.2.7.11 Training System Support Center Technology Refresh

The Contractor shall accomplish technology refresh updates to the TSSC equipment and operating systems every 3 years.

3.5.3.2.8 Ground Based Training System Logistics Support System

The Contractor shall implement, operate, and maintain a logistic support system throughout the life of the contract that provides the capability for maintenance data collection, inventory control, logistics support analysis, trend analysis, and technical publications/ engineering data management and distribution. The Contractor shall provide a logistics support center within the TSSC to plan, control, and coordinate all logistics activities. The Contractor shall document the GBTS logistic support system processes within the CLS Management Plan.
(DI-MGMT-80004A, Management Plan, GBTS CLS Management Plan, C077)

3.5.3.2.8.1 Ground Based Training System Maintenance Data Collection System

The Contractor shall develop, maintain, and update a GBTS Maintenance Data Collection System to track and report all maintenance actions and results, spares/repair parts consumption and labor consumption for the GBTS hardware components by site. The Contractor shall maintain the maintenance data collection system records for the life of the contract. The Contractor shall provide the Government Type-D Access to these data records. The Contractor shall provide training on the use and report generation features of the Maintenance Data Collection System.
(DI-ILSS-80191D, Contractor Device Performance Report, GBTS Availability Report, C037)
(DI-ILSS-80872, Training Materials, GBTS Maintenance Data Collection System Training, C044)
(DI-ILSS-81226, Interim Contractor Support (ICS) Parts Usage and Maintenance Data Collection Report, GBTS CLS Data Collection Report, C280)

3.5.3.2.8.2 Ground Based Training System Spares

The Contractor shall be solely responsible for providing spares necessary to achieve the availability requirements in the GBTS SS. The Contractor shall deliver, update and maintain a GBTS spare parts list, which includes both repairable and consumable parts, that supports the GBTS availability requirements. The Contractor shall deliver an initial GBTS spare parts list based on the approved PCA GBTS configuration.
(DI-ILSS-80134A, Proposed Spare Parts List, Proposed Spare Parts List for GBTS, C036)

3.5.3.2.8.3 Calibration of Support Equipment, Tools, Test Equipment

The Contractor shall provide, manage, maintain, update and ensure the calibration of all SE (including SE required for training), tooling and test equipment required to meet the training device availability requirements in the GBTS SS. The Contractor shall ensure all TMDE used in support of this contract is calibrated and certified by its local/supporting base Precision Measurement Equipment Laboratory (PMEL) IAW Air Force Metrology and Calibration (AFMETCAL) Program guidelines as outlined in AFI 21-113 and TO00-20-14. In those instances in which an item of TMDE cannot be supported by the host PMEL, the Contractor shall provide the PMEL with the technical data necessary to complete an AFTO Form 45,

Request for Calibration Responsibility Determination, which the PMEL will forward to AFMETCAL. AFMETCAL will then make the determination and if Air Force calibration is not possible, authorize calibration by an AFMETCAL-approved commercial laboratory performing measurements traceable to the NIST.
(DI-ALSS-81530, Logistics Management Information (LMI) Summaries, C007)

3.5.3.3 Ground Based Training System Device Facilities Support

The Contractor shall control corrosion IAW the Contractor's corrosion prevention process. The Contractor shall manage and maintain a process to monitor temperature and humidity levels in the GBTS facilities to prevent corrosion to GBTS devices. The Contractor shall notify the appropriate Government office if any action is necessary.

3.5.4 GBTS Contractor Logistics Support (CLS) Re-competition/Transition Support

3.5.4.1 Re-competition Support

The Contractor shall support Government re-competition of the APT GBTS CLS during the two (2) years prior to the end of the contract. The Contractor shall support Industry Day tours and inspections. The Contractor shall provide a spares list that supports the GBTS availability requirements.
(DI-ILSS-80134A, Proposed Spare Parts List, Proposed Spare Parts List for GBTS, C036)

3.5.4.2 Transition Support

The Contractor shall, during the last ninety (90) days of CLS period of performance, provide support to the Government and a follow-on GBTS CLS Contractor to ensure an orderly transition and minimize any impact on the operational readiness of the training system. The Contractor shall provide a follow-on GBTS CLS Contractor entry to all training system component sites and training system components and Type-C Access to all technical documentation and publication. The Contractor shall conduct the transition such that disruption to ongoing training, training management, and support activities is minimized. The Contractor shall provide appropriate GBTS familiarization and sim operator training based on existing training materials. The Contractor shall deliver the initial GBTS spares prior to transition.

3.5.4.2.1 Facility and Materiel Transition

The Contractor shall comply with Government processes and procedures when transitioning GBTS facilities and GFP to a follow-on GBTS CLS Contractor. The Contractor shall coordinate with the Government and a follow-on GBTS CLS Contractor to transition all GBTS facilities and GFP to a follow-on GBTS CLS Contractor or to the Government. The Contractor shall transfer or remove all contractor-owned equipment and materials from the training facilities.

3.5.4.2.2 Inventories and Audits

The Contractor shall perform an inventory of all GBTS assets with the Government and a follow-on GBTS CLS Contractor within 30 days of Government direction. Following the inventory, the Contractor shall support a Government audit IAW Annex B to ascertain that a complete set of documentation and software packages exists with the latest revisions incorporated. The Contractor shall ensure that this documentation and software are suitable for continued GBTS CLS. The Contractor shall assist the Government in the inventory of all Government-owned GBTS assets during the transition period. The Contractor shall deliver an initial inventory of all GBTS assets to the Government. The Contractor shall jointly reconcile all inventory items and anomalies with the Government.
(DI-MISC-81107A, Inventory/Utilization Data Report, GBTS Inventory Utilization Data Report, C164)

3.5.4.2.3 Transition Plan

The Contractor shall develop and deliver a transition plan which ensures training, management, and support continuity. The Contractor shall implement the transition plan as directed by the Government. The Contractor's plan shall include a schedule of transition activities. The Contractor's transition plan shall explain how each of the following tasks will be accomplished:

a) Inventory and transfer of GBTS assets
b) Audit to ascertain that a complete set of program and technical documentation and software package exists, with the latest revisions incorporated.
c) Update of the maintenance database and transferred in a form that allows viewing and manipulation in a COTS relational database package.
d) Transfer or removal of all Contractor owned equipment and materials
e) Transfer of all archived training system data.
f) Support, on a non-interference basis, will be provided during a 90 day transition period to include office support for two follow-on GBTS CLS Contractor personnel at the TSSC with entry privileges and Type-C Access to TSSC records and systems.
g) Provide Sim Operator and Familiarization Training to the follow-on CLS Contractor.

(DI-MGMT-80004A, Management Plan, GBTS CLS Transition Plan, C078)

3.5.4.2.4 Transition Data Package

The Contractor shall provide all documentation in the GBTS libraries on the DAL. The Contractor shall provide all data contained within the GBTS Maintenance Data Collection System in a format specified by the Government. The Contractor shall deliver the Government requested data from the Master Technical Data Library.
(DI-MGMT-81453A, Data Accession List (DAL), C100)
(DI-SESS-80776A, Technical Data Package, TDP for GBTS and MTS, B005)

3.6 Data

3.6.1 Technical Publications

The Contractor shall develop, deliver, and maintain TOs that are required to support flight operations, GBTS devices, O-level maintenance, D-level maintenance, and additional maintenance and repair capability (I-Level) IAW Technical Manual Contract Requirements (TMCR).
(TM-86-01P, Technical Manual Contract Requirements, A007)
(DI-TMSS-80067B, Technical Manual (TM) Contractor Furnished Aeronautical Equipment or Contractor Furnished Equipment (CFAE/CFE), A002)
(DI-TMSS-81532C, Aerospace Emergency Rescue and Mishap Response Information (Emergency Services) Source Data, A003)
(DI-ALSS-81531, Time Compliance Technical Order (TCTO) Supply Data, A001)
(DI-TMSS-81810, Technical Manual Organization Plan (TMOP), A005)
(DI-TMSS-81805, S1000D Data Module Requirements List, A004)
(DI-TMSS-81812, Technical Manual Schedule and Status Report, A006)

3.6.2 Engineering Data

3.6.2.1 Aircraft and Ground Based Training System Technical Data Packages (TDPs)

The Contractor shall develop, produce, maintain, and deliver Aircraft TDPs that accurately depicts the aircraft down through the SRU level IAW MIL-STD-31000A. The Contractor's Aircraft TDPs shall include but are not limited to CAD data, CAD models, model based definition data sets, METADATA, Master BOM, software documentation, object/executable code, source code, hardware specifications, maintenance test procedures, engineering drawings and all other related documentation. The Contractor shall develop, produce, maintain, and deliver GBTS TDPs that includes the computer software and technical data necessary for the Operation, Maintenance, Installation and Training (OMIT) purposes pertaining to the GBTS and associated with its life cycle support. The TDP shall include computer software, software documentation, IMI and Electronic Media documentation, hardware specifications, technical publications, test procedures, engineering drawings and all other related documentation. The Government requires these processes and data to be transferable to other contractors; therefore, any new configuration management systems shall not contain proprietary or non-commercially available components. The Contractor's TDPs shall represent the approved, tested, and accepted configuration. The Contractor's TDPs shall provide the necessary design, engineering, manufacturing, testing and quality assurance requirements information necessary to enable the procurement or manufacture of an interchangeable item that duplicates the physical and performance characteristics of the original product without additional design engineering effort or recourse to the original design activity or any third party. The Contractor shall levy on all

subcontractors at any tier, the same requirements for TDPs that are levied on the Contractor by this contract.
(DI-SESS-80776A, Technical Data Package, TDP for Aircraft, B002)
(DI-SESS-80776A, Technical Data Package, TDP for GBTS and MTS, B005)

3.6.2.2 Aircraft and GBTS Software Integration Laboratory Data Packages

The Contractor shall develop and deliver TDPs needed to operate and sustain the Government owned Aircraft and GBTS SILs. The Contractor shall provide source, object/executable, and software documentation for all software. The Contractor shall levy on all subcontractors at any tier, the same requirements for TDPs that are levied on the Contractor by this contract.
(DI-SESS-80776A, Technical Data Package, Aircraft SIL TDP, B003)
(DI-SESS-80776A, Technical Data Package, GBTS SIL TDP, B003)
(DI-IPSC-81441A, Software Product Specification (SPS), Laboratory Software Items, C065)

3.6.2.3 Aircraft Software Development Laboratory Data Package

The Contractor shall develop and deliver a TDP needed to operate and sustain a Government owned APT SDL. The Contractor shall provide source code, object/executable, and software documentation for all software. The Contractor shall levy on all subcontractors at any tier, the same requirements for TDPs that are levied on the Contractor by this contract.
(DI-SESS-80776A, Technical Data Package, Aircraft SDL, B003)
(DI-IPSC-81441A, Software Product Specification (SPS), Laboratory Software Items, C065)

3.6.2.4 Maintenance Training System Data Package

The Contractor shall provide an MTS data package to provide all necessary APT OMIT and engineering data to the Government necessary to support the design and manufacture of maintenance training devices. The Contractor shall deliver sufficient APT Aircraft data to design and build a MTS that trains an O-level, D-level, and additional maintenance and repair capability. The Contractor shall provide draft versions of all MTS data when necessary to support the MTS developmental timeline.
(DI-SESS-80776A, Technical Data Package, TDP for GBTS and MTS, B005)
(TM-86-01P, Technical Manual Contract Requirements, A007)

3.6.2.5 Operation, Maintenance, Installation, and Training Data

The Contractor shall provide at least the minimum technical data, computer software, and associated license rights that are necessary to meet the requirements of Special Contract Requirement (SCR) H001.

3.6.2.6 Non-Operation, Maintenance, Installation, and Training Data

The Contractor shall provide the associated data rights that are consistent with DFARS 227.7202 and the clauses of DFARS 252.227-7013, 252.227-7014, and 252.227.7015 allowing for

specially negotiated licenses as appropriate. The Contractor shall apply these DFARS clauses to the delivery of Non-OMIT Data and any data on the DAL.
(DI-MGMT-81453A, Data Accession List (DAL), C100)

3.6.2.7 Cartridge Actuated Device/Propellant Actuated Device (CAD/PAD) Lot Acceptance Test (LAT) Reports

The Contractor shall develop and deliver a LAT plan which outlines the Contractor's plans and procedures for CAD/PAD LAT/First Article testing. LAT sample sizes shall be IAW the table below.

Lot Size	LAT Sample Size (Required)
2-8	2
9-15	2
16-25	3
26-50	5
51-90	5
91-150	8
151-280	13
281-500	20
501-1200	32
1201-3200	50

For each CAD/PAD item delivered, the Contractor shall provide a LAT report. The LAT report shall include CAD/PAD production documentation (including performance data), radiographic reports and film (X-Ray, N-Ray), nondestructive test reports (e.g., leak check), and destructive test reports (e.g., strand burn rate). The Contractor shall ensure that CAD/PAD suppliers deliver radiographic records and maintain radiograph files for not less than the total life of the item. When applicable, the contractor shall provide configuration marriage records for CAD/PAD. All CAD/PAD items shall be marked IAW CAD/PAD Marking Instruction Version 1.1, dated 01 May 2008.
(DI-QCIC-80553A, Acceptance Test Plan, Cartridge Actuated Device/Propellant Actuated Device (CAD/PAD) Lot Acceptance Test Plan, C208)
(DI-NDTI-80809B, Test/Inspection Report, Cartridge Actuated Device/Propellant Actuated Device (CAD/PAD) Lot Acceptance Test Report, C190)
(DI-MISC-81481, Configuration Marriage Record, Cartridge Actuated Device/Propellant Actuated Device (CAD/PAD) Configuration Marriage Record, C180)

3.6.3 Asserted Data Rights

The Contractor shall develop and provide all data and data rights IAW the requirements of this contract. Unless the Contractor asserts a data rights restriction IAW SCR H002 of the contract, the Government will obtain unlimited data rights IAW DFARS 252.227-7013. The Contractor shall develop and implement processes and procedures to ensure early identification of all asserted restrictions on all technical data and computer software, including restrictions asserted

by subcontractors and suppliers, and to manage the use of proprietary technologies IAW SCR H002.

3.6.4 Data Rights/License

The Contractor shall provide appropriate technical data and license rights for the entire system. For any unmodified systems/subsystems, the Contractor shall provide the rights for technical data as required by DFARS 252.227-7015. For all other systems, this includes (1) the complete technical data package providing all production-level details; (2) all computer software as defined at DFARS 252.227-7014, including object/executable code, source code, and design information; and (3) the associated license rights consistent with the applicable DFARS data rights clauses (including/allowing specially negotiated license rights when appropriate).

3.7 Peculiar Support Equipment (PSE)

3.7.1 Support Equipment Proliferation

The Contractor shall minimize the development of new PSE and utilize CSE where possible. The Contractor shall consider the application of CSE currently in the DoD inventory as well as COTS equipment. Some areas of particular concern include, but are not limited to, electrical power (i.e., generators), hydraulic test stands, compressed air servicing requirements, and aircraft ground cooling requirements.

3.7.2 Peculiar Support Equipment Requirements

The Contractor shall design the PSE IAW the Aircraft SS. The Contractor shall plan, develop, document, deliver, and verify PSE.

3.7.3 Support Equipment Recommendation Documents (SERD)

The Contractor shall develop and deliver SERDs for all modified and new Support Equipment and Test Measurement Diagnostic Equipment (SE/TMDE) that are required to support, operate, and sustain (to include organic supply and repair of) the APT System. The Contractor's SERDs shall be developed and delivered in compliance with SAE's ANSI/GEIA-STD-0007-B, May 2013. The Contractor's SE shall be considered controlled inventory and, therefore, shall be IUID-marked IAW the Contractor's IUID Plan. The Contractor shall identify and categorize the SE/TMDE using the following most-desired to least-desired hierarchy:

a) Approved USAF SE
b) Items already in the Government inventory or being developed under Government contract
c) Modification of any of the above
d) Commercially available items that meet technical and logistical requirements
e) Newly developed items

(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List-Aircraft, C259)

(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List-Propulsion, C260)

3.7.3.1 Calibration, Maintenance, and Repair

The Contractor's SERDs shall identify the required technical data to ensure proper calibration, maintenance, and repair of SE and TMDE IAW AFI 21-113, TO 00-20-14, and the data items listed in SAE's ANSI/GEIA-STD-0007-B. In those instances in which an item of TMDE cannot be supported by the PMEL, the Contractor shall provide the technical data necessary to complete an AFTO Form 45, Request for Calibration Responsibility Determination to the PME.
(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List-Aircraft, C259)
(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List-Propulsion, C260)

3.7.4 Peculiar Support Equipment Improvement/Updates

The Contractor shall plan, design, develop, document, deliver, and verify PSE improvements and updates required to maintain the system. This activity may include the production of duplicate or modified factory test or tooling equipment to be delivered to the Government for use in maintaining the system. Post-SERD approval, the Contractor shall submit the details of the proposed updates or improvements through an ECP.
(DI-SESS-80639D, Engineering Change Proposal, C225)

3.7.5 Peculiar Support Equipment Test Program Sets (TPS) Development

The Contractor shall develop and deliver all aircraft system/sub-systems TPS and associated TDP for SERD-approved SE and Automated Test Systems (ATS) IAW MIL-PRF-32070A. The Contractor's TPS shall consist of those items necessary to test a Unit Under Test (UUT) on an Automated Test Equipment (ATE) to include the electrical, mechanical, instructional, and logical decision elements. The Contractor's TPS shall be composed of, but not limited to, those peculiar items required to test a UUT with ATE, such as Technical Manuals (TMs), the Test Program (TP), Test Program Instructions (TPI), Interface Connecting Device, Test Program Set Documents (TPSD), and any additional required documents IAW MIL-PRF-32070A (e.g., English Language Test Document (ELTD), test requirements document, and test strategy reports). The Contractor shall support the ATS Selection process by providing the following for the UUT:

a. The UUT parametric testing information with tolerances, accuracies, and quantities of concurrent signal requirements.
b. Unique parts data, if needed to understand the UUT testing requirements. This includes, but is not limited to, information such as Read Only Memory (ROM) data, data needed to program logic devices such as Complex Programmable Logic Devices (CPLDs) and Field Programmable Gate Arrays (FPGAs), and program source listings for any UUT built-in-programming.
c. UUT mechanical, hydraulic, and pneumatic interface requirements if applicable. The Contractor shall deliver drawings to support this information.

d. UUT environmental support requirements, such as cooling, if applicable.

e. Support for up to 5 one-hour technical discussions held via teleconference IAW Annex B

(DI-SESS-80776A, Technical Data Package, TDP for Aircraft, B002)
(DI-ATTS-80281A, Test Program Set (TPS) Integration LogBook, PSE/CSE TPS, C009)
(DI-ATTS-80282B, Test Program Set (TPS) and Operational Test Program Set (OTPS) Acceptance Test Procedures (ATPs), PSE/CSE TPS, C010)
(DI-ATTS-80283B, Test Program Set (TPS) Acceptance Test Report (ATR), PSE/CSE TPS C011)
(DI-ATTS-80284B, Test Program Set Documentation (TPSD), PSE/CSE TPS, C012)
(DI-ATTS-80285C, Engineering Support Data, PSE/CSE TPS, C013)
(DI-TMSS-81711A, Automatic Test Equipment (ATE) Interface Hardware Manual, PSE/CSE Test Program Set (TPS), C274)
(DI-TMSS-81760, Operational Test Program Instruction/Test Program Instruction (OTPI/TPI), PSE/CSE Test Program Set (TPS), C275)

3.7.6 Support Equipment Working Group (SEWG)

The Contractor shall support the SEWG as outlined in Annex A. The Contractor shall propose any SE updates or improvements as required.

