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**Technical and Management Advisory Services (TMAS) 2
For the Test Enterprise**

**Performance Work Statement (PWS)
For**

412th Test Wing

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3.0 Task Requirements.

3.0.1 Project and Business Management Support of RDT&E Projects

The Contractor shall provide A&AS in program/project and business management of RDT&E projects for the 412 Test Wing Groups and Divisions, to include Combined Test Forces (CTF), for various aircraft platforms, systems and associated facilities, in accordance with governing Operating Instructions, policies, and procedures. These services provide advice and assistance supporting efficient and effective management and operation of organizations, developing and providing necessary documentation, training activities, and the development and implementation of plans, programs and procedures. The Contractor shall demarcate support by organization within the 412 TW and examine individual test program requirements to determine appropriate technical skills. Support does not include resources performing IT application development, modernization or sustainment.

3.0.2 Engineering Support of RDT&E Projects

The Contractor shall support all test project phases, ranging from planning, provisioning, flight and ground test execution, analysis, and reporting. The Contractor shall provide advice and assistance in the development and/or completion of technical handbooks, studies, reports, project plans, test planning documents, analyses, evaluations, recommendations, test procedures, program documentation, trip reports, briefings, minutes, schedules, and metrics, etc., as required. The effort includes support in executing the test project Statement of Capability development process, developing MOAs, Rough Order of Magnitude (ROM) estimates, Test Information Sheets, Test Plans, and reports. The effort includes A&AS in TPWG meetings, working with AF Operational Test and Evaluation Center (AFOTEC), and operational testers/users to prepare for OT&E, and ensure the early and appropriate involvement of the OT&E community in DT&E.

3.0.3 Flight Test Operations Support for RDT&E projects

3.0.3.1 The Contractor shall provide support onboard military test aircraft during flight test missions. The Contractor employees shall fly as non-crew members to conduct test objectives or as Mission Essential Personnel (MEP) as requested by the Government with prior approval in writing by the test program's designated Government Flight Representative (GFR) and IAW AF Instruction 10-220 and AFMC Supplement.

3.0.3.2 The Government will provide physiological training (altitude chamber), any mandatory aircrew recurring training and may provide category 9C physical examinations (AF FM 1042, Medical Recommendation for Flying), and annual Federal Aviation Administration (FAA) class III flight physicals as necessary to support flight tests. If on-base facilities are not available, the Government will cover the cost of an individual's annual FAA flight physical as an Other Direct Charge. The Government will provide personal equipment for Contractor personnel required to participate in flight-testing. Personal equipment will remain property of the Government and must be surrendered upon demand.

3.1 Test Management Division.

The Contractor shall provide advice and assistance in test management, program/project management, program/project management processes, business management support, and JSF facility support for RDT&E program test requirements for TMG, EWG, CEG, the CTFs and other

organizations within the 412 TW. This support extends across a broad technical and programmatic range and extends across all 412 TW portfolios. This support includes support to the SPO Test Manager for acquisition programs that require T&E efforts as well as assisting with the planning, and implementation, supporting the overall test program for the SPO. This includes Theory of Constraints (TOC) implementation and sustainment support for TOC project management system and development and maintenance of other automated project management tools. Also includes assistance with business management in support of ground test, flight test and other associated test and support activities. These services provide advice and assistance, for the efficient and effective management and operation of organizations, training activities or systems to develop and implement plans, programs and procedures and provide necessary documentation.

The Contractor shall provide A&AS in test management, program/project management process and business management to the following 412 TW CTFs:

- Global Power Bomber CTF in the management of RDT&E projects on the B-1, B-2, and B-52 Bombers.
- Global Power Fighter CTF in the management of RDT&E and Foreign Military Sales (FMS) projects on the F-15 and F-16 fighter aircraft.
- Global Reach CTF in the management of RDT&E and FMS projects for various cargo, transport, trainer, refueling, and special purpose aircraft.
- Global Vigilance CTF in the management of RDT&E and FMS projects for Global Hawk and various special purpose Unmanned Aircraft Systems and Remotely Piloted Aircraft.
- JSF ITF in the management of the RDT&E and FMS projects of the JSF (F-35) aircraft.
- F-22A CTF in the management of the RDT&E projects on the F-22A aircraft.
- Hypersonic CTF in the management of the RDT&E projects for hypersonic vehicles.
- Special Projects Division in the management of RDT&E projects.

3.1.1 Project Management Support

The Contractor shall provide advice and assistance applying standard project management processes identified within the Project Management Institute (PMI) framework of the five process groups and ten knowledge areas to manage cost, schedule, and performance of RDT&E test projects. This includes project management system implementation, training development, workforce training, and support for project management tools in support of ground test, flight test and other associated RDT&E test and support activities. The Contractor shall assist in all five phases of flight test to include development of project plans, project monitoring and control, project analysis, project status reporting, and close out of test projects.

3.1.1.1 The Contractor shall provide assistance to the TMG Home Office in supporting the CTFs in the development of project objectives, deliverables, work scope, project schedules, and risk assessments. The contractor shall support the application of Critical Chain Program Management (CCPM) methodology to assist CTF leadership, TMG, and PMs in identifying and resolving resource workload-capacity issues affecting multi-project portfolios, with the goal of maintaining scheduled workload within organizational capacity through various tradeoffs of project scheduling and resource allocation. They shall assist in preparing briefings and reports to convey workload-capacity issues and recommendations to the affected stakeholders (Deputy Directors, PMs, TMG leadership, customers, TW staff, etc).

3.1.1.2 The Contractor shall support organizational capacity planning and the development and

maintenance of organizational capacity of key assets and resources. The Contractor shall also support identification of resource requirements and cost estimates. The Contractor shall also support project schedule recovery analysis, project diagnostics and issue resolution, task updates, re-planning, and analysis of project and portfolio risks.

3.1.1.3 The Contractor shall provide advice, analysis and assistance in the definition, design, documentation, implementation and improvement of the project management system to include cost and schedule processes, tools, methods, software, databases, metrics and reports with specific emphasis in Critical Chain Project Management (CCPM) to improve project schedule and cost performance.

3.1.1.4 The Contractor shall assist in the development and improvement of training materials and delivery of project management training courses covering topics on the use of processes, methods, and tools to manage cost, schedule and performance. The Contractor shall assist with the scheduling and tracking of class attendees, instructors, training rooms and training metrics.

3.1.1.5 The Contractor shall provide advice and assistance as required to AFTC organizations in support of enterprise wide project management methods, tools, and training across each Test Wing (412 TW, 96 TW, and AEDC).

3.1.1.6 The Contractor shall support allocation of system performance requirements into ground and flight test program requirements, preparation of Memorandums of Agreement (MOAs), Program Introduction Documents (PIDs), Project Management Directives (PMDs) and requirements and operations documents, participation in acquisition strategy planning and preparation of Draft TEMPs and System Test Plans. Other efforts include advice and assistance in defining contract data requirements and other documentation required by the SPO. The Contractor shall support the organization, planning, and conduct of Test Planning Working Groups (TPWGs) and SPO Resource Planning Meetings.

3.1.2 Business Management Support.

The Contractor shall provide advice and assistance to TMG and the CTFs and other test offices developing and implementing the 412 TW business processes and recommending improvement options. The Contractor shall provide advice and assistance in the development of 412 TW business strategies and planning in preparation for implementation. This includes the following: collection, administering and tracking of specific business plan goals; development of cost estimates, Statements of Capability (SOC) responses to PIDs for customers, and financial reporting mechanisms; the coordination of process improvement activities; collection of data, analysis, reporting, and distribution of monthly metrics packages to the CTF and 412 TW leadership and other customers; and provide guidance in the design and development of Management Information Systems.

3.1.2.1 The Contractor shall provide advice and assistance in overall long range planning, data management, and financial analytical support to 412 TW CTFs. The Contractor shall provide advice and assistance to the Business Leader in the following: conducting analytical studies, workload and manpower requirements forecasting, flying hour estimates in support of the Flying Hour Program, financial reports, ROM cost estimates, trends and projections to include budget estimates for ground test, flight test and other associated test activities and analysis of actuals to estimates, funding status and cost performance reports, and defining cost implications and

tradeoffs of technical solutions. The Contractor shall provide advice and assistance to Government personnel to monitor and report status and issues with resources (including facilities, GFE, munitions, and support aircraft) for test and related program efforts.

3.1.2.2 The Contractor shall provide advice and assistance supporting organizational improvement goals as well as planning, defining, and developing business documentation (e.g., OIs, handbooks, etc.). The business documentation may include examples, flowcharts, procedures, standards, templates, etc. The business documentation focus is on methods to achieve desired results through improved project performance.