3.7.7 Peculiar Support Equipment Delivery

3.7.7.1 Peculiar Support Equipment Support during Engineering and Manufacturing Development (EMD)

The Contractor shall provide all SERD-approved PSE and TMDE required to support the five EMD aircraft during the Combined Contractor and Government DT&E and IOT&E, along with training, and TO verification, as part of POS. The Government will not take delivery of the Contractor-owned PSE. At the conclusion of POS, the Contractor shall retain the Contractor-owned PSE. If the lead times for SERD-approved PSE delivery will impact the start of Government DT&E, the Contractor shall propose the use of non-SERD-approved SE. The Contractor shall provide proposed alternative SE that are of the same form, fit, and function as the SERD-approved equipment. The terms form, fit, and function specifically address the aircraft interface and operating specifications. The Contractor shall not proceed with non-SERD-approved equipment to support Government DT&E prior to Government approval. The Contractor shall ensure PSE and TMDE are available at the DT&E and IOT&E locations no later than 30 days prior to the first aircraft arrival for DT&E and IOT&E, respectively.
(DI-MISC-80508B, Technical Report – Study/Services, Request for Temporary Use of Non-SERD Approved SE, C154)

3.7.7.1.1 Peculiar Support Equipment Availability during EMD

The Contractor shall manage, maintain, sustain, calibrate, and ensure availability of the Contractor-owned PSE to meet all scheduled test events, training events, and TO verification activities during DT&E and IOT&E as part of POS. The Contractor shall support Government use of PSE for any DT&E and IOT&E unscheduled events, on a non-interference basis, as required.

3.7.7.1.2 Peculiar Support Equipment Calibration

The Contractor shall ensure all items are assembled, functionally checked, and calibrated IAW TO 33K-1-100-1, TO 33K-1-100-2, and Calibration and Measurement Summary (CMS) TOs prior to use at the test location. The Contractor shall provide a report or certificate for any item that requires calibration.
(DI-QCIC-80798B, Calibration Certificate, Support Equipment Calibration, C209)

3.7.7.2 Peculiar Support Equipment Delivery during Production

The Contractor shall deliver SERD-approved quantities of PSE and TMDE that are required to support each lot of production aircraft, to include the fielded EMD aircraft at the appropriate MOB locations IAW the contract. The Contractor shall deliver PSE and TMDE to each MOB location no earlier than 120 days and NLT 60 days prior to the delivery of each production lot of aircraft. The Contractor's deliveries of O-level, D-level, and additional maintenance PSE shall follow the applicable Allowance Standards for required quantities, the Site Activation schedule, and the Depot Maintenance Activation Plan.

3.7.7.2.1 Peculiar Support Equipment Corrosion

The Contractor shall deliver the PSE painted for military use, to include corrosive treatments in compliance with current TO 35-1-3, Chapter 3; MIL-PRF-85285; and the APT CPCP.

3.7.7.2.2 Peculiar Support Equipment Calibration during Production

The Contractor shall ensure all items are assembled, functionally checked, and calibrated IAW TO 33K-1-100-1, TO 33K-1-100-2, and CMS TOs prior to delivery. The Contractor shall provide a report or certificate for any item that requires calibration.
(DI-QCIC-80798B, Calibration Certificate, Support Equipment Calibration, C209)

3.7.8 Peculiar Support Equipment Maintenance during Production

The Contractor shall be responsible for all repair, component replacement, and software maintenance for PSE as part of ICS until the transition to organic Government control.

3.7.9 Peculiar Support Equipment Management during Production

The Contractor shall be responsible for PSE management responsibilities until the transition to organic Government control, to include any documentation required for accountability,

sustainability and replacement (hardcopy and electronic). The Contractor shall follow the transition timeline in parallel with the ICS transition.

3.7.10 Peculiar Support Equipment Inventory Control Point during Production

The Contractor shall be the Inventory Control Point until the transition to organic Government control. The Contractor shall be responsible for any documentation required for accountability (hardcopy and electronic). The Contractor shall deliver all maintenance and usage records for PSE. The Contractor shall follow the transition timeline in parallel with the ICS transition. (DI-MISC-80508B, Technical Report-Study/Services, PSE Maintenance Documentation, C141)

3.7.11 Peculiar Support Equipment Maintenance Test and Support Equipment Requirements (MT&SE) List

The Contractor shall provide and maintain an MT&SE listing.
(DI-SESS-80294B, Maintenance Test and Support Equipment List, C223)

3.8 Common Support Equipment (CSE)

3.8.1 Common Support Equipment Requirements

The Contractor shall select the CSE IAW the Aircraft SS. The Contractor shall plan, document, and verify CSE.

3.8.2 Support Equipment Recommendation Documents

The Contractor shall develop and deliver SERDs for all recommended CSE and TMDE that are required to support, operate, and sustain (to include organic supply and repair of) the APT System. The Contractor's SERDs shall be developed and delivered in compliance with SAE's ANSI/GEIA-STD-0007-B, May 2013. The Contractor shall identify and categorize the SE/TMDE using the following most-desired to least-desired hierarchy:

a) Approved USAF SE
b) Items already in the Government inventory or being developed under Government contract

(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List-Aircraft, C259)
(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List-Propulsion, C260)

3.8.3 Common Support Equipment Test Program Set Development

The Contractor shall develop and deliver all aircraft system/sub-systems Test Program Sets (TPS) and associated TDP for SERD-approved SE and ATS IAW MIL-PRF-32070A. The Contractor's TPS shall consist of those items necessary to test a Unit Under Test (UUT) on ATE) to include the electrical, mechanical, instructional, and logical decision elements. The Contractor's TPS shall be composed of, but not limited to, those peculiar items required to test a UUT with ATE such as: Technical Manual (TM), the TP, TPI, Interface Connecting Device,

TPSD and any additional required documents IAW MIL-PRF-32070A (e.g., ELTD, test requirements document, and test strategy reports). The Contractor shall support the ATS Selection process by providing the following for the UUT:

a) The UUT parametric testing information with tolerances, accuracies, and quantities of concurrent signal requirements.
b) Unique parts data, if needed to understand the UUT testing requirements. (This includes, but is not limited to, information such as ROM data, data needed to program logic devices such as CPLDs and FPGAs, and program source listings for any UUT built-in-programming).
c) UUT mechanical, hydraulic, and pneumatic interface requirements if applicable.
d) UUT environmental support requirements, such as cooling, if applicable.
e) Support for up to 5 one-hour technical discussions held via teleconference IAW Annex B.

(DI-SESS-80776A, Aircraft Technical Data Package, TDP for Aircraft, B002)
(DI-ATTS-80281A, Test Program Set (TPS) Integration LogBook, PSE/CSE TPS, C009)
(DI-ATTS-80282B, Test Program Set (TPS) and Operational Test Program Set (OTPS) Acceptance Test Procedures (ATPs), PSE/CSE TPS, C010)
(DI-ATTS-80283B, Test Program Set (TPS) Acceptance Test Report (ATR), PSE/CSE TPS C011)
(DI-ATTS-80284B, Test Program Set Documentation (TPSD), PSE/CSE TPS, C012)
(DI-ATTS-80285C, Engineering Support Data, PSE/CSE TPS, C013)
(DI-TMSS-81711A, Automatic Test Equipment (ATE) Interface Hardware Manual, PSE/CSE Test Program Set (TPS), C274)
(DI-TMSS-81760, Operational Test Program Instruction/Test Program Instruction (OTPI/TPI), PSE/CSE Test Program Set (TPS), C275)

3.8.4 Common Support Equipment Required to Support EMD

The Contractor shall provide all SERD-approved CSE and TMDE that are required to support the EMD aircraft along with training, and TO verification, as part of POS. The Government will not take delivery of the Contractor-owned CSE. At the conclusion of POS, the Contractor shall retain the Contractor-owned CSE. If the lead times for SERD-approved CSE delivery will impact the start of Government DT&E, the Contractor shall propose the use of non-SERD-approved SE. The Contractor shall provide proposed alternative SE that are of the same form, fit, and function as the SERD-approved equipment. The terms form, fit, and function specifically address the aircraft interface and operating specifications. The Contractor shall not proceed with non-SERD-approved equipment to support Government DT&E prior to Government approval. The Contractor shall ensure CSE and TMDE are available at the DT&E and IOT&E locations no later than 30 days prior to the first aircraft arrival for DT&E and IOT&E, respectively.
(DI-MISC-80508B, Technical Report-Study/Services, Request for Temporary Use of Non-SERD Approved SE, C154)

3.8.5 Common Support Equipment Maintenance Test and Support Equipment Requirements List

The Contractor shall provide and maintain an MT&SE listing.
(DI-SESS-80294B, Maintenance Test and Support Equipment List, C223)

3.8.6 Common Support Equipment Availability during EMD

The Contractor shall manage, maintain, sustain, calibrate, and ensure availability of the Contractor-owned CSE to meet all scheduled test events, training events, and TO verification activities during DT&E and IOT&E as part of POS. The Contractor shall support Government use of CSE for any DT&E and IOT&E unscheduled events, on a non-interference basis, as required.

3.8.6.1 Common Support Equipment Calibration

The Contractor shall ensure all Contractor-owned CSE items are assembled, functionally checked, and calibrated IAW TO 33K-1-100-1, TO 33K-1-100-2, and CMS TOs prior to use at the test location. The Contractor shall provide a report or certificate for any item that requires calibration.
(DI-QCIC-80798B, Calibration Certificate, Support Equipment Calibration, C209)

3.9 Operational/Site Activation

The Contractor shall be a member of the Site Activation Task Force (SATAF). The Contractor shall assist during Government review of basing requirements, to include product support element deficiency resolution. The Contractor shall participate in Programming Plan Conferences, SATAF team meetings and surveys leading up to operational site activations IAW Annex B. The Contractor shall provide technical support to help the Government develop and review facility designs and activation plans to assure all beddown requirements are addressed. The Contractor shall develop and deliver an operational site activation-phased support plan.
(DI-ALSS-80037B, Phased Support Plan, Site Activation & Operational Site Activation PSP, C006)

3.9.1 Site Construction

3.9.1.1 Facility Engineering Support

The Contractor shall designate a program facility engineer responsible for managing the Contractor’s real property design requirements for each Government beddown location and depot.

3.9.1.2 Facility Design Criteria (FDC)

The Contractor shall develop FDC for each site. The Contractor shall deliver the initial FDC for the first beddown location no later than 90 days after contract award. The Contractor shall ensure the FDC includes the Contractor's recommended facilities list required to support the aircraft, GBTS, and associated systems. The Contractor shall consider operations, maintenance, and logistics elements when developing the FDC. The Contractor's FDC shall identify new or unique facility requirements and suggested modifications to existing facilities and new construction. The Contractor's FDC shall establish all specified requirements for each facility interface, to include the layout for all training system equipment in the facility for routine training. The Contractor shall provide building and ramp space specifications for the aircraft, GBTS, and support facilities. The Contractor's specifications shall include operations, maintenance, supply, SE, and other logistics facilities. The Contractor's initial FDC specifications shall include at a minimum, but not be limited to, facility dimensions, power, lighting, electro-magnetic, net explosive weights, fire suppression, water, security, communication, fixtures, hydraulics, floor strengths, environmental, overhead crane and airfield requirements to house and support the Aircraft and GBTS. The Contractor shall not include classified information in the FDC. The Contractor shall use AFI 32-1023, AFI 32-1024, and the Whole Building Design Guide (Air Force Criteria) website, http://wbdg.org, as guidance.
(DI-FACR-80966, Trainer Facilities Report (TFR), FDC for GBTS, C019)
(DI-SESS-81638, Equipment Facility Requirements (EFR) Plan, Facility Design Criteria for Aircraft, C250)

3.9.1.2.1 Facility Power Guidelines

The Contractor shall ensure electrical power supplied IAW ANSI C84.1, Utility Power Profile, is compatible with GBTS and SE. If required, the Contractor shall provide, install, and maintain Power Conditioning and Continuation Interfacing Equipment (PCCIE). The Contractor shall coordinate all PCCIE installations with the Base Civil Engineer (BCE). The Contractor shall document facility power guidelines in the FDC.
(DI-FACR- 80966, Trainer Facilities Report (TFR), FDC for GBTS, C019)
(DI-SESS-81638, Equipment Facility Requirements (EFR) Plan, Facility Design Criteria for Aircraft, C250)

3.9.1.2.2 Fire Protection Systems

The Contractor shall ensure all training equipment, fire detection alarms, and suppression systems interface with facility fire protection systems IAW Unified Facilities Criteria (UFC) 3-600-01, Air Force Occupational Safety and Health (AFOSH) STD 91-118, and National Fire Protection Association (NFPA) 72E. The Contractor shall document fire protection in the FDC.
(DI-FACR- 80966, Trainer Facilities Report (TFR), FDC for GBTS, C019)
(DI-SESS-81638 Equipment Facility Requirements (EFR) Plan, Facility Design Criteria for Aircraft, C250)

3.9.1.3 Facility Design Reviews

The Contractor shall ensure interface compatibilities between the facility and the aircraft, GBTS, and SE. The Contractor shall participate in Facility Design Reviews (Initial, 35%, 65%, 95%) to ensure functionality at each site IAW Annex B. The Contractor shall notify the Government in writing if no changes to the facility designs are necessary. If the Contractor deems changes to the facility designs are necessary, the Contractor shall provide the Government with a detailed report of required changes and associated impacts.
(DI-MISC-80508B, Technical Report – Study/Services, Facility Review Reports, C153)

3.9.1.4 Facility Construction Reviews (FCR)

The Contractor shall support all FCRs (Initial, 35%, 65%, 95%) IAW Annex B. The Contractor shall notify the Government in writing if no changes to the facilities are necessary. If the Contractor deems changes to the facilities are necessary, the Contractor shall provide the Government with a detailed report of required changes and associated impacts.
(DI-MISC-80508B, Technical Report – Study/Services, Facility Review Reports, C153)

3.9.1.5 Facility Readiness Reviews (FRRs)

The Contractor shall provide representation at all FRRs prior to installation of equipment into Government facilities IAW Annex B. The Contractor shall notify the Government in writing if no changes to the facilities are necessary. The FRR will help identify facility subsystem defects to be corrected to enable proper system/sub-system interface with facilities. These reviews will be conducted during or after the 95% construction review. If the Contractor deems changes to the facilities are necessary, the Contractor shall provide the Government with a detailed report of required changes and associated impacts.
(DI-MISC-80508B, Technical Report – Study/Services, Facility Review Reports, C153)

3.9.1.6 Facility Alterations

The Contractor shall coordinate all facility work with BCE and the CORs as directed. The Contractor shall describe required modifications via the AF Form 332 (Work Request) prior to modifying a Government facility. The Contractor shall not make alterations without written approval from BCE and the COR.

3.9.2 Site Conversion

3.9.2.1 Host Base Interface

The Contractor shall notify the Program Office, HQ AETC Program Integration Office, and the applicable host base representatives seven workdays prior to any hardware delivery. The Contractor shall provide written notification that includes a weekly schedule that clearly identifies specific activities, locations, and special or unique requirements necessary to

accomplish each activity. The Contractor shall ensure all contract employees obtain personnel and vehicle passes from the host base Integration Office POC (IAW base specific timeline and policy) prior to deliveries. The Contractor shall grant host base safety, fire, and health-officials entry to work areas for Government review and inspection of Contractor compliance with installation safety reporting procedures and base fire prevention directives. The Contractor shall report facility maintenance problems to the host BCE on the date the problem is identified.

3.9.2.2 Operational/ Site Activation Phased Support Plan (SAPSP)

The Contractor shall develop, implement, maintain, and deliver a SAPSP to enable seamless transition from T-38 to APT assets. The Contractor shall ensure the SAPSP clearly identifies all unique and peculiar requirements to enable platform transition. The Contractor shall ensure activation activities are phased with sufficient time to test, identify, and resolve capability gaps before APT assets are delivered at each beddown location.
(DI-ALSS-80037B, Phased Support Plan, Site Activation & Operational Site Activation PSP, C006)

3.9.2.3 Ground Based Training System Assembly, Installation and Checkout on Site

The Contractor shall teardown, pack, ship, unpack, reassemble on site, checkout, test, and provide total maintenance support of the training devices, including all materials, spares, equipment (both unique and common), and qualified maintenance personnel needed to support this effort. The Contractor shall provide and install all raised computer flooring as needed for each training device and furnish all plant labor, equipment, supervision, and materials and completely perform all operations necessary to install the raised flooring. The Contractor shall make all penetration and cutouts of the computer flooring necessary for the installation of the devices and equipment and install trim on all cut edges of computer flooring panels. The Contractor shall also remove and replace any floor panels for equipment installation as necessary. The Contractor shall use plenum rated cables or provide an under-floor non-halocarbon clean agent fire extinguishing or automatic sprinkler system. During the actual installation, the Contractor shall open, safeguard, and close all means of entry to the Government-furnished facility necessary for the installation of the system. The Contractor shall be responsible for the protection and security of Government property and GBTS equipment at all times. The Contractor shall ensure that the equipment performs as required IAW the GBTS SS after on-site installation. The Contractor shall be responsible for any damage to the equipment, property, or facilities during removal, transportation, and installation.

3.9.3 Sustainment

3.9.3.1 Product Support Management

The Contractor shall provide product support planning and management for the design and execution of a logistics system to support the APT System in a manner consistent with overall

program requirements. The Contractor shall develop and maintain a Product Support Analysis Plan (PSAP) identifying tasks that ensure supportability considerations for the APT System. The Contractor's plan shall address and report results for the following activities IAW TA-STD-0017: Product Support Strategy, Task Analysis, LORA, Fault Tree Analysis, and Diagnostics Tradeoffs. The Contractor shall include assumptions consistent with the Modular Engine Design concept in the LORA and Task Analysis. The Contractor shall plan for a two-level maintenance concept utilizing, to the maximum extent possible, existing Air Force SE, tools, and facilities. The Contractor shall define new, or refine existing, baseline support requirements at all maintenance levels as a result of engine field changes and modifications to the current support system and update the PSAP. The Contractor shall support the Integrated Logistics Support Team (ILST) meetings IAW Annex A. The Contractor shall participate in a Government-led Product Support BCA to support future sustainment decisions.
(DI-MGMT-80004A, Management Plan, Product Support Analysis Plan, C083)
(DI-MISC-80711A, Scientific and Technical Reports, Product Support Analysis, C161)

3.9.3.2 Allowance Source Code and Allowance Standard Reviews

The Contractor shall participate in the Allowance Source Code and Allowance Standard Reviews IAW Annex B.