3.1.2.3 The Contractor will provide advice and assistance support for the development, dissemination, resource prioritization, and utilization of strategic plans in order to meet test requirements. The Contractor shall assess and track Government resources and/or assets needed to support test program/project objectives. The Contractor shall review/evaluate resource system configuration, status and condition reviews/evaluation. The Contractor shall coordinate support/resources to meet test activity requirements. The Contractor shall support an assessment of planned versus actual aircraft activities.

3.1.3 Combined Test Force (CTF) RDT&E Support.

The Contractor shall provide advice and assistance in the planning and management of numerous CTF RDT&E projects. These projects will be in various test phases to include initiating, planning provisioning, test execution, analysis, and reporting.

3.1.3.1 The Contractor shall provide expert assistance in RDT&E projects to include joint/combined test environments as well as other special projects.

3.1.3.2 The Contractor shall assist with providing a detailed understanding of local test organization through experience in lab, ground and flight test processes and procedures, safety and environmental planning and execution for ground and flight test operations, and project and business management.

3.1.3.3 The Contractor shall assist with providing unique and highly modified test platforms with access to airspace, ranges and other test facilities in order to effectively conduct lab, ground and flight test operations with emphasis on both technical and programmatic protocols to include work with international clients.

3.1.3.4 The Contractor shall provide support with program operations and defining resource planning, communicating results to participating organizations/personnel IAW objectives, policies and procedures.

3.1.3.5 The Contractor shall support upgrades of weapons test activities with development and implementation of project schedule, performance and risk analysis/assessment and management plans.

3.1.3.6 The Contractor shall communicate with outside organizations to influence test program/project objectives, priorities, capabilities and limitations, and obtain /share status on courses of action.

3.1.3.7 The Contractor shall rapidly communicate changes in test resource status, serviceability and/or availability with associated rationale.

3.1.3.8 The Contractor shall provide Project Management support activities including preparing, developing, updating and providing assistance with business office systems; reports/packages; approximately five (5) mandatory reports monthly and assisting with CTF visits/briefings, as required.

3.1.3.9 The Contractor shall provide assistance in the planning, organizing, and coordinating air operations with emphasis in providing analysis for effective and efficient utilization of limited assets.

3.1.3.10 The Contractor shall assist in monitoring and disseminating policies, publications and procedures that affect the project and associated operations.

3.1.3.11 The Contractor shall assist decision makers in gathering information, identifying and analyzing issues, and developing recommendations to resolve project and schedule issues that affect the effectiveness and efficiency of unit operations.

3.1.3.12 The Contractor shall coordinate with internal and external customers to ensure services provided are adequate, requests for products and services are valid and administrative policies are properly implemented.

3.1.3.13 The Contractor shall assist in constructing viable and effective operations schedules for both test and training flight operations.

3.1.3.14 The Contractor shall provide support to assist in identifying and resolving foreign national issues related to unclassified and classified activities.

3.1.3.15 The Contractor shall provide knowledge of the strategic, operational, and tactical application of airpower plans and procedures to influence operational test plans for the USAF, US Navy, US Marine Corp and foreign partners.

3.1.3.16 The Contractor shall assist with analyzing management concerns and identify critical problem areas for further study and evaluation; determine method(s) of solution and guide the resolution in coordination with other program participants, as required.

3.1.4 CTF-Specific Requirements:

3.1.4.1 Global Power Bomber (GPB) CTF in the management of RDT&E projects on the B1, B-2, and B-52 Bombers.

3.1.4.2 Global Power Fighter (GPF) CTF in the management of RDT&E and Foreign Military Sales (FMS) projects on the F-16 aircraft, and the RDT&E of the Trainer-X aircraft.

3.1.4.3 Global Reach (GR) CTF in the management of RDT&E and FMS projects for various cargo, transport, trainer, refueling and special purpose aircraft. These include the C-17, C-5, KC-46, KC-135, KC-30, and others.