3.9.3.3 Aircraft Spares and SE/TMDE Parts List

The Contractor shall develop, implement, and maintain the aircraft spares list (common, peculiar, mission-specific spares, and bench stock) and SE/TMDE lists for normal operations at MOBs. The Contractor's aircraft spares and SE/TMDE lists shall be based on a 27-hour monthly utilization rate per aircraft. The Contractor shall identify and recommend logical spare (consumable and reparable) parts sufficient to meeting system/equipment operation and supportability IAW the Air Force Initial Provisioning Performance Specification. SAE GEIA-STD-0007B, Chapter 2 shall be used as a guide. The format shall be compatible with the existing D220 Government Provisioning data system.
(DI-SESS- 81758A, Logistics Product Data, LPD for Aircraft, C257)
(DI-SESS- 81758A, Logistics Product Data, LPD for Propulsion, C258)
(DI-ILSS-80134A, Proposed Spare Parts List, Aircraft and Propulsion Spare Parts List, C035)
(DI-SESS-80294B, Maintenance Test and Support Equipment List, C223)

3.9.3.4 Provisioning

The Contractor shall prepare and deliver Provisioning Technical Documentation (PTD) comprised of Logistics Product Data (LPD) and related Engineering Data for Provisioning (EDFP) for the system, to include propulsion, escape system items, and PSE approved during the SERD process. The Contractor shall submit data IAW the Air Force Initial Provisioning Performance Specification (IPPS) in a format compatible with the D220 Automated Provisioning System. The Contractor's provisioning recommendations shall be consistent with historical

usage data and sufficient to meet availability and reliability requirements as stated in the Aircraft SS. The Contractor shall flow down the same LPD/PTD/EDFP data requirements to its sub-contractors and suppliers, to include provisioning of Propulsion systems. The Contractor shall participate in provisioning activities to facilitate transition to organic sustainment. The Contractor shall initiate cataloging actions for all peculiar items identified during the SERD and provisioning processes. The Contractor shall support the provisioning of both common and peculiar items.
(DI-SESS-81874, Engineering Data For Provisioning (EDFP), EDFP for Aircraft, C266)
(DI-SESS-81874, Engineering Data For Provisioning (EDFP), EDFP for Propulsion, C265)
(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List Aircraft, C259)
(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List Propulsion, C260)
(DI-SESS-81758A, Logistics Product Data, LPD for Aircraft, C257)
(DI-SESS-81758A, Logistics Product Data, LPD for Propulsion, C258)

3.9.3.4.1 Engineering Data for Provisioning

The Contractor's EDFP shall enable the Government to identify each first-appearance item shown from other comparable items in the Government supply inventory (the Defense Logistics Information System, Total Item Record). The Contractor shall satisfy EDFP requirements with product drawings as part of the PTD. When EDFP requires identification of items that are not included in the PTD, the Contractor shall plan for the delivery of vendor, commercial item documentation. The Contractor shall plan for and provide EDFP to support ECPs. The Contractor shall provide all data packages for aircraft and propulsion at the subcontractor and supplier level to support full organic provisioning. The Contractor shall develop and deliver the Order of Precedence for EDFP.
(DI-SESS-81874, Engineering Data For Provisioning (EDFP), EDFP for Aircraft, C266)
(DI-SESS-81874, Engineering Data For Provisioning (EDFP), EDFP for Propulsion, C265)

3.9.3.4.2 Logistics Product Data – Aircraft and Propulsion

The Contractor shall submit LPD in a format compatible with the AFMC Automated Provisioning System (D220) as required by the IPPS, including attachments. The Contractor's schedule for submitting the LPD shall be IAW the Provisioning Performance Schedule (PPS) (AFMC Form 718), which will be completed at the Provisioning Guidance Conference (PGC). The Contractor shall support a PGC hosted by the Prime Provisioning Activity (PPA) IAW Annex B. The Contractor shall support a Spares Provisioning Conference as determined at the PGC IAW Annex B.
(DI-SESS-81758A, Logistics Product Data, LPD for Aircraft, C257)
(DI-SESS-81758A, Logistics Product Data, LPD for Propulsion, C258)

3.9.3.4.3 Cataloging Systems

The Contractor shall use the D143C Federal Logistics Information System Receipt, Edit, and Routing system to obtain NSNs and file maintenance logistics information data.

3.9.3.5 Commonality

The Contractor shall provide a detailed parts breakdown depicting the hierarchy from End Item (e.g., system, sub-system, component) down to and including the SRU level and a module comparison for Software/Firmware. The Contractor shall perform a Common Repairable Item (CRI) assessment to compare like End Items that it or subordinate OEMs provide. The Contractor shall document supporting justification for percentages reported.
(DI-PSSS-81970, Common Repairable Item (CRI) Identification Listing, C204)

3.9.3.6 Packaging, Handling, Storage, & Transportation (PHS&T)

The Contractor shall develop, deliver, implement, and maintain preservation and packing methods and procedures to protect materiel/items against corrosion, physical and mechanical damage, and other forms of degradation during storage, handling, and shipment IAW MIL-STD 2073-1E, AFI 24-203, AFMCI 24-201, and MIL-STD-129R. The Contractor shall utilize AFMC Form 158, Packaging Requirements, and DD Form 1653, Transportation Data for Solicitations. The Contractor shall provide PHS&T data for all new and modified equipment to reflect data changes. The Contractor shall ensure all classified materiel/items are shipped through Government channels, IAW DOD 5220.22-M. The Contractor shall identify and manage all materiel/items requiring special handling and/or shipment procedures. The Contractor shall ship uninstalled/spare engines IAW TO-00-85-20 with change 6. For equipment requiring new or specialized containers, the Contractor shall generate and deliver data to input into Container Design Retrieval System to capture container requirements. The Contractor shall pack all materiel/items. The Contractor shall provide, manage, and repair shipping containers. The Contractor shall update the Special Packaging Instructions Retrieval and Exchange System with shipping instructions as required. The Contractor shall retain and reuse shipping containers IAW AFI 24-203 and AFMCI 24-201. The Contractor shall mark all items to provide traceability to inventory and accountability records.
(DI-SESS-81758A, Logistics Product Data, LPD for Aircraft, C257)
(DI-SESS-81758A, Logistics Product Data, LPD for Propulsion, C258)
(DI-PACK-80121C, Special Packaging Instructions (SPI), C195)
(DI-PACK-80684B, Container Design Retrieval System (CDRS) Data Input, C196)

3.9.3.7 Interim Contractor Support

The Contractor shall provide ICS support for peculiar items. The Contractor shall perform ICS activities to include identifying, provisioning, cataloging, quantifying, selecting, tracking, acquiring, monitoring, collecting, storing, maintaining, repairing at the depot-level, distributing, reporting, transferring, and disposing, for peculiar items to include engines, systems, sub-

systems, PSE/TMDE, and peculiar mission specific spares (reparable, consumable, mission specific, and bench stock items). The Contractor shall be responsible for stocking, storing, and issuing all peculiar spares at the wholesale level. The Contractor shall provide all direct and indirect services necessary to inspect, test, and repair peculiar and mission-specific items and equipment at the depot-level. The Contractor shall be responsible for repairing or disposing of all reparable items and equipment at the depot-level. The Contractor shall provide and deliver an activity report on materiel requirements, fulfillment, and associated costs. The Contractor shall maintain accountability for aircraft peculiar and mission-specific spare parts and peculiar SE/TMDE spare parts throughout ICS within the wholesale inventory supply system. The Contractor shall provide ICS, IAW AFI 63-101/20-101, and the Contractor Supported Weapon System (CSWS) guide.
(DI-MGMT-80368A, Status Report, ICS Activity Report, C091)

3.9.3.7.1 Contractor Inventory Control Point (C-ICP)

The Contractor shall utilize a C-ICP process that interfaces with the Integrated Logistics System-Supply (ILS-S) to provide the Government a single supply support operation. The Contractor shall ensure the C-ICP utilizes the Data Collection Management Tracking System to provide the Government total asset visibility. The Contractor shall comply with the CSWS Guide's five tenets: (1) Teaming and Supply Support Planning, (2) Interim and/or Sustainment Supply Support, (3) Data Sharing/Data Integration, (4) Transition Management, and (5) Financial Concepts. The Contractor shall document, in the approved PSAP, the roles and responsibilities of a C-ICP IAW the CSWS guide.
(DI-MGMT-80004A, Management Plan, Product Support Analysis Plan, C083)

3.9.3.7.1.1 Contractor Inventory Control Point and Source of Supply

The Contractor shall perform as the C-ICP (wholesale inventory supply repository) and be the primary Source of Supply for peculiar assets. The Contractor shall perform requirements determination, participate in provisioning and cataloging activities, and execute all procurement actions. The Contractor shall be accountable for aircraft peculiar and mission-specific spare parts and peculiar SE/TMDE spare parts at the C-ICP through the data collection management tracking system.

3.9.3.7.1.2 C-ICP/Material/Inventory Control/Data Collection Management Tracking System

The Contractor shall utilize a commercial-derivative, wholesale-level, secure C-ICP / wholesale material / inventory control / Data Collection Management Tracking System that directly interfaces with the Government supply information management system. The Contractor system shall provide retail organic supply support personnel with in-transit and total asset visibility no later than 120 days before delivery and acceptance of the first aircraft delivery at each MOB.

The Contractor shall provide the Government Type-E Access and provide initial (one-time) on-the-job training on the C-ICP Data Collection Management Tracking System.

3.9.3.7.1.3 Contractor Inventory Control Point Visibility

The Contractor shall provide a transparent process to the user. The Contractor shall provide support to Source of Supply Assignment Process decisions in transitioning C-ICP management for peculiar items that become common to Government-inventory control point (G-ICP) management on a periodic basis through the logistics reassignment process.

3.9.3.7.2 Engines

The Contractor shall perform all off-wing, beyond O-level repair of all engines.

3.9.3.7.3 Logistics Reassignment

The Contractor shall create and submit Logistics Reassignment data to the Government on C-ICP managed NSNs that complete provisioning and cataloging IAW DLM 4000.25, Chapter 9. The Contractor's system shall interface with D375 Data Exchange and DLA EBS/DSS to ensure an uninterrupted supply support of items during the ICS transition period.
(DI-MISC-80508B, Technical Report - Study/Services, ICS Data Reports, C184)

3.9.3.7.4 Supply Phase-Out Services

The Contractor shall support the transition from C-ICP to a G-ICP while maintaining mission continuity. The Contractor shall transition from providing support for peculiar items during ICS after the following have been completed: a baseline-configured aircraft has been received, technical data (including TOs) are delivered, 12 months of non-test actual demand data is accumulated and given to the Government, engineering authority transfers to the Government, and cataloging services have been completed. The Contractor shall include a period for transferring services and residual assets to ensure an effective, orderly, and successful transition of capabilities. The Contractor shall support Government supply chain managers familiarization for the transition of all peculiar items. Upon completion of ICS, the Contractor shall deliver C-ICP-stocked assets to the Government and shall repair and deliver as serviceable stock, all items inducted into the repair pipeline (turned in to the C-ICP).

3.9.3.7.5 Logistics Support Representative (LSR)

The Contractor shall provide one LSR for 40-hours per week for the duration of ICS. The LSR will act as a liaison, between the MOBs and prime contractor, to perform logistics support activities.

3.9.3.7.6 Interim Contractor Support (ICS) Reports/Metrics

The Contractor shall provide ICS data reports. The Contractor shall meet or exceed the values associated with the metrics described in the following sub-paragraphs.

(DI-MISC-80508B, Technical Report - Study/Services, ICS Data Reports, C184)

3.9.3.7.6.1 Total Non-Mission Capable Supply (TNMCS)

The Contractor shall not exceed a monthly average TNMCS rate of 5% at each MOB for peculiar items. The Contractor shall calculate TNMCS IAW AFI 21-103, Attachment 2.

3.9.3.7.6.2 Issue Effectiveness Rate

The Contractor shall report and maintain an Issue Effectiveness Rate at each MOB of at least 85% for repairable items and at least 80% for consumable items (to be calculated for both, as defined in AFH 23-123, at the retail level). The Contractor shall fill and ship non-MICAP, C-ICP managed, component back orders within 72 hours after demand is placed 90% of the time. The Contractor shall satisfy all MICAP items within 24 hours at each MOB for C-ICP managed items.

3.9.3.8 Organizational-Level FSR Support

The Contractor's Site Lead FSR shall be in place at each operational beddown location six months prior to first aircraft delivery and support operations through the end of the contract. The Contractor’s additional identified FSRs shall be in place 60 days prior to aircraft delivery and support operations through the end of the contract. For the first three (3) years (Milestone C+1 through Milestone C+4), the Contractor’s FSR support shall consist of six (6) SMEs to sufficiently support two (2) eight-hour shifts, five (5) days per week, covering the following specialties/subjects; first shift: one (1) lead (all systems), one (1) mechanical (e.g., crew chief, hydraulics, fuels, structures), one technical (e.g., electrical/environmental, avionics, egress), and one propulsion, and second shift: one mechanical and one technical. For the remaining life of the contract, the Contractor’s FSR support shall consist of no less than three (3) and no more than six (6) SMEs to sufficiently support two (2) eight-hour shifts, five (5) days per week, covering the following specialties/subjects; first shift: mechanical (e.g., crew chief, hydraulics, fuels, structures), technical (e.g., electrical/environmental, avionics, egress), and propulsion, and second shift: mechanical and technical. The Contractor’s FSRs shall provide on-call support when the mission requires the host unit to continue operations outside of two-shift weekday operations. The Contractor’s FSRs shall provide on-site technical advice and hands-on training on all aspects of equipment maintenance and operation, including modifications and retrofits, and Contractor Engineering and Technical Services (CETS) as described in AFI 21-110. The Contractor’s FSRs shall provide field engineering, technical advice, assistance, and training for maintaining and operating unit equipment; investigate equipment failures and mishaps and train personnel to prevent recurrence; develop contacts with contractor, depot, system engineers, and technicians; provide technical assistance and training for special test equipment and maintenance procedures to troubleshoot and resolve complex system problems; advise and train on special tools, handling equipment, test equipment, and other related items; comply with and emphasize Air Force safety precautions; provide maintenance and operational information when technical

data does not cover the repair or maintenance; assist in logistics and maintenance mishap investigations and failure data reporting; and perform direct maintenance when unit personnel are not yet trained. The Contractor shall submit FSR monthly activity reports for services and training provided. The Contractor shall use AFI 21-110 as a guide.
(DI-MGMT-81238, Contract Field Service Report, C096)

3.9.3.8.1 Depot-Level FSR Support

The Contractor shall provide D-level FSR support six months prior to initial depot stand-up. The Contractor's FSR support shall be available to work at the depot location as required and consist of SMEs to sufficiently support the following specialties/subjects; mechanical (e.g., crew chief, hydraulics, fuels, structures), technical (e.g., electrical/environmental, avionics egress), propulsion , and supply chain management. The Contractor's D-level FSRs shall provide depot engineering reach-back support, technical advice, assistance, training for depot maintenance, and CETS as described in AFI 21-110. The Contractor shall submit Depot FSR monthly activity reports for services and training provided. The Contractor shall use AFI 21-110 as a guide.
(DI-MGMT-81238, Contract Field Service Report, C096)

3.9.3.9 Supplier Relationship Management

The Contractor shall establish and maintain a Supplier Relationship Management program to plan and manage interactions with strategic sub-tier suppliers. The Contractor shall host Supply Chain Stakeholder meetings IAW Annex B, with the objective of communicating strategic supply chain issues to ensure long term sustainment impacts are identified and early mitigation steps are taken. The Contractor shall present supply chain issues, including, but not limited to, lead time, diminishing manufacturing, and obsolescence. The Contractor shall brief supply chain metrics in the Contractor's format based on industry best practices (e.g., Supply Chain Operations Reference (SCOR) model).

3.9.3.10 Precious Metals Recovery

The Contractor shall establish a Precious Metals Recovery Program (PMRP) that complies with DoD's PMRB IAW FAR 45.607.2, AFI 23-101, DoD 4160.21-M, and TO 00-25-113. The Contractor shall ensure that the PMRP is addressed where precious metals are used or recovery is involved. The Contractor shall determine and assign the appropriate precious metals indicator codes as defined by DoD 4100.39-M, Vol 10.

3.9.3.11 Minimum Essential Subsystem List (MESL)

The Contractor shall develop and deliver a MESL identifying the minimum essential equipment subsystems that must function on the aircraft for it to perform an assigned training mission. The Contractor's MESL shall be IAW AFI 21-103, Chapter 2 and AFPD 10-9. The Contractor's MESL shall include a Basic Systems List (BSL) for assigned training missions, the systems and subsystems that must function to accomplish those missions, and a Full Systems List (FSL) of all

systems and subsystems required for Full Mission Performance. The Contractor's MESL listings shall be Work Unit Code based.
(DI-MISC-81417, Minimum Equipment Subsystem List (MESL), MESL for GBTS and Aircraft, C173)

3.9.3.12 Deactivation, Demilitarization and Disposal Plan (D3P)

The Contractor shall develop and deliver a D3P. The Contractor's D3P shall address aircraft, GBTS, and PSE transportation to removal/demilitarization/recycling areas, preservation requirements for storage and later demilitarization, schematic diagrams depicting the location of systems, subsystems, and components, location of hazardous materials, energy sources, fuel removal locations, de-energizing and removal of hazardous materials, explosive material removal and handling procedures, hazard areas, and strategy for identifying and addressing ESOH compliance requirements. The Contractor's D3P shall meet all applicable safety, policy, legal, environmental, and regulatory requirements IAW AFMAN 23-122, AFH 23-123, DoDI 5000.02, AFI 23-101 Chapter 6, AFI 16-402, and DOD 4160.21-M, V2. The Contractor's D3P shall address both short-term and long-term storage of aircraft, GBTS, PSE, and classified equipment IAW TO 1-1-686. The Contractor shall develop and deliver on-equipment save list(s). Additionally, the Contractor's D3P shall include all fuels, lubricants, paints, thinners, solvents, cleaning agents, and other hazardous materials used at all levels of maintenance.
(DI-MGMT-80004A, Management Plan, D3P, C075)

3.9.3.13 Depot Maintenance Activation Planning

The Contractor shall support, participate, and provide data for the Government Depot Source of Repair (DSOR) updates IAW AFI 63-101/20-101 for the APT System. The Contractor shall provide ROMs and LORA to support the Depot Maintenance Activation Working Group (DMAWG) planning process. The Contractor shall determine projected failure rates for D-Level repairs.
(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List-Aircraft, C259)
(DI-SESS-81759A, Logistics Product Data Summaries, SERD/Hand Tool List-Propulsion, C260)

3.9.3.13.1 Depot Maintenance Activation Working Group

The Contractor shall support DMAWG meetings IAW Annex A. The Contractor shall assist the Government in determining which LRUs, LRMs, and SRUs are to be repaired at an organic depot and how that repair should be implemented.

3.9.3.13.2 Source of Repair Analysis (SORA) Support

The Contractor shall develop, deliver, and maintain a depot maintenance study to assist the Government SORA updates by providing essential data elements to the Government on installation tasks such as, but not limited to, required skills, tools, processes, equipment, and estimated contract installation cost.