3.1.4.4 Global Vigilance (GV) CTF in the management of RDT&E and FMS projects for Global Hawk and various special purpose Unmanned Aircraft Systems (UAS) and Remotely Piloted Aircraft (RPA). Provide expert support to multiple functional areas within Global Vigilance test programs and to support flight test and flight operations within the National Airspace System (NAS). Shall assist with routinely coordinate UAS flight activities with Federal Aviation Administration (FAA). Provide assistance in providing the Edwards/Palmdale Certificate of Authorization/Waiver which authorizes the CTF to conduct Global Hawk flight operations in the NAS. Provide assistance working with the Global Hawk System Program Office, HQ USAF, Air Combat Command, Warner Robbins ALC and the FAA to develop procedures for Global Hawk flight operations at Warner Robbins AFB to facilitate depot maintenance. Assist with coordinating flight activities and assist in developing procedures for the NATO Global Hawk with the System Program Office, HQ USAF, FAA, US Department of State, NATO and the Italian Defense Ministry. Assist with coordinating NATO Global Hawk delivery flight operations with the Canadian Foreign Ministry and Canadian Defense Ministry for overflight of Canada. Assist with coordinating flight activities for test and delivery of Global Hawk systems for foreign military sales to multiple nations.

3.1.4.4.1 The Contractor shall support flight test and flight operations within the National Airspace System (NAS). Shall assist with routinely coordinate UAS flight activities with Federal Aviation Administration (FAA). Provide assistance in providing the Edwards/Palmdale Certificate of Authorization/Waiver which authorizes the CTF to conduct Global Hawk flight operations in the NAS.

3.1.4.4.2 The Contractor shall provide assistance working with the Global Hawk System Program Office, HQ USAF, Air Combat Command, ALCs and the FAA to develop procedures for UAS flight operations. Assist with coordinating flight activities and assist in developing procedures for the FMS UAS programs with the System Program Office, HQ USAF, FAA, US Department of State, and foreign entities. Assist with coordinating NATO Global Hawk delivery flight operations with the Canadian Foreign Ministry and Canadian Defense Ministry for overflight of Canada. Assist with coordinating flight activities for test and delivery of UAS systems for foreign military sales to multiple nations.

3.1.4.5 Joint Strike Fighter (JSF) Integrated Test Force (ITF) in the management of the RDT&E and FMS projects of the F-35 aircraft.

3.1.4.5.1 The Contractor shall assist JSF Program Office/CTF in establishing, designing and testing during the Continuous Capability Demonstration and Delivery (C2D2) phase of the Autonomic Logistics Information System (ALIS) DT&E and OT&E environments. In addition, design and execute test strategies, and validate/verify approaches for ALIS. The Contractor shall also participate in the JSF M&S activities as appropriate to support C2D2 activities.

3.1.4.5.2 The Contractor shall provide expert assistance with programmatic and technical understanding to actively engage the Original Equipment Manufacturer (OEM) [i.e. Lockheed Martin (LM)] and the JSF Program Office (JPO) with pertinent and direct inquiries for the successful development, deployment, and employment of the Autonomic Logistics Information System (ALIS). Participate in on-and off-site programmatic and technical interchange meetings with insightful and thought provoking action items that will culminate in a highly effective and

robust ALIS for the services. Provide assistance with analysis, risk mitigations and alternatives in the development, testing, implementation and sustaining of ALIS with its myriad of interfaces with other systems/subsystems and disciplines (i.e. Security, Crypto, Mission Planning, etc.) to ensure that the government receives a system that is functional and fully supportable for the field.

3.1.4.5.3 The Contractor shall provide expert assistance with system and software test planning, implementation, utilization and reporting necessary to effectively establish and utilize an Operationally Representative Environment (ORE) for ALIS. Test and evaluate OEM ALIS releases as a risk mitigation/reduction effort and to assist in eliminating issues undetected in the Original Equipment Manufacture's (OEM) lab testing prior to deployment to Developmental Test (DT) and subsequent fleet release as well as the ORE use in training.

3.1.4.5.4 The Contractor shall serve as liaison between Operational Test Squadron (OTS), Operational Test Agency (OTA), JSF JPO, Office of the Secretary of Defense (OSD), and 412 TW in coordination and de-conflicting resources requirements and integrating the requirements within organizations' schedule management tools (e.g., JSF, ALIS, Center Operations On-Line (COOL), etc.). Provide advice to F-35 test directors on the feasibility, suitability, effectiveness and mission capability of the F-35. Advise the Government to ensure soundness/defensibility of proposed test methodologies and recommend changes where necessary. Provide technical input to the final reports up to and including the OSD.

3.1.4.5.5 The Contractor shall provide expert assistance with planning, coordinating, executing, and exporting on operational test activities during the development, testing, production and fielding of the F-35 Air System. Work with and synthesize inputs from JSF test engineers, system designers, business management and program managers to provide management with technical concerns, compliance issues, risks and associated program/project issues requiring management involvement with specific emphasis on system to system security.