(DI-ILSS-80739, Depot Maintenance Study, C041)

3.9.3.14 Engine Maintenance Planning

The Contractor shall comply with AFI 20-115, AFMAN 20-116, and the Director of Propulsion (DoP) Operating Instruction (OI) 21-104 to develop, deliver, implement and maintain an Engine Life Management Plan (ELMP). The Contractor's ELMP shall be based on two-level maintenance principles. The Contractor shall document planning activities including schedules and engine movements. The Contractor shall trend and document hardware re-use. The Contractor shall support the objectives of the Air Force Repair Network Integration (RNI) initiative. The Contractor shall support the Engine Maintenance Working Group IAW Annex A. The Contractor shall provide support to the Government Aerospace Engine Life Committee (AELC) to manage the engine IAW AFLCMC/LP (OI) 20-012 including participation in on-site AFLCMC/LP Director of Propulsion (DoP) meetings.
(DI-MGMT-80004A, Management Plan, Engine Life Management Plan (ELMP), C074)

3.9.3.14.1 Lead-the-Fleet Planning (LtF) / Analytical Condition Inspections (ACI)

The Contractor shall develop, manage, and execute a Lead-the-Fleet/Analytical Condition Inspections (LtF/ACI) Program. The Contractor shall schedule, support, and document LtF/ACI layouts and prepare and deliver LtF/ACI reports.
(DI-MISC-81391, Analytical Condition Inspection Report, Engine Lead-the-Fleet/ACI Report, C171)

3.9.3.14.2 Logistics Propulsion Management

The Contractor shall initialize, update, and reconcile engine management data in Government maintenance information systems. The Contractor shall plan and execute two-level maintenance support actions by tracking and scheduling engines and major engine modules/components. The Contractor shall obtain Type-A Access and use Comprehensive Engine Management System (CEMS) to manage and track all engine serially tracked parts and modules. The Contractor shall identify and track hot and cold section parts in CEMS to include life limited parts usage. CEMS, DSD D042, is the accountable property system of record for Government engines. The Contractor shall perform logistics propulsion management IAW TO 00-25-254-1, TO 00-25-254-2, and AFI 21-129. The Contractor shall participate in a Government-led BCA to determine a best-value approach between a two-level and a two-level plus maintenance concept.
(DI-MGMT-81324C, Comprehensive Engine Management System (CEMS) Reporting, C097)

3.9.3.14.3 Accelerated Mission Testing (AMT) Analysis

The Contractor shall derive the APT engine duty cycle from the mission profiles in the Aircraft SS Appendix A. The APT engine duty cycle shall eliminate non-damaging dwell times. The Contractor shall conduct and deliver an analysis based on the APT engine duty cycle to determine the applicability of previous engine Accelerated Mission Testing.

(DI-MISC-80508B, Technical Report-Study/Services, AMT Applicability, C148)

3.9.3.14.3.1 Accelerated Mission Testing

For any APT mission usage which exceeds previously demonstrated AMT, the Contractor shall supply and conduct an AMT on a Contractor-instrumented production configuration engine to verify the engine service life requirements. The Contractor shall support Government-monitored inspections of the engine after completion of each hot section test interval. The Contractor shall perform an ACI after each engine teardown and provide results. The Contractor shall re-use hardware and only replace parts that are deemed unusable. Upon completion of the AMT the Contractor shall reassemble the engine with all its test hardware and preserve it for extended storage. The Contractor shall package and ship the engine to a Government location.
(DI-MISC-81391, Analytical Condition Inspection Report, Engine Lead-the-Fleet/ACI Report, C171)
(DI-NDTI-80566A, Test Plan, Detailed Test Plan, C186)
(DI-NDTI-80809B, Test/Inspection Report, C192)

3.10 Industrial Facilities

(RESERVED)

3.11 Aircraft Initial Spares and Repair Parts

3.11.1 Production Spares

The Contractor shall propose and provide a spare parts package delivered 180 days in advance of aircraft lot deliveries to include both repairable and consumable parts. The Contractor shall ensure spares quantities are sufficient to meet program availability, reliability, supportability, maintainability, and affordability objectives IAW the Aircraft SS. The Contractor shall provide initial spare parts and modules that are reactive to the provisioning process and reflected in lot deliveries. The Contractor shall include common, peculiar, mission-specific, and bench stock items. The Contractor shall consider usage, lead times, and quantities for base and depot-level requirements. The Contractor shall support the Government's induction of all spare parts into the ILS-S.

3.11.2 Engine Spares

The Contractor shall produce and deliver ready-to-install spare engines with the Quick Engine Change kits as applicable.

ANNEX A - WORKING GROUPS

Working Group	Level of Involvement	Frequency	Meeting Location	Average Duration (days)	Agenda Required (C002)	Minutes Required (C005)
Aircraft Information Working Group (AIWG)	Co-chair, Participate	Pre-CDR: Quarterly Post-CDR through PCA: 2 per year or as needed	Contractor's Facility	2	Yes	Yes
Airworthiness Working Group (AWG)	Co-chair, Participate	EMD: Monthly Post EMD: as needed	Contractor's Facility (Telecon)	1 Hour	Yes	Yes
Cockpit Working Group	Establish, Co-chair, Participate	4 per year until CDR; 2 per year after CDR up to PCA	Contractor's Facility	2	Yes	Yes
Computer Resources Working Group (CRWG)	Establish, Co-chair, Participate	4 per year until CDR; 2 per year after CDR up to PCA	Contractor's Facility	Pre-CDR: 3 Post-CDR: 2	Yes	Yes
Corrosion Prevention Advisory Board	Co-Chair, Participate	Annually	Contractor's Facilities	2	Yes	Yes
Cybersecurity T&E Working Group	Participate	Twice per year until IOT&E completion (May be held in conjunction with the SSEWG)	Contractor's Facility and Government Facility Alternating	2	No	No
Database Working Group (DBWG)	Establish, Co-chair, Participate	Quarterly throughout GBTS development/ EMD; Quarterly during GBTS CLS	Contractor's Facility and Government Facility Alternating; may include VTCs/ Teleconferences	1	Yes	Yes
Depot Maintenance Activation Working Group (DMAWG)	Co-chair, Participate	3 times per year from PDR until depot activation	Contractor's Facility & Depot	3	Yes	Yes

Working Group	Level of Involvement	Frequency	Meeting Location	Average Duration (days)	Agenda Required (C002)	Minutes Required (C005)
Diminishing Manufacturing Sources and Material Shortages Working Group (DWG)	Establish, Co-chair, Participate	Quarterly	Contractor's Facility and Government Facility	2	Yes	Yes
Engine Maintenance Working Group	Establish, Co-chair, Participate	Quarterly during production	Telecon quarterly; one meeting annually will be in-person at Contractor's facility, AETC Location, or Depot Maintenance Facility (as required)	2-Hr quarterly telecon; 2-day annual meeting	Yes	Yes
GBTS Development Working Group (GDWG)	Establish, Co-chair, Participate	Quarterly throughout GBTS development/ EMD	Contractor's Facility and Government Facility Alternating; may include VTCs/ Teleconferences	1	Yes	Yes
GBTS Site Activation Working Group (SAWG) (May be separate from SATAF)	Participate	Bi-Weekly during 6 months prior to each MOB stand-up.	Government Facility; may include VTCs/ Teleconferences	1	Yes	Yes
GBTS T&E Working Group	Lead, Co-chair, and Participate	Quarterly until all EMD GBTS components have been delivered (or as needed to develop detailed test plans and achieve T&E schedule)	Contractor's facility until simulators installed at user location	2	Yes	Yes
Human System Integration Working Group	Establish, Co-chair, Participate	2 per year until SVR; 1 per year after SVR up to PCA	Contractor's Facility	2	Yes	Yes
Interface Control Working Group (ICWG)	Establish, Co-chair, Participate	EMD: 2 per year Post EMD: as needed	Contractor's facility	2	Yes	Yes

Working Group	Level of Involvement	Frequency	Meeting Location	Average Duration (days)	Agenda Required (C002)	Minutes Required (C005)
Integrated Logistics Support Team	Participate	Twice per year	Government Facility	2	Yes	Yes
Joint Reliability and Maintainability Evaluation Team (JRMET)	Participate	Bi-Monthly during all test periods	Government Facility	3	No	No
OT&E Readiness Certification Working Group	Participate	Twice per year until OTRR completion	Government Facility	2	No	No
PSIP Working Group	Establish, Co-chair, Participate	Quarterly during EMD; twice per year after EMD	Contractor's Facility	1	Yes	Yes
Production Working Group	Participate	EMD: Monthly Post-EMD: Weekly	Contractor's Facility (Telecon)	1 Hour	No	No
Propulsion Working Group	Participate	Bi-weekly (every 2 weeks) from SRR to PCA	Contractor's Facility (Telecon)	1 Hour	No	No
Reliability & Maintainability Working Group (R&MWG) (to be held concurrently with PMRs)	Establish, Co-chair, Participate	EMD: 4 per year Post EMD: 2 per year	Contractor's Facility	EMD: 3 Post EMD: 2	Yes	Yes
Risk Management Board (RMB) (In conjunction with PMRs)	Participate	EMD: Quarterly Post EMD: Semi-annually	Contractor/ Sub-Contractor location	3	Yes	Yes
Risk Working Group (RWG)	Participate	Quarterly, or as necessary	Telecon	2 hours	Yes	Yes
Support Equipment Working Group (SEWG)	Co-chair, Participate	2 per year until FRP decision	Contractor's Facilities	2	Yes	Yes
System Security Engineering Working Group (SSEWG)	Participate	Pre-CDR:3 per year Post-CDR: 2 per year through PCA Post-PCA: 1 per year or as needed	Contractor's or Government Facility	3	No	Yes

Working Group	Level of Involvement	Frequency	Meeting Location	Average Duration (days)	Agenda Required (C002)	Minutes Required (C005)
System Safety Group (GO/SES Level) (SSG)	Participate	Annually	Government Facility	3	Yes	Yes
System Safety Working Group (SSWG)	Participate	Prior to CDR: 2 per year After CDR: Annually	Contractor's facility	3	Yes	Yes
Test Planning Working Group	Establish, co-chair, participate	Monthly or as needed to develop detailed test plans for DT&E	Contractor's Facility and Government Facility Alternating; may include VTCs/ Teleconferences	2	No	No
Training System Configuration Working Group (TSCWG)	Establish, Co-chair, Participate	Quarterly	Contractor's Facility and Government Facility Alternating; may include VTCs/ Teleconference	1	Yes	Yes
Training Planning Team (TPT) and Subsequent Working Groups	Participate	Monthly during EMD; Quarterly thereafter	Government Facility; may include VTCs/ Teleconferences	1	Yes	Yes

ANNEX B - SYSTEM MEETINGS AND SPECIAL INTEREST ACTIVITIES

Meeting Name	Frequency	Duration (Working Days)	Location	Agenda Required (C002)	Scope	Minutes/ Materials Required (C005)
Additional Program Directed Reviews	Up to six per year	2	Contractor/ Subcontractor location	Yes	As necessary	Yes
SE Allowance Source Code and Allowance Standard Reviews	Annually, after Milestone C throughout production	3	Government location	Yes	USAF review of SE requirements	Yes
Anthropometric Evaluation	Between 90 and 120 days after contract award and within 60 days of CDR Additionally, as required	Up to 5	Contractor Location	No	USG led evaluation using powered mock-up	No
Configuration Audits (SVR/FCA, PCA)	As Required	4	Contractor / Subcontractor location	Yes	SVR/FCA, PCA Plan	Yes
Course Readiness Reviews (CRR)	1 per course	2	Government Facility	Yes	Government verify that each course meets objectives	Yes
CSDR Post Award Conference	Once NLT 120 days after contract award	2	Contractor / Subcontractor location	Yes	Review Contractor approach to fulfill its CSDR requirements reporting as well as GOV expectations for CSDR submissions	Yes
Engineering Data Guidance Conference (May be combined with the Post Award Conference)	Once	1	TBD	Yes	60 days after contract award. Co-chair to ensure Contractors understanding of all CDRL requirements, specs and standards.	Yes

Meeting Name	Frequency	Duration (Working Days)	Location	Agenda Required (C002)	Scope	Minutes/ Materials Required (C005)
Facility Construction Review	Four reviews per facility project (aircraft and GBTS facilities) at each beddown location	2	Government Facility	No	Review of facility construction in support of beddown	No
Facility Design Reviews	Four reviews per facility project (aircraft and GBTS facilities) at each beddown location	2	TBD	No	Review of facility designs in support of beddown	No
Facility Readiness Review	One review per facility project (aircraft and GBTS facilities) at each beddown location	2	Government Facility	No	Review of facilities in support of beddown	No
GBTS CLS Transition Audits	1 per MOB	1	Government Site		Government to determine is set of documents, IMI, and software are complete with latest revisions	
GBTS CLS Transition Inventories	1 per MOB	1	Government Site		Account for all GBTS equipment	
GBTS IMI Baseline Audits	Annually during Production phase and CLS period	2	Government Site		Government verifies IMI concurrency and completeness	
GBTS Software baseline Audits	Annually during Production phase and CLS period	1	Government Site		Government verifies software concurrency and completeness	

Meeting Name	Frequency	Duration (Working Days)	Location	Agenda Required (C002)	Scope	Minutes/ Materials Required (C005)
IETM Business Rules Review	Once	10	Contractor/ Subcontractor location	Yes	120 Days after Contract Award, Co-chaired meeting to go over the business rules that apply to IETM development.	Yes
IMI Design Review (IMIDR)	Quarterly until CRR	2	Contractor Location	Yes	Government's inspection of the IMI against applicable design documentation to identify discrepancies.	Yes
In-Process Review (IPR) of the TDP (held in conjunction with other reviews [PDR, CDR])	3	3	Contractor Location	Yes	Contractor to co-chair. IPRs may be scheduled when data has reached the 25%, 50% and 75% completion points. IPRs focus on Contractor's progress in TDP preparation	Yes
Integrated Baseline Reviews (IBRs)	NLT 180 days after Contract Award, exercise of options, and major modifications	3	Contractor/ Subcontractor location	Yes	Establish mutual Government & Contractor understanding of program cost, schedule & performance requirements	Yes
Integrated Risk Assessments (IRA)	First meeting held in conjunction with IBR Annually thereafter	Part 1: 3 Part 2: 3	Contractor/ Subcontractor location	Yes	See AFLCMC Standard Process for Risk and Issue Management in DOD Acquisition Programs(10 Jul 2015)	Yes
Integrated Test Team (ITT)	Quarterly until the start of IOT&E	2	Alternating between the Contractor's Facility and Government Facility	No	Reference AFI 99-103, ITT Charter, and APT TEMP	Yes

Meeting Name	Frequency	Duration (Working Days)	Location	Agenda Required (C002)	Scope	Minutes/ Materials Required (C005)
Manufacturing Readiness Assessments	Per MRL Plan	Per MRL Plan	Contractor/ Subcontractor location	Yes	Detailed Manufacturing Review	Yes
DRB	Quarterly (Beginning after receipt of first test asset)	4 hours	Teleconference	No	Contractor participation and support in DR investigations	No
OBOGS Safety Evaluation	Once	60	Government Location (WPAFB)	No	Government test of OBOGS equipment using altitude chamber	No
Operational Test Readiness Review (OTRR)	Once prior to start of IOT&E	2	Government Location (WPAFB)	No	Contractor support to obtaining PEO certification; meeting will address DT&E results, conclusions, recommendations, and assessment of the system's capability to meet operational requirements and succeed in IOT&E. Refer to AFMAN 63-119. Government-led activity.	No
Post-Award Conference	Once NLT 60 days after contract award	3	Contractor/ Subcontractor location	Yes	Review Contractor approach to meet cost, schedule, & performance requirements	No
Preliminary Integrated IMI Reviews (PIIR)	1 per course	2	Contractor's Site	Yes	Government to review the basic design approach for each course to be developed	Yes
Program Management Reviews	EMD: Quarterly Post EMD: Semi-annually	3	Contractor/ Sub-Contractor location	Yes	Review status of progress on cost, schedule & performance progress. Review Action Items. Review risk management items	Yes

Meeting Name	Frequency	Duration (Working Days)	Location	Agenda Required (C002)	Scope	Minutes/ Materials Required (C005)
Programming Plan Conference	One per base	3	Each MOB	Yes	USAF review of fielding locations and resolution of product support element deficiencies.	Yes
Provisioning Guidance Conference (PGC)	Within 45 days of Contract Award	3	Contractor/ Subcontractor location.	No	Baselines provisioning efforts for all common and peculiar items	Yes
Simulator Certification (SIMCERT)	Annual Certification during Production phase and CLS period	2	Government Location (All ATDs in single location to be scheduled in a single SIMCERT event based on availability)	No	ATDs provide accurate and credible training for allocated tasks, missions, and events through verification and validation of training system hardware and software performance.	No
Simulator Validation (SIMVAL)	1 for each GBTS WST and OFT during EMD phase	2	Government Location	No	Government verifies and validates the performance of WST's and OFT's simulated mission environments	No
Site Activation Task Force (SATAF)	Four SATAFs per base	4	Each MOB	Yes	USAF review of fielding locations and resolution of product support element deficiencies.	Yes
Site Training Readiness Reviews (STRR)	1 per MOB	1	Government Site	Yes	Review evaluation results and course implementation	Yes
Spares Provisioning Conference	Quarterly Post-CDR until completion of cataloging activities	5	Contractor/ Subcontractor location.	Yes	All common and peculiar support equipment	Yes

Meeting Name	Frequency	Duration (Working Days)	Location	Agenda Required (C002)	Scope	Minutes/ Materials Required (C005)
Special Instrumentation TIM	Once prior to or in conjunction with PDR Once prior to or in conjunction with CDR Once prior to or in conjunction with aircraft TRR before first EMD aircraft delivery	1	Contractor location	Yes	Review of EMD aircraft temporary (T-2) modification designs to ensure meeting USAF technical & safety standards	Yes
Supply Chain Stakeholders Meeting	Twice per year (In conjunction with ILST)	1	Government Facility	Yes	Contractor to chair and brief supply chain metrics and issues.	Yes
TO Guidance Conference	Once	5	Contractor/ Subcontractor location	Yes	60 Days after Contract Award, Co-chaired meeting to go over the TMCR, ensures contractual understanding of TO program.	Yes
TO In-Process-Reviews	As required until all TOs have been through 100% review	5	Field/Contractor/ Subcontractor location	Yes	Co-chaired, check progress and technical validity of TO development at 30, 70, and 100%.	Yes
TO Pre-Publication Review	For each manual prior to publication release	5	Field/Contractor/ Subcontractor location	Yes	Co-hosted, ensures TOs are ready for final & formal delivery	Yes
TO Certification/Verification	As required until all TOs have been verified unless Government accepts TO entries on VSP	5	Field/Contractor/ Subcontractor location	Yes	Co-Hosted / Government Final verification and acceptance of final TO technical and procedural content, and viewers.	Yes

Meeting Name	Frequency	Duration (Working Days)	Location	Agenda Required (C002)	Scope	Minutes/ Materials Required (C005)
Technical Interchange Meetings (TIMs)	As Required	As required	Contractor/ Subcontractor location	Yes	Discuss, review, plan actions for technical issues that arise	Yes
Technical Review Board (TRB)	As needed to support detailed test plan approval by 412th Test Wing for selected test plans / procedures during EMD	1	Government Facility; may be accomplished via VTCs/Teleconferences if travel is impracticable	No	All test plans involving Government resources shall receive an independent technical assessment and executive review of the plan per AFI 99-103 Para 5.19	No
Technical Reviews (e.g., SRR, SFR, PDR, CDR)	As Required per IMP	4	Contractor/ Subcontractor Facility	Yes	According to Systems Engineering practices	Yes
Aircraft Test Readiness Reviews (TRR)	One prior to first EMD aircraft delivery	3	Contractor location	Yes	Determine readiness to begin aircraft system level testing at Government facility	Yes
GBTS Test Readiness Reviews (TRR)	Once before SPE and again before FMT/ SIMCERT of each ATD during EMD	2	First at Contractor facility, 2nd at Government facility	Yes	Determine readiness to proceed into referenced test events	Yes

Meeting Name	Frequency	Duration (Working Days)	Location	Agenda Required (C002)	Scope	Minutes/ Materials Required (C005)
Test Safety Review Boards (SRB)	As required during DT&E to support approval of safety plans associated with each detailed test plan	1	Government Facility; may be accomplished via VTCs/Telecons if travel is impracticable	No	All test plans involving Gov't resources shall receive an independent test safety review of safety planning per AFI 99-103 and AFI 91-202 AFMC Supplement 1. Assess whether the T&E project's safety plan has identified and mitigated all known safety hazards to an acceptable level.	No
TSSC Audits	1 per year during Production phase and CLS period	1	Government Facility		Government to verify concurrency and completeness of TSSC capabilities	
Using Command Requirement and Planning Councils (R&PCs)	Annually	3	Contractor/ Subcontractor location	No	Review of potential new requirements	No

ANNEX C - APPLICABLE DOCUMENTS

Document Number	Document Title	Document Date
	Air Force Life Cycle Management Center (AFLCMC) Standard Process for Risk and Issue Management in Acquisition Programs	10-JUL-2015
	APT Aircraft System Specification	
	APT Airworthiness Plan	
	APT GBTS System Specification	
	APT Quality Assurance Surveillance Plan	
	APT Risk Management Plan	AUG-2015
	APT Systems Engineering Plan	
	APT Security Classification and Declassification Guide	19-MAY-2016
	APT Tailored Performance Matrices	
	APT Test and Evaluation Master Plan	
	APT Program Protection Plan	
	APT OPSEC Plan	
	Condition Based Maintenance plus (CBM+) Department of Defense (DoD) Guidebook	MAY-2008
	Defense Acquisition Guidebook	16-SEP-2013
	DoD Cybersecurity Test and Evaluation Guidebook	01-JUL-2015
	DoD Guide to Integrated Product and Process Development	AUG-1998
	DoD Integrated Master Plan (IMP) and Integrated Master Schedule (IMS) Preparation and Use Guide, version 0.9	21-OCT-2005
	Program Protection Plan Outline and Guidance, Version 1.0	JUL-2011
	Joint Aeronautical Commander's Group Aviation Critical Safety Item Management Handbook	16-MAR-2011
	Primary Flight Reference (PFR) Endorsement Process - White Paper by Air Force Flight Standards Agency (AFFSA)	16-OCT-2015
	International Maritime Dangerous Goods (IMDG) Code Volume 2	01-DEC-2015
	Title 29 Electronic Code of Federal Regulations (eCFR) Part 1910, Subpart Z	24-JUN-2016
	Department of Transportation Final Rule, Hazardous Material Carriage by Aircraft, of the Federal Register of Title 49 CFR, Part 175	01-OCT-2010
AETCI 21-105	Logistics Performance Measures Reporting Procedures	18-MAR-2013
AETCI 36-2219	Type 1 Training	06-DEC-2011
AFH 23-123	Materiel Management	08-AUG-2013
AFH 36-2235	Information for Designers of Instructional Systems	
AFI 10-220	Contractor's Flight And Ground Operations	13-AUG-2015
AFI 10-701	Operations Security (OPSEC)	08-JUN-2011
AFI 11-202V3	Flying Operations – General Flight Rules	07-NOV-2014
AFI 20-115	Propulsion Management for Aerial Vehicles	25-JUL-2014
AFI 21-101	Aircraft and Equipment Maintenance Management	21-MAY-2015

Document Number	Document Title	Document Date
AFI 21-101, AFMC Supplement	Aircraft and Equipment Maintenance Management	16-JUL-2015
AFI 21-101, AETC Supplement	Aircraft and Equipment Maintenance Management	18-NOV-2015
AFI 21-101, Edwards AFB Supplement	Aircraft and Equipment Maintenance Management	22-JUL-2014
AFI 21-103	Equipment Inventory, Status and Utilization Reporting	10-SEP-2014
AFI 21-110	Engineering and Technical Services Management and Control	21-APR-2012
AFI 21-113	Air Force Metrology and Calibration Management	03-JUN-2016
AFI 23-101	Materiel Management	29-JAN-2016
AFI 24-203	Preparation and Movement of Air Force Cargo	02-NOV-2010
AFI 32-1023	Designing and Constructing Military Construction Projects	19-NOV-2015
AFI 32-1024	Standard Facility Requirements	14-JUL-2011
AFI-32-7086	Hazardous Materials Management	04-FEB-2015
AFI-32-7086 AETC Supplement	Hazardous Materials Management	08-NOV-2012
AFI 33-210	Air Force Certification and Accreditation Program	02-OCT-2014
AFI 33-580	Spectrum Management	17-JAN-2013
AFI 36-2201	Air Force Training Program	07-AUG-2013
AFI 36-2251	Management of Air Force Training Systems	
AFI 62-601	USAF Airworthiness	12-MAY-2011
AFI 63-101/20-101	Integrated Life Cycle Management	18-SEP-2015
AFI 63-112	Cockpit Working Groups	09-AUG-2006
AFI 63-131	Modification Management	12-MAY-2015
AFI 63-133	Aircraft Information Program	4-NOV-2010
AFI 63-137	Assurance Of Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM), Navigation Safety, And Next Generation Air Transportation System (Nextgen) Performance	29-MAR-2012
AFI 91-202	Safety – The USAF Mishap Prevention Program	24-JUN-2015
AFI 91-203	Air Force Consolidated Occupational Safety Instruction	17-SEP-2015
AFI 91-204	Safety Investigations and Reports	11-JAN-2016
AFI 99-103	Capabilities-Based Test And Evaluation	16-OCT-2013
AFMAN 20-116	Propulsion Life Cycle Management for Aerial Vehicles	07-FEB-2014
AFMAN 23-122	Materiel Management Procedures	09-FEB-2016
AFMAN 24-204(I)	Preparing Hazardous Materials For Military Air Shipments	03-DEC-2012
AFMAN 24-206	Logistics Packaging of Materiel	12-JAN-2004
AFMAN 33-285	Cybersecurity Workforce Improvement Program	20-MAR-2015
AFMAN 36-2234	Instructional System Design	01-NOV-1993
AFMAN 91-201	Explosive Safety Standards	12-JAN-2012
AFMCI 21-126	Temporary 2 (T-2) Modification Of Aerospace Vehicles	03-JAN-2012
AFMCI 21-126 Edwards AFB Supplement 1	Temporary 2 (T-2) Modification Of Aerospace Vehicles	12-APR-2007

Document Number	Document Title	Document Date
AFMCI 24-201	HQ AFMC Packaging and Materials Handling Policies and Procedures	14-JAN-2015
AFOSH STD 91-118	Training Systems Fire Protection	01-APR-1997
AFPAM 63-113	Program Protection Planning for Lifecycle Management	17-OCT-2013
AFPAM 63-128	Integrated Life Cycle Management	10-JUL-2014
AFPD 10-9	Lead Command Designation and Responsibilities for Weapons Systems	08-MAR-2007
AFPD 10-10	Joint Use of Military and Civilian Flying Facilities	25-OCT-2007
AFPD 62-6	USAF Airworthiness	11-JUN-2010
AFTCI 91-203	AFTC Test Safety Review Policy	30-APR-2014
ANSI/ASA S12.75-2012	Methods for the Measurement of Noise Emissions from High Performing Military Jet Aircraft	20-SEP-2012
ANSI C84.1	For Electric Power Systems and Equipment—Voltage Ratings (60 Hertz)	06-DEC-2006
ANSI/GEIA-STD-0007-B	Logistics Product Data	OCT-2014
AWB-002A	Airworthiness Planning	17-MAY-2011
AWB-003A	Tailored Airworthiness Certification Criteria /Modification Airworthiness Certification Criteria (TACC/MACC) Document Approval Process	17-JUN-2011
AWB-004A	Development of an Airworthiness Certification Basis	17-JUN-2011
AWB-005	TACC / MACC Document Construction and Format	27-SEP-2010
AWB-013A	Risk Identification and Acceptance for Airworthiness Determinations	29-JUN-2011
CNSSI No.1253	Security Categorization And Control Selection For National Security Systems	15-MAR-2012
	Contractor Supported Weapon System (CSWS)	JAN-2007
DCMA INST 8210.1C	Contractor’s Ground and Flight Operations	21-AUG-2013
DFARS 227.7202	Commercial computer software and commercial computer software documentation	28-FEB-2014
DFARS 252.204-7012	Safeguarding Covered Defense Information and Cyber Incident Reporting	DEC-2015
DFARS 252.211-7003	Item Unique Identification And Valuation	MAR-2016
DFARS 252.211-7007	Reporting of Government-Furnished Property	AUG-2012
DFARS 252.227-7013	Rights in Technical Data--Noncommercial Items	FEB-2014
DFARS 252.227-7014	Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation	FEB-2014
DFARS 252.227-7015	Technical Data--Commercial Items	FEB-2014
DFARS 252.228-7001	Ground and Flight Risk	JUN-2010
DFARS 252.234-7001	Notice of Earned Value Management System Deviation Memorandum	APR-2008 SEP-2015
DFARS 252.234-7002	Earned Value Management System (EVMS) Deviation Memorandum	MAY-2011 SEP-2015
DFARS 252.234-7004	Cost and Software Data Reporting System	NOV-2014
DFARS 252.242-7005	Contractor Business Systems	FEB-2012

Document Number	Document Title	Document Date
DFARS 252.245-7001	Tagging, Labeling, and Marking of Government Furnished Property	APR-2012
DFARS 252.245-7002	Reporting Loss of Government Property	APR-2012
DFARS 252.245-7003	Contractor Property Management System Administration	APR-2012
DFARS 252.245-7004	Reporting, Revitalization, and Disposal	MAR-2015
DLM 4000.25	Concepts and Procedures	19-MAY-2014
DoD 4100.39-M	Federal Logistics Information System (FLIS) Procedures Manual	
DoD 4160.21-M	Defense Materiel Disposition: Disposal Guidance and Procedures	22-OCT-2015
DoD 5000.04-M-1	CSDR Manual	04-NOV-2011
DoD 5220.22-M	National Industrial Security Program Operating Manual (NISPOM)	28-FEB-2006 (Change 2, 18-MAY-2016)
DoD 5400.7-R_AFMAN 33-302	DoD Freedom of Information Act (FOIA) Program	21-OCT-2010
DoDD 5030.61	DoD Airworthiness Policy	25-JUN-2015
DoDD 8140.01	Cyber Workforce Management	11-AUG-2015
DoDI 1322.26	Development, Management, and Delivery of Distributed Learning	16-JUN-2006
DoDI 4151.22	Condition Based Maintenance Plus (CBM+) for Materiel Maintenance	16-OCT-2012
DoDI 5000.02	Operation of the Defense Acquisition System	07-JAN-2015
DoDI 5200.44	Protection of Mission Critical Functions to Achieve Trusted Systems and Networks (TSN)	05-NOV-2012
DoDI 8320.04	Item Unique Identification (IUID)	16-JUN-2008
DoDI 8500.01	Cybersecurity	14-MAR-2014
DoDI 8510.01	Risk Management Framework (RMF) for DoD Information Technology	12-MAR-2014
DoDI 8570.01-M	Information Assurance Workforce Improvement Program Incorporating Change 4	11-NOV-2015
DoDI 8582.01	Security of Unclassified DoD Information on non-DoD Information Systems	06-JUN-2012
DoDM 5200.01, Vol. 4	DoD Information Security Program: Controlled Unclassified Information (CUI)	24-FEB-2012
DoP OI 21-104	Director of Propulsion Operating Instruction	
Edwards AFB Instruction 99-101	Test and Evaluation	7-AUG-13
EIA-649-B	Configuration Management Standard	APR-2011
EIA-649-1	Configuration Management Requirements For Defense Contracts	20-NOV-2014
FAR 52.245-01	Government Property	APR-2012
FAR 52.245-9	Use and Charges	APR-2012
FAR 45.607.2	Recovering Precious Metals	
GAO-16-89G	United States (US) Government Accountability Office (GAO(Schedule Assessment Guide – Best Practices for Project Schedules	DEC-2015

Document Number	Document Title	Document Date
IEEE 15288.1-2014	Standard for Application of Systems Engineering on Defense Programs	10-DEC-2014
IEEE 15288.2-2014	Standard for Technical Reviews and Audits on Defense Programs	10-DEC-2014
MIL-C-005011B	Standard Aircraft Characteristics and Performance, Piloted Aircraft (Fixed Wing)	21-JUN-1977
MIL-STD-31000	Technical Data Packages	25-FEB-2013
MIL-E-7016F	Electric Load and Power Source Capacity, Aircraft, Analysis Of	20-Jul-1976
MIL-HDBK-29612-3A	Development of IMI	31-AUG-2001
MIL-HDBK-29612-5	Advanced Distributed Learning (ADL) Products and Systems	31-AUG-2001
MIL-HDBK-189C	Reliability Growth Management	14-JUN-2011
MIL-HDBK-515	Weapon System Integrity Guide	11-OCT-2002
MIL-HDBK-516C	Airworthiness Certification Criteria	12-DEC-2014
MIL-HDBK-61A	Configuration Management Guide	07-FEB-2001
MIL-HDBK-781	Reliability Test Methods, Plans, and Environments for Engineering Development, Qualification, and Production	01-APR-1996
MIL-PRF-32070A	Performance Specification Test Program Sets	10-JAN-2012
MIL-PRF-85285	Coating, Polyurethane, Aircraft And Support Equipment	12-JAN-2012
MIL-STD-129R	Military Marking for Shipment and Storage	18-FEB-2014
MIL-STD-130N	Identification Marking of US Military Property	16-NOV-2012
MIL-STD-196E	Joint Electronics Type Designation System	17-FEB-1998
MIL-STD-1168C	Ammunition Lot Numbering and Ammunition Data Card	11-MAR-2014
MIL-STD-1472G	Human Engineering	11-JAN-2012
MIL-STD-1530C	Aircraft Structural Integrity Program	01-NOV-2005
MIL-STD-1568D	Materials And Processes For Corrosion Prevention And Control In Aerospace Weapons Systems	31-AUG-2015
MIL-STD-1787C	Aircraft Display Symbology	05-JAN-2001
MIL-STD-1798C	Mechanical Equipment And Subsystems Integrity Program	08-AUG-2013
MIL-STD-2073-1E	Military Packaging	07-JAN-2011
MIL-STD-27733	Modification and Marking Requirements for Test Equipment in Aerospace Vehicles and Related Support Equipment	18-MAY-1998
MIL-STD-3024	Propulsion System Integrity Program	15-APR-2008
MIL-STD-464C	Electromagnetic Environmental Effects, Requirements For Systems	01-DEC-2010
MIL-STD-46855A	Human Engineering Requirements For Military Systems, Equipment, And Facilities	24-MAY-2011
MIL-STD-881C	Work Breakdown Structures For Defense Materiel Items	03-OCT-2011
MIL-STD-882E	System Safety	11-MAY-2012
NAS 411	Hazardous Materials Management	SEP-2013
NAS 411-1	Hazardous Materials Target List	SEP-2013
NFPA 72E	Standard for Automatic Fire Detectors	22-AUG-2011

Document Number	Document Title	Document Date
NIST SP 800-37	Guide for Applying the Risk Management Framework	FEB-2010
NIST SP 800-53	Security and Privacy Controls for Federal Information Systems and Organizations	APR-2013
PGI 245.102-70	Policy	6-NOV-2014
PGI 245.103-71	Transferring Government Property Accountability	6-NOV-2014
PGI 245.103-72	Government-Furnished Property Attachments to Solicitations and Awards	6-NOV-2014
PGI 245.105	Contractor's Property Management System Compliance	6-NOV-2014
SAE AS5553A	Fraudulent/Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition	21-JAN-2013
SAE AS 6500	Manufacturing Management Program	13-NOV-2013
SAE AS 9100C	Quality Management Systems – Requirements for Aviation, Space, and Defense Organizations	15-JAN-2009
SAE/GEIA-STD-0009	Reliability Program Standard for Systems Design, Development, and Manufacturing	01-AUG-2008
SAE JA1011	Evaluation Criteria for Reliability-Centered Maintenance (RCM) Processes	
SD-22	Diminishing Manufacturing Sources and Material Shortages (DMSMS): A Guidebook of Best Practices and Tools for Implementing a Robust DMSMS Management Program	FEB-2015
SFFAS No. 35	Estimating the Historical Cost of General Property, Plant, and Equipment	14-OCT-2009
TA-STD-0017	Product Support Analysis	01-NOV-2012
TO 00-35D-54	USAF Deficiency Reporting, Investigation, and Resolution	01-SEP-2015
TO 1-1B-50	Aircraft Weight And Balance	01-AUG-2015
TO 35-1-3	Corrosion Prevention And Control, Cleaning, Painting, And Marking Of USAF SE	26-APR-2014
TO 00-20-1	Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures	01-APR-2016
TO 00-25-113	Conservation and Segregation of Critical Alloy and Precious Metal Bearing Parts and Scrap	30-APR-1995
TO 00-5-16	USAF Automated Computer Program Identification Number System (ACPINS)	01-JAN-2009
TO 00-20-14	Air Force Metrology and Calibration Program	
TO 00-25-254-1	Comprehensive Engine Management System Engine Configuration, Status and TCTO Reporting Procedures	25-JUL-2014
TO 00-25-254-2	Comprehensive Engine Management System Manual for DSD: D042	01-DEC-2013
TO-00-85-20	Engine Shipping Instructions	
TO 1-1-686	Desert Storage Preservation and Process Manual for Aircraft, Aircraft Engines, and Aircraft Auxiliary Power Unit Engines	15-DEC-2006
TO-11A-1-47	Department of Defense Ammunition and Explosives Hazard Classification Procedures	30-JUL-2012

Document Number	Document Title	Document Date
TO 33K-1-100-1	Calibration Procedure for Maintenance Data Collection Codes and Calibration Measurement Summaries	30-NOV-2007
TO 33K-1-100-2	Calibration Procedure for Maintenance Data Collection Codes and Calibration Measurement Summaries	30-DEC-2013
UFC 3-600-01	Fire Protection Engineering for Facilities	01-MAR-2013
	Office of the Secretary of Defense – Central Repository for Earned Value Management Data Manual	12-MAR-2008

ANNEX D – CERTIFICATIONS AND APPROVALS

Certifications and Approvals	Reference
Clinger-Cohen Act Compliance	40 U.S.C Subtitle III
USAF Airworthiness Certification (Military Type Certificate [MTC])	AFPD 62-6, AFI 62-601, MIL-HDBK-516C
Air Force Training System and Device Simulator Certification/Validation (SIMCERT/SIMVAL)	AFI 36-2251, AFI 16-1001
DoD Cybersecurity Assessment and Authorization (A&A) for the APT Aircraft System	DoDI 8500.01, DoDI 8510.01
DoD Cybersecurity A&A for the APT GBTS	DoDI 8500.01, DoDI 8510.01
Primary Flight Reference Endorsement	AFI 11-202 Vol 3
Radio Frequency Spectrum Certification(s)	AFI 33-580, DoDI 4650.01
Mission Planning Environment Certification	JMPS Air Force Certification Plan
Navigational Data Chain Certification (Type 2 Letter of Acceptance)	AFI 63-137, FAA Advisory Circular 20-153A
Communication, Navigation, Surveillance/Air Traffic Management (CNS/ATM) Operational Approval	AFI 63-137
Certification of System Readiness for Dedicated OT&E	AFI 99-103, AFI 63-101/20-101, AFMAN 63-119
Carry-on Electronic Equipment Certification (If required)	AFI 11-202V3
DoD International Air Traffic Control RADAR Beacon System/Identification Friend or Foe/Mark XII System (AIMS) Program Office Certification (If required)	DOD AIMS 03-1000
SEEK EAGLE Stores Compatibility	AFI 63-104
Aerial Refueling Clearance (If required)	412 OG OI 99-1, AFPD 62-6, AFI 62-601, MIL-HDBK-516C
UHF SATCOM DAMA	CJCSI 6251.01
Concurrent Servicing Operations Approval	AFI 91-202 and TO 00-25-172
National Aerospace Certification of Authorization	Form 7711-1
Radio Technical Commission for Aeronautics (RTCA)	DO-200B