3.1.4.5.6 The Contractor shall serve as liaison between the Joint Strike Fighter Operational Test Team (JOTT) test planning cell, OTS, and various test ranges (e.g., Nevada Test and Training Range, China Lake, etc.). Support the management of the Aircrew Training and Standardization Evaluation program requirements.

3.1.4.5.7 The Contractor shall provide expert assistance with specific knowledge of the strategic, operational, and tactical application of airpower plans and procedures to influence operational test, integration and sustainment of Logistics Composite Module Analysis Toolkit (LCOM-ATK) use and plans for the USAF, USN, USMC and foreign partners, as appropriate. Provide advice and assistance to F-35 test directors on the feasibility, suitability, effectiveness and mission capability of the LCOM-ATK with specific emphasis on ensuring testing is in realistic operational environment to increase stress on subsystem or system components to determine full mission capability. Assist and advise in the data collection, analysis, validation and development of the F-35 LCOM-ATK.

3.1.4.5.8 The Contractor shall provide advice and assistance supporting the JOTT infrastructure consisting of seven (7) major organizations and their representative facilities (e.g., ~9 office and maintenance facilities representing 99,000 square feet). The Contractor shall provide advice and assistance planning and designing activities for space, resource and equipment utilization, storage, disposal and cleanup; estimates on project budgetary requirements; coordination with Government

agencies, commercial contractors and suppliers to achieve maximum realization of cost and schedule benefits associated with various projects and to ensure projects remain environmentally compliant; researching and identifying appropriate fire prevention, safety, health and environmental practices to support JSF testing and its associated characteristics and circumstances; analyze management concerns and identify critical problem areas for further study and evaluation; determine method(s) of solution, and guide the resolution in coordination with other program participants; and work with and synthesize inputs from JSF test engineers, system designers, business management and PMs to provide management with technical concerns, compliance issues, risks and associated program/project issues requiring management involvement.

3.1.4.5.9 The Contractor shall provide advice and assistance for logistics support requirements in various 412 TW projects. The Contractor shall ensure logistics support requirements are considered in projects by separately or collectively working issues involving the logistics elements (e.g. supply support, manpower and personnel, support equipment, technical data, packaging/handling/ storage/ transportation, computer support, facilities, training support, maintenance planning, etc.).

3.1.4.5.10 The Contractor shall support the Government Team by managing facility construction projects associated with the bed down of new weapons systems. The Contractor shall assist in determining facilities requirements, planning detailed schedules, and shall provide advice and assistance services in support of identifying utility and configuration requirements to meet the 412 TW's current and future ground and flight test mission needs.

3.1.4.5.11 The Contractor shall provide advice and assistance services in support of technical documentation such as design packages, specifications, drawings, studies, cost estimates, vendor submittals, and operating instructions. The Contractor shall also advise and assist by providing expertise in areas of development of strategic utility and facility plans, and in documenting recommendations, conclusions, and lessons learned to improve the 412 TW's facilities capability.

3.1.4.5.12 The Contractor shall advise and assist the Government in programs/projects funded by Military Construction; Test and Evaluation; Improvement and Modernization; Major Range and Test Facility Base; RDT&E Sustainment, Restoration, and Modernization; and Operations & Maintenance sustainment. The Contractor shall advise and assist the Government in providing Life Cycle Management methodology to all capital improvement projects.

3.1.4.5.13 The Contractor shall provide advice and assistance in planning and designing activities for space, resource and equipment utilization, storage, disposal and cleanup; estimates on project budgetary requirements; coordination with Government agencies, commercial contractors and suppliers to achieve maximum realization of cost and schedule benefits associated with various projects and to ensure projects remain environmentally compliant; researching and identifying appropriate fire prevention, safety, health and environmental practices to support 412 TW testing and its associated characteristics and circumstances; analyze management concerns and identify critical problem areas for further study and evaluation; determine method(s) of solution, and guide the resolution in coordination with other project participants; and work with and synthesize inputs from various organizations, system designers, business management and PMs to provide management with technical concerns, compliance issues, risks and associated program/project issues requiring management involvement.