ANNEX E - ACRONYM LIST

A&A	Assessment and Authorization
AAR	Architecture Analysis Report
ACA	Associate Contractor Agreement
ACPIN	Automated Computer Program Identification Number
ADF	Airworthiness Determination Form
ADL	Advanced Distributed Learning
AETC	Air Education and Training Command
AETCI	Air Education and Training Command Instruction
AF	Air Force
AFB	Air Force Base
AFFSA	Air Force Flight Standards Agency
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFMETCAL	Air Force Metrology and Calibration
AFOSH	Air Force Occupational Safety and Health
AFOTEC	Air Force Operational Test and Evaluation Center
AFSC	Air Force Specialty Codes
AFPAM	Air Force Pamphlet
AGET	Aircrew Ground Egress Trainer
AIMS	Air Traffic Control Radar Beacon System, Identification Friend or Foe MARK XII System
AIWG	Aircraft Information Working Group
AFLCMC	Air Force Life Cycle Management Center
AMT	Accelerated Mission Testing
ANSI	American National Standards Institute
APT	Advanced Pilot Training
APSR	Accountable Property System of Record
ASIL	Aircraft System Integration Laboratory
ASIP	Aircraft Structural Integrity Program
AT	Anti-Tamper
ATD	Aircrew Training Device
ATK	Analysis Tool Kit
ATO	Authority to Operate
ATS	Automatic Test Systems
AWB	Airworthiness Bulletin
BCA	Business Case Analysis
BCE	Base Civil Engineer
BIT	Built-In Test
BOM	Bill of Materials

CAD	Computer Aided Design
CAD/PAD	Cartridge Actuated Device/ Propellant Actuated Device
CBM+	Condition Based Maintenance Plus
CC	Critical Component
CCDR	Contractor Cost Data Report
CCP	Contract Change Proposal
CDCA	Current Document Change Authority
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CEMS	Comprehensive Engine Management System
CETS	Contractor Engineering and Technical Services
CFR	Code of Federal Regulations
CFSR	Contract Funds Status Report
CI	Configuration Item
CIL	Critical Information List
C-ICP	Contractor Inventory Control Point
CLIN	Contract Line Item Number
CLS	Contractor Logistics Support
CM	Configuration Management
CMMI	Capability Maturity Model Integration
CMP	Configuration Management Plan
CMS	Calibration and Measurement Summary
CNS/ATM	Communication, Navigation, Surveillance / Air Traffic Management
CNSSI	Committee on National Security Systems Instruction
COR	Contracting Officer Representative
COTS	Commercial Off-The-Shelf
CPCP	Corrosion Prevention and Control Plan
CPI	Critical Program Information
CPLD	Complex Programmable Logic Device
CRI	Common Repairable Item
CRR	Course Readiness Reviews
CRWG	Computer Resources Working Group
CSA	Configuration Status Accounting
CSCI	Computer Software Configuration Item
CSDR	Cost and Software Data Reporting
CSE	Common Support Equipment
CSI	Critical Safety Item
CSWS	Contractor Supported Weapon System
CTAR	Critical Task Analysis Report
CUI	Controlled Unclassified Information

CVD	Compliance Verification Document
CWBS	Contractor Work Breakdown Structure
D3P	Deactivation, Demilitarization and Disposal Plan
DADT	Durability and Damage Tolerance
DAL	Data Accession List
DBWG	Database Working Group
DCMA	Defense Contract Management Agency
DD	Department of Defense
DFARS	Defense Federal Acquisition Regulation Supplement
DISA	Defense Information Systems Agency
DLA	Defense Logistics Agency
D-level	Depot Level
DM	Data Management
DMAWG	Depot Maintenance Activation Working Group
DMP	DMSMS Management Plan
DMSMS	Diminishing Manufacturing Sources and Material Shortages
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoDM	Department of Defense Manual
DOORS	Dynamic Object Oriented Requirements System
DSD	Data System Designator
DR	Deficiency Report
DRB	Deficiency Review Board
DT&E	Developmental Test & Evaluation
DTP	Detailed Test Plan
DWG	DMSMS Working Group
E3	Electromagnetic Environment Effects
ECP	Engineering Change Proposal
EDD	Estimated Delivery Dates
EDFP	Engineering Data for Provisioning
EFRB	Experimental Flight Release Basis
EHA	Environmental Hazard Analysis
EIA	Electronic Industries Alliance
ELTD	English Language Test Document
EMD	Engineering & Manufacturing Development
ENJJPT	Euro-NATO Joint Jet Pilot Training
ESOH	Environmental Safety & Occupational Health
EESOH	Enterprise Environment, Safety, & Occupational Health
EESOH-MIS	Enterprise Environment, Safety, & Occupational Health – Management Information System

EST	Ejection Seat Trainer
ETIC	Estimated Times In Commission
EVMS	Earned Value Management System
FCA	Functional Configuration Audit
FCR	Facility Construction Reviews
FDC	Facility Design Criteria
FFP	Firm-Fixed-Price
FMECA	Failure Modes, Effects and Criticality Analysis
FMET	Failure Modes and Effects Testing
FMT	Functional Mission Test
FOD	Foreign Object Debris
FOIA	Freedom of Information Act
FPGA	Field Programmable Gate Arrays
FRACAS	Failure Reporting, Analysis, and Corrective Action System
FRB	Failure Review Board
FRP	Full Rate Production
FRR	Facility Readiness Review
FSR	Field Service Representative
GAO	Government Accountability Office
GBTS	Ground Based Training System
GDWG	GBTS Development Working Groups
GEIA	Government Electronics and Information Technology Association
GFE	Government Furnished Equipment
GFI	Government Furnished Information
GIDEP	Government Industry Data Exchange Program
G-SIP	Government-inventory control point
GSS	Ground Support Station
GTD	Ground Training Device
GTIMS	Graduate Training Integration Management System
HAZMART	Hazardous Materials Pharmacy
HAZMAT	Hazardous Materials
HEDAD-M	Human Engineering Design Approach Document – Maintainer
HEDAD-O	Human Engineering Design Approach Document – Operator
HHA	Health Hazard Analysis
HMMP	Hazardous Materials Management Program
HSI	Human Systems Integration
HSIPP	Human Systems Integration Program Plan
HSIR	Human Systems Integration Report
HTS	Hazard Tracking System
IAT	Individual Aircraft Tracking

IAW	In Accordance With
ICD	Interface Control Document
ICS	Interim Contractor Support
ICWG	Interface Control Working Group
ICR	Instructional Change Requests
IDE	Integrated Data Environment
IEEE	Institute of Electrical and Electronics Engineers
IFF	Introduction to Fighter Fundamentals
ILS-S	Integrated Logistics System-Supply
ILST	Integrated Logistics Support Team
IMI	Interactive Multimedia Instruction
IMIDR	Interactive Multimedia Instruction Design Review
I-level	Intermediate level
IMP	Integrated Master Plan
IMS	Integrated Master Schedule
IOT&E	Initial Operational Test & Evaluation
IPMR	Integrated Program Management Report
IPPS	Initial Provisioning Performance Specification
IRS	Interface Requirements Specifications
ISE	Integrated System Evaluation
ISS	Initial Squadron Standup
IT	Information Technology
IT&E	Integrated Test & Evaluation
ITEM	Integrated Test Event Matrix
ITP	Integrated Test Plan
ITT	Integrated Test Team
IUID	Item Unique Identification
JDRS	Joint Deficiency Reporting System
JRMET	Joint Reliability Maintainability and Evaluation Team
L/ESS	Loads Environmental Spectral Survey
LAT	Lot Acceptance Test
LCC	Life Cycle Cost
LCOM	Logistics Composite Model
LORA	Level of Repair Analysis
LPD	Logistics Product Data
LRIP	Low Rate Initial Production
LRU	Line Replaceable Unit
LSR	Logistics Support Representative
LtF/ACI	Lead-the-Fleet Planning / Analytical Condition Inspections
MACC	Modification Airworthiness Certification Criteria

MC	Mission Capable
MEARS	Multi-User ECP Automated Review System
MECSIP	Mechanical Equipment and Subsystems Integrity Program
MESL	Minimum Essential Subsystem List
MFR	Military Flight Release
MICAP	Mission Capable
MIL-HDBK	Military Handbook
MIL-STD	Military Standard
MMP	Manufacturing Management Plan
MOB	Main Operating Base
MOCC	Maintenance Operations Control Center
MRA	Manufacturing Readiness Assessment
MRL	Manufacturing Readiness Level
M&S	Modeling and Simulation
MSS	Mission Support System
MT&SE	Maintenance Test & Support Equipment
MTC	Military Type Certification
MTS	Maintenance Training System
NAS	National Aerospace Standard
NDI	Non-Developmental Item
Nextgen	Next Generation
NFPA	National File Protection Association
NISPOM	National Industrial Security Program Operating Manual
NIST	National Institute of Standards and Technology
NSN	National Stock Number
OA	Operational Assessment
O&A	Over and Above
OBOGS	On-Board Oxygen Generation System
OCM	Original Component Manufacturer
OEM	Original Equipment Manufacturer
OFT	Operational Flight Trainer
OFP/SI	Operational Flight Program/ Software Item
O-level	Organizational level
OMIT	Operation, Maintenance, Installation, and Training
OPSEC	Operations Security
OSD	Office of the Secretary of Defense
OT&E	Operational Test & Evaluation
OTRR	Operational Test Readiness Review
PCA	Physical Configuration Audit
PCCIE	Power Conditioning and Continuation Interfacing Equipment

PCG	Provisioning Guidance Conference
PCO	Procurement Contracting Officer
PDR	Preliminary Design Review
PFR	Primary Flight Reference
PHS&T	Packaging, Handling, Storage, and Transportation
PIIR	Preliminary Integrated IMI Reviews
PIT	Pilot Instructor Training
PKI	Public Key Infrastructure
PMR	Program Management Review
POS	Pre-Operational Support
PPP	Program Protection Plan
PR	Problem Report
PSAP	Product Support Analysis Plan
PSE	Peculiar Support Equipment
PSIP	Propulsion System Integrity Program
PTD	Provisioning Technical Documentation
PTT	Part Task Trainer
QASP	Quality Assurance Surveillance Plan
QMS	Quality Management System
QTG	Qualification Test Guides
R&M	Reliability & Maintainability
R&MWG	Reliability and Maintainability Working Group
RAM	Reliability, Availability, and Maintainability
RCM	Reliability Centered Maintenance
RCMPP	Reliability Centered Maintenance Program Plan
REMIS	Reliability and Maintainability Information System
RFV	Request for Variance
RMF	Risk Management Framework
RMPG	R&M Growth Program
RMPP	Reliability and Maintainability Program Plan
ROM	Read Only Memory
RTM	Requirements Traceability Matrix
SAE	Society of Automotive Engineers
SAPSP	Site Activation Phased Support Plan
SATAF	Site Activation Task Force
SCN	Specification Change Notice
SCORM	Shareable Content Object Reference Model
SCR	Special Contract Requirement
SCRM	Supply Chain Risk Management
SDL	Software Development Lab

SDP	Software Development Plan
SE	Support Equipment
SEMP	Systems Engineering Management Plan
SEP	Systems Engineering Plan
SERD	Support Equipment Recommendation Documents
SGTO	Small Group Try Outs
SHA	Schedule Health Assessment
SIL	System Integration Laboratory
SIMCERT	Simulator Certification
SIP	Systems Integration Plan
SLFE	System Level Formative Evaluation
SME	Subject Matter Expert
SOQA	Simulator Operational Quality Assurance
SOW	Statement of Work
SPE	System Performance Evaluation
SPS	Software Product Specification
SQMS	Simulator Quality Management System
SRA	Schedule Risk Assessment
SRDR	Software Resources Data Reports
SRM	System Reliability Model
SRVM	Specification Requirement Verification Matrix
SRU	Shop Replaceable Unit
SS	System Specification
SSG	System Safety Group
SSWG	System Safety Working Group
SSEWG	System Security Engineering Working Group
SSHAR	Systems Safety Hazard Analysis Report
SSRA	System Safety Risk Assessment
SSPP	System Safety Program Plan
STIG	Security Technical Implementation Guide
STrP	Software Transition Plan
STRR	Site Training Readiness Review
SUPT	Specialized Undergraduate Pilot Training
SVR	System Verification Review
T-2	Temporary-2
T&E	Test and Evaluation
T3M	Training Task Traceability Matrix
TAA	Technical Airworthiness Authority
TACC	Tailored Airworthiness Certification Criteria
TD	Technical Data

TDP	Technical Data Package
TEMP	Test and Evaluation Master Plan
TFRD	Test Facility Requirements Document
TIM	Technical Interchange Meeting
TIMS	Training Integration Management System
TINA	Truth in Negotiations Act
TIS	Test Information Sheet
TMCR	Technical Manual Contract Requirements
TMDE	Test, Measurement and Diagnostic Equipment
TNMCS	Total Non-Mission Capable Supply
TO	Technical Order
TOCV	Technical Order Certification and Verification
TP	Test Program
TPI	Test Program Instructions
TPM	Technical Performance Measures
TPSD	Test Program Set Documents
TRR	Test Readiness Review
TSCW	Training System Configuration Working Group
TSCO	Training System Change Order
TSN	Trusted Systems and Networks
TSRA	Training System Requirements Analysis
TSSC	Training System Support Center
UFC	Unified Facilities Criteria
UPT	Undergraduate Pilot Training
US	United States
USAF	United States Air Force
UTD	Unit Training Device
UUT	Unit Under Test
W&B	Weight and Balance
WIT	Watch Item
WST	Weapon System Trainer

ANNEX F - Procedure for Submission of Over & Above Requests below the TINA Threshold

As used in this Annex, "Over and Above (O&A) work" means work discovered during the course of the contract that is (1) within the general scope of the contract, (2) not covered by the line item(s) for the basic work under the contract, and (3) necessary in order to satisfactorily complete the contract.

Upon discovery of the need for O&A work, the Contractor shall prepare and furnish a work request to the Procurement Contracting Officer. A work request means a document prepared by the Contractor, containing data on the type of discrepancy disclosed, the specific location of the discrepancy, and the estimated labor hours and material required to correct the discrepancy. Data shall be sufficient to satisfy contract requirements and obtain the authorization of the Contracting Officer to perform the proposed work.

Upon receipt of the work request, the Government shall promptly review the work request, verify that the proposed work is required and not covered under the basic contract line item(s), verify whether the proposed corrective action is appropriate, and authorize O&A work as necessary.

If the O&A work is authorized, the Contractor shall promptly submit a proposal for the O&A work. Proposed hours shall applyl the pre-priced WRAP rate for the year(s) in which he work will occur. The Government and Contractor will then negotiate a settlement for the O&A work and definitize it in a contract modification.

During the course of the work, the Contractor is required to notify the Government in writing upon reaching the 75% expenditure level in order to allow the Government time to review the level of work accomplished and determine a further course of action.

ANNEX G - APT SYSTEM TYPE 1 TRAINING THROUGHPUT

Annex G Table 1: DT&E Type 1 Training Throughput

DT&E Type 1 Training Course	Student Functions	Skill Level AFSC or Civilian Equivalent	# Students	# Observers	CONUS Locations
Aircrew Training	DT&E Cadre (Pilots)	Test Pilot (11EX)	5	3	Combo of CTR & GOV Sites
	OT Cadre (Integrated Test / OA)	Line Pilot (11KX)	4		Combo of CTR & GOV Sites
Flight Test Engineer Training	Combined Test Force Flight Test Engineers	Operations Engineer (62E3 or civilian equivalent 0800 series)	8	2	Combo of CTR & GOV Sites
GBTS Simulator Operator Training	DT&E Cadre	Simulator Operator (2181 civilian job series)	6	2	Contractor Site
	OT Cadre (Integrated Test / OA)	Simulator Operator (2181 civilian job series)	4		Contractor Site
Government Familiarization Training	General Program Support	Any Program Office, AETC Staff, Test support personnel	28		Government Site
TOCV Process Training	Both DT&E and OT&E Support	Maintainers (XXXX), Logistics (XXXX), other Product Support (XXX)	48		Combo of CTR & GOV Sites
Maintenance Training	DT&E Cadre (Logistics T&E)	Crew Chief (2A3X3)	3	2	Contractor Site
		Avionics (2A374)	3		Contractor Site
	OT Cadre (Integrated Test / OA)	Crew Chief (2A3X3)	1	2	Contractor Site
		Avionics (2A374)	1		Contractor Site

Annex G Table 2: Initial Operational Test & Evaluation (IOT&E) Type 1 Training Throughput

IOT&E Type 1 Training Course	Student Functions	Position / AFSC or Civilian Equivalent	# Students	# Observers	CONUS Locations
Pilot Training	IOT&E Cadre	Line Pilot (11KX)	14	2	CTR & GOV Sites
Combat Systems Officer Training	IOT&E Cadre	IFF Line Weapons Systems Officer (12FX)	2		CTR & GOV Sites
GBTS Simulator Operator Training	IOT&E Cadre	Simulator Operator (2181 civilian job series)	6		Government Site
Life Support Systems Training	IOT&E Cadre	Life Support (1Pxxx or civilian equivalent)	4	2	Government Site
Maintenance Training	IOT&E Cadre	Tactical Aircraft Maintenance "Crew Chief" (2A3X3)	14	2	Government Site
		*Crew Chief Engine Run (Certification)	*6 of 14	1	Government Site
		Aerospace Propulsion (2A6X1X)	5		Government Site
		*Propulsion Engine Run (Certification)	*5 of 5	1	Government Site
		Fighter Aircraft Integrated Avionics (2A3X4)	5	2	Government Site
		Electrical and Environmental (2A6X6	5		Government Site
		Aircrew Egress Systems (2A6X6)	6	1	Government Site
		Aircraft Fuel System (2A6X4)	4	1	Government Site

Annex G Table 3: Initial Squadron Stand-Up (ISS) Type 1 Training Throughput

ISS Type 1 Training Course	Student Functions	Position / AFSC or Civilian Equivalent	No. Students (per MOB)	No. of Observers (per MOB)	CONUS Locations
Instructor Pilot Conversion Training	Squadron Cadre	Line Pilot (11KX)	TBD	TBD	Provided once at each MOB
CSO Conversion Training	Squadron Cadre	IFF Line Weapons Systems Officer (12FX)	TBD	TBD	Provided once at each MOB
GBTS Simulator Operator Training	Squadron Cadre	Simulator Operator (2181 civilian job series)	TBD	TBD	Provided once at each MOB
Life Support Training	Squadron Cadre	Life Support (1Pxxx or civilian equivalent)	TBD	2	Provided once at each MOB
Maintenance Training	ISS Cadre	Tactical Aircraft Maintenance ”Crew Chief” (2A3X3)	19	2	GOV Site
		*Crew Chief Engine Run (Certification)	*6 of 19	1	GOV Site
		Aerospace Propulsion (2A6X1X)	7	1	GOV Site
		*Propulsion Engine Run (Certification)	*5 of 7	1	GOV Site
		Fighter Aircraft Integrated Avionics (2A3X4)	7	2	GOV Site
		Electrical and Environmental (2A6X6)	6	1	GOV Site
		Aircrew Egress Systems (2A6X3)	7	1	GOV Site
		Aircraft Fuel Systems (2A6X4)	4	1	GOV Site

*** Denotes subset of students with additional skills**

Annex G Table 4 Initial Squadron Stand-Up (ISS) Type 1 Depot Maintenance and Commodity Training

ISS Type 1 Training Course	Student Functions	Position / AFSC or Civilian Equivalent	No. Students		CONUS Locations
Depot Maintenance and Commodity Training	Depot Maintenance	Tactical Aircraft Maintenance "Crew Chief" (2A3X3) *Crew Chief Engine Run (Certification)	2		CTR Site
		*Crew Chief Engine Run (Certification)	*1 of 2		CTR Site
		Propulsion (2A6X1X)	2		CTR Site
		*Propulsion Engine Run (Certification)	*1 of 2		CTR Site
		Fighter Aircraft Integrated Avionics (2A374)	2		CTR Site
		Electrical and Environmental (2A6X6)	2		CTR Site
		Aircrew Egress Systems (2A6X3)	2		CTR Site
		Aircraft Fuel Systems (2A6X4)	2		CTR Site
		Aircraft Structures (2A7X3)	2		CTR Site
		Commodity Repair Technician	**2		CTR Site

*** Denotes subset of students with additional skills**
****Per Government Depot Reparable Commodity**

Annex G Table 5 Early Type 1 Maintenance Training

Type 1 Training Course	Student Functions	Position / AFSC or Civilian Equivalent	No. Students	No. of Observers	CONUS Locations
Maintenance Instructors	Instructor	2A3X3, 2A6X1X, 2A3X4, 2A6X6, 2A6X3, 2A6X4	11	0	Government Site

ANNEX H - CONFIGURATION ITEM/COMPUTER SOFTWARE CONFIGURATION ITEMS LIST

CI	CSCI
Aircraft	
Weapon System Trainer	
Weapon System Trainer Briefing/Debriefing Station	
Operational Flight Trainer	
Unit Training Device	
Aircrew Ground Egress Trainer	
Ejection Seat Trainer	
Part Task Trainer	
	Interactive Multimedia Instruction
Training System Support Center	Training System Support Center
Peculiar Support Equipment	
	Learning Management System
Engine	
Ejection Seat	
Canopy including Fracturing/Jettison System	
On-Board Oxygen Generating System	
Landing Gear	
Large Area Display Subsystem	Large Area Display Subsystem
Head-up Type Display	Head-up Type Display
Central Mission Processing Subsystem	Central Mission Processing Subsystem
Embedded Training Processing Subsystem	Embedded Training Processing Subsystem
Central Maintenance/BIT Processing Subsystem	Central Maintenance/BIT Processing Subsystem
Auxiliary Power Unit	
Flight Controls	
Aircraft Mission Debrief Station	Aircraft Mission Debrief Station
Communication / Navigation	
Aerial Refueling Subsystem	
Ground Support Station	Ground Support Station
Flight Management Processing Subsystem	Flight Management Processing Subsystem
Data Retrieval and Recording Processing	Data Retrieval and Recording Processing Subsystems
	Aircrew Training Device Host Computing System
	Aircrew Training Device Instructor Operating Station
	Aircrew Training Device Aural Cueing System
	Aircrew Training Device Control Loading System
	Aircrew Training Device Visual System
	CBM+ Software Tool

ANNEX I - SOW / CLIN MATRIX

CLIN 0001: EMD - ADVANCED PILOT TRAINING DEVELOPMENT

3.1	3.1.1	3.1.2	3.2.1.3.3	3.2.1.5	3.2.1.5.1
3.2.1.5.2	3.2.1.5.3	3.2.1.6	3.2.3.8	3.2.3.9	3.2.3.10
3.2.3.11	3.2.3.12	3.2.3.12.1	3.2.3.13	3.2.3.13.1	3.2.3.13.2
3.2.3.14	3.2.3.14.1	3.2.3.14.2	3.2.5	3.2.6.8	3.2.6.9.1
3.2.6.9.2	3.2.6.9.3	3.2.6.9.6	3.2.7.1	3.2.7.2	3.2.7.2.1
3.2.7.2.1.1	3.2.7.3	3.2.7.4	3.2.7.4.1	3.2.7.5	3.2.7.5.1
3.2.7.5.2	3.2.7.6	3.2.7.7	3.2.8.1	3.2.8.2	3.2.8.4
3.2.8.5	3.2.8.6	3.2.8.7	3.2.8.8	3.2.8.9	3.2.8.11
3.2.8.12	3.2.8.13	3.2.8.13.1	3.2.9.1.1	3.2.9.1.6	3.2.9.1.6.1
3.2.9.1.6.2	3.2.9.1.6.3	3.2.9.1.7	3.2.9.1.8	3.2.9.1.9	3.2.9.1.11
3.2.10.2	3.2.10.3	3.2.10.6	3.2.11	3.2.11.1	3.2.11.2
3.2.11.3	3.2.11.4	3.2.11.5	3.2.12	3.2.12.1	3.2.12.2
3.2.12.3	3.2.12.7	3.2.13	3.2.14	3.2.15.1	3.2.15.2.1
3.2.15.2.2	3.2.15.3	3.4	3.4.1	3.4.1.1	3.4.1.1.1
3.4.1.1.2	3.4.1.1.3	3.4.1.1.4	3.4.1.1.5	3.4.1.1.6	3.4.1.2
3.4.1.3	3.4.1.4	3.4.1.5	3.4.1.6	3.4.1.7	3.4.1.8
3.4.1.9	3.4.1.11	3.4.1.12	3.4.1.13.1	3.4.1.13.2	3.4.1.14
3.4.1.15	3.4.1.15.1	3.4.1.15.2	3.4.1.15.3	3.4.1.16	3.4.1.16.1
3.4.1.16.2	3.4.1.16.3	3.4.1.16.4	3.4.1.17	3.4.1.18	3.4.1.19
3.4.1.20	3.4.1.21	3.4.1.22	3.4.1.23	3.4.1.24	3.4.1.24.1
3.4.1.24.2	3.4.1.25	3.4.2.1	3.4.2.2	3.4.3.1	3.4.3.1.1

3.4.3.1.2	3.4.3.1.3	3.4.3.1.4	3.4.3.1.5	3.4.3.1.6	3.4.3.1.7
3.4.3.1.7.1	3.4.3.1.7.2	3.4.3.1.7.3	3.4.3.2	3.4.3.2.1	3.4.3.2.2
3.4.3.2.3	3.4.3.2.4	3.4.3.2.4.1	3.4.3.2.4.2	3.4.3.2.4.3	3.4.3.2.4.4
3.4.3.3.1	3.4.3.3.2	3.4.3.3.3	3.4.3.3.4	3.4.3.3.5	3.4.3.4
3.4.4	3.5.2	3.5.2.1	3.5.2.2	3.5.2.3	3.5.2.4
3.5.2.5	3.5.2.6	3.5.2.7	3.5.2.7.1	3.5.2.7.2	3.5.2.7.2.1
3.5.2.8	3.5.2.8.1	3.5.2.8.2	3.5.2.9	3.5.2.9.1	3.5.2.9.2
3.5.2.9.3	3.5.2.9.4	3.5.2.9.5	3.5.2.9.6	3.5.2.9.7	3.5.2.9.8
3.5.2.9.8.1	3.5.2.9.9	3.5.2.9.10	3.5.2.10	3.5.2.10.1	3.5.2.10.2
3.5.2.10.3	3.7.1	3.7.2	3.7.3	3.7.3.1	3.7.4
3.7.5	3.7.7.1	3.7.7.1.1	3.7.7.1.2	3.8.2	3.8.3
3.8.4	3.8.5	3.8.6	3.8.6.1		

CLIN0002: EMD - TECHNICAL MANUALS

3.4.1.5	3.4.2.2	3.5.2.1	3.5.2.2	3.5.2.3	3.5.2.4
3.5.2.5	3.5.2.6	3.6.1	3.6.2.4	3.6.3	3.6.4

CLIN0003: EMD - TECHNICAL DATA PACKAGES

3.2.8.12	3.4.1.14	3.5.3.2.7.9	3.6.2.1	3.6.2.2	3.6.2.3
3.6.2.4	3.6.2.5	3.6.2.6	3.6.3	3.6.4	3.7.5
3.8.3					

CLIN0004: EMD - OTHER DATA (NSP)

3.1.1	3.1.2	3.1.2.1	3.2.1.1	3.2.1.2	3.2.1.3.1

3.2.1.3.2	3.2.1.3.3	3.2.1.4	3.2.1.5	3.2.1.5.1	3.2.1.5.2
3.2.1.5.3	3.2.1.6	3.2.2.1	3.2.2.2	3.2.2.3	3.2.2.4
3.2.2.4.1	3.2.2.5	3.2.2.6	3.2.3.6	3.2.3.7	3.2.3.8
3.2.3.9	3.2.3.10	3.2.3.11	3.2.3.12	3.2.3.12.1	3.2.3.13
3.2.3.13.1	3.2.3.13.2	3.2.3.14.1	3.2.4.2	3.2.4.4	3.2.4.5
3.2.4.6	3.2.4.9	3.2.4.10	3.2.4.11	3.2.5	3.2.6.1
3.2.6.2	3.2.6.3	3.2.6.4	3.2.6.5	3.2.6.6	3.2.6.7
3.2.6.9.1	3.2.6.9.2	3.2.6.9.3	3.2.6.9.4	3.2.6.9.6	3.2.6.9.7
3.2.6.9.8	3.2.6.9.9	3.2.6.9.11	3.2.7.1.1	3.2.7.2	3.2.7.2.1
3.2.7.2.1.1	3.2.7.3	3.2.7.4	3.2.7.4.1	3.2.7.5.1	3.2.7.5.2
3.2.7.6	3.2.7.6.1	3.2.7.7	3.2.8.1	3.2.8.2	3.2.8.3
3.2.8.4	3.2.8.5	3.2.8.6	3.2.8.7	3.2.8.8	3.2.8.9
3.2.8.10	3.2.9.1.1	3.2.9.1.2	3.2.9.1.3	3.2.9.1.4	3.2.9.1.5
3.2.9.1.6	3.2.9.1.6.1	3.2.9.1.6.2	3.2.9.1.6.3	3.2.9.1.7	3.2.9.1.8
3.2.9.1.9	3.2.9.1.10	3.2.9.1.11	3.2.9.1.12	3.2.10.1	3.2.10.2
3.2.10.3	3.2.10.4	3.2.10.5	3.2.11	3.2.11.1	3.2.11.2
3.2.11.3	3.2.11.4	3.2.11.5	3.2.12.4	3.2.12.5	3.2.12.6.1
3.2.12.6.2	3.2.12.7.1	3.2.12.7.2	3.2.12.7.3	3.2.12.7.4	3.2.12.7.7
3.2.12.8	3.2.12.9	3.2.13	3.2.14	3.2.14.1	3.2.14.2
3.2.15.1	3.2.15.2.1	3.2.15.2.2	3.2.15.3	3.3.1.1	3.3.1.1.1
3.3.1.2.1	3.3.1.2.2	3.3.1.3	3.3.1.4	3.3.1.6	3.3.1.7
3.3.1.8	3.3.1.9	3.3.1.11	3.3.1.12	3.3.2.1	3.3.2.2
3.3.2.3	3.3.2.4	3.3.2.5	3.3.2.6	3.3.2.7	3.3.2.8
3.3.2.9	3.3.3	3.3.4	3.3.4.2	3.3.5.1	3.3.5.2
3.3.5.3	3.3.5.4	3.3.5.5	3.3.5.6	3.3.5.7	3.4.1.1.1

3.4.1.1.2	3.4.1.1.3	3.4.1.4	3.4.1.11	3.4.1.12	3.4.1.15.2
3.4.1.16.1	3.4.1.16.3	3.4.1.16.4	3.4.1.18	3.4.1.19	3.4.1.21
3.4.1.22	3.4.1.24.2	3.4.1.25	3.4.3.1.7	3.4.3.2.2.2	3.4.3.2.4
3.4.4	3.5.2	3.5.2.1	3.5.2.2	3.5.2.3	3.5.2.4
3.5.2.5	3.5.2.6	3.5.2.7.2	3.5.2.7.2.1	3.5.2.7.2.2	3.5.2.8
3.5.2.8.1	3.5.2.8.2	3.5.2.9	3.5.2.9.1	3.5.2.9.2	3.5.2.9.3
3.5.2.9.4	3.5.2.9.5	3.5.2.9.6	3.5.2.9.7	3.5.2.9.8	3.5.2.9.8.1
3.5.2.9.9	3.5.2.9.10	3.5.2.9.11	3.5.2.9.11.1	3.5.2.9.11.2	3.5.2.10
3.5.2.10.1	3.5.2.10.2	3.5.2.10.3	3.5.3.1.1	3.5.3.1.2	3.5.3.1.2.1
3.5.3.1.2.2	3.5.3.1.2.3	3.5.3.1.2.4	3.5.3.1.2.4.1	3.5.3.1.2.5	3.5.3.1.3
3.5.3.1.3.1	3.5.3.1.3.2	3.5.3.1.3.3	3.5.3.1.3.4	3.5.3.1.3.5	3.5.3.1.3.6
3.5.3.2.1	3.5.3.2.1.1	3.5.3.2.3	3.5.3.2.3.1	3.5.3.2.3.2	3.5.3.2.4
3.5.3.2.5	3.5.3.2.5.1	3.5.3.2.5.2	3.5.3.2.7	3.5.3.2.7.2	3.5.3.2.7.3
3.5.3.2.7.4	3.5.3.2.7.5	3.5.3.2.7.5.1	3.5.3.2.7.5.2	3.5.3.2.7.6	3.5.3.2.7.7
3.5.3.2.7.7.1	3.5.3.2.7.8	3.5.3.2.7.8.1	3.5.3.2.7.10	3.5.3.2.8	3.5.3.2.8.1
3.5.3.2.8.2	3.5.3.2.8.3	3.6.2.5	3.6.2.6	3.6.2.7	3.6.3
3.6.4	3.7.3	3.7.3.1	3.7.4	3.7.5	3.7.6
3.7.7.1	3.7.7.1.2	3.7.11	3.8.2	3.8.3	3.8.4
3.8.5	3.8.6.1	3.9	3.9.1.2	3.9.1.2.1	3.9.1.2.2
3.9.1.3	3.9.1.4	3.9.1.5	3.9.2.2	3.9.3.1	3.9.3.2
3.9.3.3	3.9.3.4	3.9.3.4.1	3.9.3.4.2	3.9.3.5	3.9.3.6
3.9.3.11	3.9.3.12	3.9.3.13	3.9.3.13.1	3.9.3.13.2	3.9.3.14
3.9.3.14.1	3.9.3.14.2	3.9.3.14.3	3.9.3.14.3.1		

CLIN0005: EMD – TYPE 1 TRAINING (DT and OT)

3.5.3	3.5.3.1	3.5.3.1.1	3.5.3.1.2	3.5.3.1.2.1	3.5.3.1.2.2
3.5.3.1.2.3	3.5.3.1.2.4	3.5.3.1.2.4.1	3.5.3.1.2.5	3.5.3.1.3	3.5.3.1.3.1
3.5.3.1.3.2	3.5.3.1.3.3	3.5.3.1.3.4	3.5.3.1.3.5	3.5.3.1.3.5.1	3.5.3.1.3.6

CLIN0006: EMD – TEST ARTICLE – AIRCRAFT

3.1	3.2.6.9.6	3.2.6.9.10	3.2.12	3.2.12.2	3.4.1.10

CLIN0007: EMD – TEST ARTICLE – WEAPON SYSTEM TRAINERS

3.5.2	3.5.2.1	3.5.2.7.2.2

CLIN0008: EMD – TEST ARTICLE – OPERATIONAL FLIGHT TRAINER

3.5.2	3.5.2.2	3.5.2.7.2.2

CLIN0009: EMD – TEST ARTICLE – UNIT TRAINING DEVICE

3.5.2	3.5.2.3	3.5.2.7.2.2

CLIN0010: EMD – TEST ARTICLE – AIRECREW GROUND EGRESS TRAINER

3.5.2	3.5.2.4

CLIN0011: EMD – TEST ARTICLE – EJECTION SEAT TRAINER

3.5.2	3.5.2.5

CLIN0012: EMD – TEST ARTICLE – PART TASK TRAINER

3.5.2	3.5.2.6

CLIN0013: EMD – TEST ARTICLE – AIRCRAFT MISSION DEBRIEF STATION

3.2.15.1

CLIN0014: EMD – TEST ARTICLE – ADDITIONAL DTD ADAPTER

3.2.15.1

CLIN0015: EMD – TEST ARTICLE – AIRCRAFT REPRESENTATIVE FOREBODY

3.4.1.24.2

CLIN0016: EMD – TEST ARTICLE – AIRCRAFT EXTERNAL STORES

3.4.1.23

CLIN0017: EMD – TEST ARTICLE – AIRCRAFT SOFTWARE DEVELOPMENT LAB

3.2.10.3

CLIN0018: EMD – TEST ARTICLE – AIRCRAFT SYSTEMS INTEGRATION LAB

3.2.5

CLIN0019: EMD – TEST ARTICLE – TRAINING SYSTEMS SUPPORT CENTER

3.5.2	3.5.2.8	3.5.2.8.1	3.5.2.8.2

CLIN0020: EMD – TEST ARTICLE – IMI/TRAINING MEDIA

3.5.2	3.5.2.9	3.5.2.9.1	3.5.2.9.2	3.5.2.9.4	3.5.2.9.5
3.5.2.9.6	3.5.2.9.7	3.5.2.9.8	3.5.2.9.8.1	3.5.2.9.9	

CLIN0021: EMD – TEST ARTICLE – GBTS MISSION DEBRIEF STATION

3.5.2	3.5.2.1	3.5.2.2

CLIN0022: SYSTEMS ENGINEERING AND PROGRAM MANAGEMENT

3.1	3.1.2.1	3.2	3.2.1.1	3.2.1.2	3.2.1.3.1
3.2.1.3.2	3.2.1.3.3	3.2.1.4	3.2.1.5	3.2.1.5.1	3.2.1.5.2
3.2.1.5.3	3.2.1.6	3.2.2.1	3.2.2.2	3.2.2.3	3.2.2.4
3.2.2.4.1	3.2.2.5	3.2.2.6	3.2.3.1	3.2.3.2	3.2.3.3
3.2.3.4	3.2.3.5	3.2.3.6	3.2.3.7	3.2.3.8	3.2.3.9
3.2.3.10	3.2.3.11	3.2.3.12	3.2.3.12.1	3.2.3.13	3.2.3.13.1
3.2.3.13.2	3.2.3.14	3.2.3.14.1	3.2.3.14.2	3.2.3.14.3	3.2.3.14.4
3.2.4	3.2.4.1	3.2.4.2	3.2.4.3	3.2.4.4	3.2.4.5
3.2.4.6	3.2.4.7	3.2.4.8	3.2.4.9	3.2.4.10	3.2.4.11
3.2.5	3.2.6	3.2.6.1	3.2.6.2	3.2.6.3	3.2.6.4
3.2.6.5	3.2.6.6	3.2.6.7	3.2.6.8	3.2.6.9.1	3.2.6.9.2
3.2.6.9.3	3.2.6.9.4	3.2.6.9.5	3.2.6.9.6	3.2.6.9.7	3.2.6.9.8
3.2.6.9.9	3.2.6.9.11	3.2.7.1	3.2.7.1.1	3.2.7.2	3.2.7.2.1
3.2.7.2.1.1	3.2.7.3	3.2.7.4	3.2.7.4.1	3.2.7.5	3.2.7.5.1
3.2.7.5.2	3.2.7.6	3.2.7.6.1	3.2.7.7	3.2.7.8	3.2.8.1
3.2.8.2	3.2.8.3	3.2.8.4	3.2.8.6	3.2.8.7	3.2.8.8
3.2.8.9	3.2.8.10	3.2.8.11	3.2.8.12	3.2.8.13	3.2.8.13.1
3.2.9.1	3.2.9.1.1	3.2.9.1.2	3.2.9.1.3	3.2.9.1.4	3.2.9.1.5
3.2.9.1.7	3.2.9.1.8	3.2.9.1.9	3.2.9.1.10	3.2.9.1.11	3.2.9.1.12
3.2.10.1	3.2.10.2	3.2.10.3	3.2.10.4	3.2.10.5	3.2.10.6
3.2.10.7	3.2.11	3.2.11.1	3.2.11.2	3.2.11.3	3.2.11.4

3.2.11.5	3.2.12	3.2.12.1	3.2.12.2	3.2.12.3	3.2.12.4
3.2.12.5	3.2.12.6.1	3.2.12.6.2	3.2.12.6.3	3.2.12.7	3.2.12.7.1
3.2.12.7.2	3.2.12.7.3	3.2.12.7.4	3.2.12.7.5	3.2.12.7.6	3.2.12.7.7
3.2.12.8	3.2.12.9	3.2.12.10	3.2.14	3.2.14.1	3.2.14.2
3.3.1.1	3.3.1.1.1	3.3.1.1.2	3.3.1.2.1	3.3.1.2.2	3.3.1.3
3.3.1.4	3.3.1.5.1	3.3.1.5.2	3.3.1.6	3.3.1.7	3.3.1.8
3.3.1.9	3.3.1.10	3.3.1.11	3.3.2.1	3.3.2.2	3.3.2.3
3.3.2.4	3.3.2.5	3.3.2.6	3.3.2.7	3.3.2.8	3.3.2.9
3.3.3	3.3.4	3.3.4.1	3.3.4.2	3.3.5	3.3.5.1
3.3.5.2	3.3.5.3	3.3.5.4	3.3.5.5	3.3.5.6	3.3.5.7
3.3.6	3.5.1	3.5.1.1	3.5.1.2	3.5.1.3	3.5.1.4
3.5.1.5	3.5.2	3.5.2.7.2	3.5.2.9.3	3.5.2.9.10	3.5.2.9.11
3.5.2.9.11.1	3.5.2.9.11.2	3.7.6	3.7.11	3.8.1	3.8.2
3.8.3	3.8.5	3.9.3.1	3.9.3.2	3.9.3.3	3.9.3.4
3.9.3.4.1	3.9.3.4.2	3.9.3.4.3	3.9.3.5	3.9.3.6	3.9.3.9
3.9.3.10	3.9.3.11	3.9.3.12	3.9.3.14	3.9.3.14.1	3.9.3.14.2
3.9.3.14.3	3.9.3.14.3.1				

CLIN0023: SITE ACTIVATION

3.2.15.2.1	3.2.15.2.2	3.2.15.3	3.9	3.9.1.1	3.9.1.2
3.9.1.2.1	3.9.1.2.2	3.9.1.3	3.9.1.4	3.9.1.5	3.9.1.6
3.9.2.1	3.9.2.2	3.9.2.3			

CLIN0024: TYPE 1 TRAINING- INITIAL SQUADRON STANDUP

3.5.3	3.5.3.1	3.5.3.1.1	3.5.3.1.4	3.5.3.1.4.1	3.5.3.1.4.2
3.5.3.1.4.3	3.5.3.1.4.4	3.5.3.1.4.5			

CLIN0025: O-LEVEL FIELD SERVICE REPRESENTATIVE SUPPORT

3.9.3.8

CLIN0026: O-LEVEL FIELD SERVICE REPRESENTATIVE SUPPORT (NTE)

3.9.3.8

CLIN0027: DEPOT ACTIVATION

3.7.7.2	3.7.7.2.1	3.7.7.2.2	3.7.11	3.9	3.9.1.1
3.9.1.2	3.9.1.2.1	3.9.1.2.2	3.9.1.3	3.9.1.4	3.9.1.5
3.9.1.6	3.9.2.1	3.9.2.2	3.9.3.13	3.9.3.13.1	3.9.3.13.2

CLIN0028: TYPE 1 TRAINING - DEPOT

3.5.3	3.5.3.1	3.5.3.1.1	3.5.3.1.4	3.5.3.1.4.6

CLIN0029: DEPOT LEVEL FIELD SERVICE REPRESENTATIVE SUPPORT

3.9.3.8.1

CLIN0030: DEPOT LEVEL FIELD SERVICE REPRESENTATIVE SUPPORT (NTE)

3.9.3.8.1

CLIN0031: IMI/CURRICULUM UPDATES

3.5.2	3.5.2.9	3.5.2.9.1	3.5.2.9.2	3.5.2.9.4	3.5.2.9.5	3.5.2.9.6
3.5.2.9.7	3.5.2.9.8	3.5.2.9.8.1	3.5.2.9.9			

CLIN0032: LOW RATE INITIAL PRODUCTION LOTS 1 & 2 - AIRCRAFT

3.1	3.2.6.9.5	3.2.6.9.10	3.2.12	3.4.5

CLIN0033: FULL RATE PRODUCTION LOTS 3 & 4 - AIRCRAFT W/O ENGINES

3.1	3.2.6.9.5	3.2.6.9.10	3.2.12	3.4.5

CLIN0034: FULL RATE PRODUCTION LOTS 3 & 4 - AIRCRAFT WITH ENGINES

3.1	3.2.6.9.5	3.2.6.9.10	3.2.12	3.4.5

CLIN0035: FULL RATE PRODUCTION LOTS 5-11 - AIRCRAFT W/O ENGINES

3.1	3.2.6.9.5	3.2.6.9.10	3.2.12	3.4.5

CLIN0036: FULL RATE PRODUCTION LOTS 5 -11 - AIRCRAFT WITH ENGINES

3.1	3.2.6.9.5	3.2.6.9.10	3.2.12	3.4.5

CLIN0037: SPARE ENGINES LOTS 1-4

3.4.5	3.11.2

CLIN0038: SPARE ENGINES LOTS 5-11 (NTE)

3.4.5	3.11.2

CLIN0039: FULL RATE PRODUCTION - TECHNICAL MANUAL UPDATES

3.5.2.1	3.5.2.2	3.5.2.3	3.5.2.4	3.5.2.5	3.5.2.6
3.6.1	3.6.2.4	3.6.3	3.6.4		

CLIN0040: FULL RATE PRODUCTION - TECHNICAL DATA PACKAGES UPDATES

3.5.3.2.7.9	3.5.4.2.4	3.6.2.1	3.6.2.2	3.6.2.3	3.6.2.4
3.6.2.5	3.6.2.6	3.6.3	3.6.4	3.8.3	

CLIN0041: FULL RATE PRODUCTION - OTHER DATA UPDATES (NSP)

3.2.1.3.2	3.2.1.3.3	3.2.1.5	3.2.1.5.1	3.2.1.5.2	3.2.1.5.3
3.2.2.2	3.2.2.3	3.2.2.4	3.2.3.6	3.2.3.7	3.2.3.8
3.2.3.9	3.2.3.10	3.2.3.11	3.2.3.12	3.2.3.12.1	3.2.3.13
3.2.3.13.1	3.2.3.13.2	3.2.3.14.1	3.2.4.2	3.2.4.4	3.2.4.5
3.2.4.9	3.2.4.10	3.2.4.11	3.2.6.2	3.2.6.3	3.2.6.4
3.2.6.5	3.2.6.6	3.2.6.7	3.2.6.8	3.2.6.9.1	3.2.6.9.2
3.2.6.9.3	3.2.6.9.4	3.2.6.9.5	3.2.6.9.7	3.2.6.9.8	3.2.6.9.9
3.2.6.9.11	3.2.7.1.1	3.2.7.2	3.2.7.2.1	3.2.7.4	3.2.7.5.2
3.2.7.6	3.2.7.6.1	3.2.7.7	3.2.9.1.7	3.2.9.1.8	3.2.9.1.11
3.2.11.5	3.3.1.1	3.3.1.1.1	3.3.1.2.2	3.3.1.3	3.3.1.4
3.3.1.6	3.3.1.7	3.3.1.8	3.3.1.11	3.3.2.1	3.3.2.4
3.3.2.5	3.3.2.7	3.3.2.8	3.3.2.9	3.3.3	3.3.4
3.3.4.2	3.3.5.1	3.3.5.2	3.3.5.3	3.3.5.4	3.3.5.5
3.3.5.6	3.3.5.7	3.5.2	3.5.2.1	3.5.2.2	3.5.2.3
3.5.2.4	3.5.2.5	3.5.2.6	3.5.2.7.2	3.5.2.7.2.1	3.5.2.7.2.2
3.5.2.8	3.5.2.8.1	3.5.2.8.2	3.5.2.9	3.5.2.9.1	3.5.2.9.2

3.5.2.9.4	3.5.2.9.5	3.5.2.9.6	3.5.2.9.7	3.5.2.9.8	3.5.2.9.8.1
3.5.2.9.9	3.5.2.9.10	3.5.3.1.1	3.5.3.1.4	3.5.3.1.4.1	3.5.3.1.4.2
3.5.3.1.4.3	3.5.3.1.4.4	3.5.3.1.4.5	3.5.3.1.4.6	3.5.3.2.1	3.5.3.2.1.1
3.5.3.2.3	3.5.3.2.3.1	3.5.3.2.3.2	3.5.3.2.4	3.5.3.2.5	3.5.3.2.5.1
3.5.3.2.5.2	3.5.3.2.7	3.5.3.2.7.2	3.5.3.2.7.3	3.5.3.2.7.4	3.5.3.2.7.5
3.5.3.2.7.5.1	3.2.3.2.7.5.2	3.5.3.2.7.6	3.5.3.2.7.7	3.5.3.2.7.7.1	3.5.3.2.7.8
3.5.3.2.7.8.1	3.5.3.2.7.10	3.5.3.2.8	3.5.3.2.8.1	3.5.3.2.8.2	3.5.3.2.8.3
3.5.4.1	3.5.4.2.2	3.5.4.2.3	3.6.2.5	3.6.2.6	3.6.2.7
3.6.3	3.6.4	3.7.6	3.7.7.2.2	3.7.10	3.7.11
3.8.2	3.8.3	3.8.5	3.9	3.9.1.2	3.9.1.2.1
3.9.1.2.2	3.9.1.3	3.9.1.4	3.9.1.5	3.9.2.2	3.9.3.1
3.9.3.2	3.9.3.3	3.9.3.4	3.9.3.4.1	3.9.3.4.2	3.9.3.5
3.9.3.6	3.9.3.7	3.9.3.7.1	3.9.3.7.3	3.9.3.7.6	3.9.3.8
3.9.3.8.1	3.9.3.11	3.9.3.12	3.9.3.13	3.9.3.13.1	3.9.3.13.2
3.9.3.14	3.9.3.14.1	3.9.3.14.2			

CLIN0042: REQUIRED ASSETS AVAILABLE INCENTIVE

H005

CLIN0043: AIRCRAFT INITIAL SPARES

3.11.1

CLIN0044: SUPPORT EQUIPMENT

3.7.1	3.7.2	3.7.4	3.7.5	3.7.7.2	3.7.7.2.1
3.7.7.2.2	3.8.3				

CLIN0045: TRAINING DEVICE PRODUCTION - WEAPON SYSTEM TRAINER

3.4.5 3.5.2 3.5.2.1 3.5.2.7.2.2

CLIN0046: TRAINING DEVICE PRODUCTION - OPERATIONAL FLIGHT TRAINER

3.4.5 3.5.2 3.5.2.2 3.5.2.7.2.2

CLIN0047: TRAINING DEVICE PRODUCTION - UNIT TRAINING DEVICE

3.4.5 3.5.2 3.5.2.3 3.5.2.7.2.2

CLIN0048: TRAINING DEVICE PRODUCTION - AIRCREW GROUND EGRESS TRAINER

3.4.5 3.5.2 3.5.2.4

CLIN0049: TRAINING DEVICE PRODUCTION - EJECTION SEAT TRAINER

3.4.5 3.5.2 3.5.2.5

CLIN0050: TRAINING DEVICE PRODUCTION - PART TASK TRAINER

3.4.5 3.5.2 3.5.2.6

CLIN0051: TRAINING DEVICE PRODUCTION - WEAPON SYSTEM TRAINER

3.4.5 3.5.2 3.5.2.1 3.5.2.7.2.2

CLIN0052: TRAINING DEVICE PRODUCTION – OPERATIONAL FLIGHT TRAINER

3.4.5 3.5.2 3.5.2.2 3.5.2.7.2.2

CLIN0053: TRAINING DEVICE PRODUCTION - UNIT TRAINING DEVICE

3.4.5 3.5.2 3.5.2.3 3.5.2.7.2.2

CLIN0054: TRAINING DEVICE PRODUCTION - AIRCREW GROUND EGRESS TRAINER

3.4.5 3.5.2 3.5.2.4

CLIN0055: TRAINING DEVICE PRODUCTION - EJECTION SEAT TRAINER

3.4.5 3.5.2 3.5.2.5

CLIN0056: TRAINING DEVICE PRODUCTION - PART TASK TRAINER

3.4.5 3.5.2 3.5.2.6

CLIN0057: TRAINING DEVICE PRODUCTION - GBTS MISSION DEBRIEF STATIONS (NTE)

3.5.2 3.5.2.1 3.5.2.2

CLIN0058: PRODUCTION - AIRCRAFT MISSION DEBRIEF STATIONS

3.2.15.1 3.4.5

CLIN0059: PRODUCTION - ADDITIONAL DTD ADAPTORS

3.2.15.1 3.4.5

CLIN0060: PRODUCTION - AIRCRAFT MISSION DEBRIEF STATIONS (NTE)

3.2.15.1 3.4.5

CLIN0061: PRODUCTION – ADDITIONAL DTD ADAPTORS (NTE)

3.2.15.1 3.4.5

CLIN0062: CONTRACTOR LOGISTICS SUPPORT - GBTS SOFTWARE MAINTENANCE/MODIFICATION

3.5.2.8	3.5.2.8.1	3.5.3.2.7	3.5.3.2.7.1	3.5.3.2.7.2	3.5.3.2.7.3
3.5.3.2.7.5	3.5.3.2.7.5.1	3.5.3.2.7.5.2	3.5.3.2.7.7	3.5.3.2.7.8	3.5.3.2.7.8.1
3.5.3.2.7.11	3.5.3.2.8	3.5.3.2.8.1	3.5.4.2		

CLIN0063: CONTRACTOR LOGISTICS SUPPORT - GBTS INTERMEDIATE PARTS COST

3.5.3.2.7	3.5.3.2.7.2	3.5.3.2.7.8.1	3.5.3.2.8	3.5.3.2.8.1	3.5.3.2.8.2
3.5.3.2.8.3	3.5.3.3				

CLIN0064: CONTRACTOR LOGISTICS SUPPORT - GBTS SIM OPERATIONS/MAINTENANCE

3.5.3.2.3.2	3.5.3.2.5	3.5.3.2.5.1	3.5.3.2.5.2	3.5.3.2.6	3.5.3.2.7
3.5.3.2.7.1	3.5.3.2.7.2	3.5.3.2.7.8.1	3.5.3.2.8.1	3.5.3.2.8.3	3.5.3.3
3.5.4.2.4					

CLIN0065: CONTRACTOR LOGISTICS SUPPORT - GBTS PROGRAM MANAGEMENT

3.5.3.2.1	3.5.3.2.2	3.5.3.2.2.1	3.5.3.2.3	3.5.3.2.3.1	3.5.3.2.3.2
3.5.3.2.4	3.5.3.2.7	3.5.3.2.7.1	3.5.3.2.7.2	3.5.3.2.7.3	3.5.3.2.7.4
3.5.3.2.7.5	3.5.3.2.7.5.1	3.5.3.2.7.5.2	3.5.3.2.7.6	3.5.3.2.7.6.1	3.5.3.2.7.7
3.5.3.2.7.7.1	3.5.3.2.7.8	3.5.3.2.7.8.1	3.5.3.2.7.9	3.5.3.2.7.10	3.5.3.2.7.11
3.5.3.2.8	3.5.3.2.8.1	3.5.3.2.8.2	3.5.3.2.8.3	3.5.3.3	3.5.4.1

3.5.4.2	3.5.4.2.1	3.5.4.2.2	3.5.4.2.3	3.5.4.2.4	

CLIN0066: CONTRACTOR LOGISTICS SUPPORT - GBTS SOFTWARE MAINTENANCE/MODIFICATION

3.5.2.8	3.5.2.8.1	3.5.3.2.7	3.5.3.2.7.1	3.5.3.2.7.2	3.5.3.2.7.3
3.5.3.2.7.5	3.5.3.2.7.5.1	3.5.3.2.7.5.2	3.5.3.2.7.7	3.5.3.2.7.8	3.5.3.2.7.8.1
3.5.3.2.7.11	3.5.3.2.8	3.5.3.2.8.1	3.5.4.2		

CLIN0067: CONTRACTOR LOGISTICS SUPPORT - GBTS INTERMEDIATE PARTS COST

3.5.3.2.7	3.5.3.2.7.2	3.5.3.2.7.8.1	3.5.3.2.8	3.5.3.2.8.1	3.5.3.2.8.2
3.5.3.2.8.3	3.5.3.3				

CLIN0068: CONTRACTOR LOGISTICS SUPPORT - GBTS SIM OPERATIONS/MAINTENANCE

3.5.3.2.3.2	3.5.3.2.5	3.5.3.2.5.1	3.5.3.2.5.2	3.5.3.2.6	3.5.3.2.7
3.5.3.2.7.1	3.5.3.2.7.2	3.5.3.2.7.8.1	3.5.3.2.8.1	3.5.3.2.8.3	3.5.3.3
3.5.4.2.4					

CLIN0069: CONTRACTOR LOGISTICS SUPPORT - GBTS PROGRAM MANAGEMENT

3.5.3.2.1	3.5.3.2.2	3.5.3.2.2.1	3.5.3.2.3	3.5.3.2.3.1	3.5.3.2.3.2
3.5.3.2.4	3.5.3.2.7	3.5.3.2.7.1	3.5.3.2.7.2	3.5.3.2.7.3	3.5.3.2.7.4
3.5.3.2.7.5	3.5.3.2.7.5.1	3.5.3.2.7.5.2	3.5.3.2.7.6	3.5.3.2.7.6.1	3.5.3.2.7.7
3.5.3.2.7.7.1	3.5.3.2.7.8	3.5.3.2.7.8.1	3.5.3.2.7.9	3.5.3.2.7.10	3.5.3.2.7.11
3.5.3.2.8	3.5.3.2.8.1	3.5.3.2.8.2	3.5.3.2.8.3	3.5.3.3	3.5.4.1
3.5.4.2	3.5.4.2.1	3.5.4.2.2	3.5.4.2.3	3.5.4.2.4	

CLIN0070: DEPOT-LEVEL INTERIM CONTRACTOR SUPPORT

3.7.7.2.2	3.7.8	3.7.9	3.7.10	3.9.3.7	3.9.3.7.1
3.9.3.7.1.1	3.9.3.7.1.2	3.9.3.7.1.3	3.9.3.7.2	3.9.3.7.3	3.9.3.7.4
3.9.3.7.5	3.9.3.7.6	3.9.3.7.6.1	3.9.3.7.6.2		

CLIN0071: CONTRACT TRANSITION

3.5.4.1	3.5.4.2	3.5.4.2.1	3.5.4.2.2	3.5.4.2.3	3.5.4.2.4

CLIN0072: GBTS SPARES

3.5.3.2.8.2	3.5.4.2

CLIN0073: STUDIES AND ANALYSIS

3.3.1.12

CLIN0074: OVER AND ABOVE WORK

3.3.1.13