3.1.4.6 F-22A CTF in the management of the RDT&E projects on the F-22A aircraft. Air Vehicle Management Support requirements for the F-22 CTF are as follows:

- Assist in the development and dissemination of strategic plans related to resource prioritization/utilization in order to meet test requirements.
- Assist in tracking and assessing Government resources and/or assets required to support test program/project objectives.
- Assist in resource system configuration, status and condition reviews/evaluation, and coordinating necessary support/resources required to meet test activity requirements.

3.1.4.7 Emerging Technologies CTF in the management of the RDT&E projects supporting advanced autonomous systems, artificial intelligence, machine learning, and directed energy.

3.1.4.8 Special Projects Division in the management of all 412 TW classified RDT&E projects. Provide expert assistance with research, developmental, test and evaluation (RDT&E) within a special project arena. Assist with providing detailed understanding of local test organization through experience in lab, ground and flight test processes and procedures, safety and environmental planning and execution for ground and flight test operations, and project and business management. Provide assistance with unique, one of a kind test platforms with access to airspace, ranges and other test facilities in order to effectively conduct lab, ground and flight test operations.

3.4.4.9 Hypersonic CTF:

Provide expertise and technically astute understanding of how to plan for the DARPA Hypersonic Air-breathing Weapon Concept (HAWC) test vehicle performance requirements that dictate extended range requirements at Pt Mugu or similar over-water or over-land ranges. Expertise is required to provide assistance with complicated project planning to include working with launch platform (e.g., B-52) CTF to coordinate allocation of aircraft, test planning, safety planning, safety package, ground tests, captive carry, coordinate range requests, range requirements identification, range resource coordination and test events, mission rehearsal and live launch test events.

3.1.5 Theory of Constraints (TOC) Support.

The Contractor shall provide technical advice and assistance to the CTFs, CTF Directors of Projects, PMs and Test Management Division home office. The Contractor shall provide advice and assistance with TOC PM deployment/continuous process improvements of CTF project management system implementations to improve project cost and schedule performance; analyzing, loading and synchronizing critical chain schedules in project management software, buffer recovery analysis, task updates, and analyzing project and portfolio schedule risks and resource loads; providing 412 TW approved project management training courses to assigned personnel; analysis of project and portfolio cost and schedule performance; and TOC PM deployment/continuous process improvements.

3.1.5.1 The Contractor shall provide advice and assistance identifying schedule conflicts and resource shortfalls; preparing briefings and reports to convey the conflict to the affected PMs; developing, maintaining, and presenting of the recurring workload assessment and capacity analysis reports and briefing; developing and presenting "what-if" schedule exercises to satisfy customer inquiries and optimize resource utilization; risk analysis of all 412 TW portfolio projects.

3.1.5.2 The Contractor shall provide advice and assistance across all portfolios, as well as provide support to 412 TENG/ENI, specifically Special Instrumentation (SI), in numerous RDT&E projects across the CTFs and various aircraft configurations

3.1.6 General Engineer/Project Management Support (Civil Engineering)

Provides engineering support to the government on major engineering projects. Provides assistance with planning, developing requirements, cost estimates, and performing engineering management work for substantial multi-phase projects that typically cross engineering disciplines, and requires professional knowledge of engineering disciplines related to building and airfield operations, utility systems, various distribution and support systems, and other areas of concern to the installation. Projects are usually large and/or highly complex and include work of an unconventional/advanced nature requiring more in-depth research.

- Provides assistance with anticipating and resolving any difficult and unforeseen engineering problems and conflicts on various aspects of programs or projects to ensure program/mission accomplishment.
- Participates on an engineering team and assists in the planning, surveys, scope development, cost estimating, and phased scheduling of the project.
- Coordinates with internal Directorate functions including other engineers and architects, System Engineers, Resources, etc., and outside agencies such as the Army Corps of Engineers, Environmental Management Directorate, contractors, etc., as appropriate for the project or program. Provides assistance and guidance to team members, monitors their progress throughout the project, and provides input to higher levels on performance.
- Ensures federal, state, and local codes concerning health, safety, and the environment are strictly adhered to in the programming, design, and construction of assigned projects/programs
- Coordinates the draft preparation of and reviews architect and engineer (A&E) statements of work (SOW). Assists with providing criteria and standards for specialized, difficult, or unusual requirements.
- Coordinates projects with engineers in a variety of disciplines and/or with architects.
- Assists the government with the review of preliminary and final engineering plans, specifications, and cost estimates of Architect & Engineering (A&E) firms or other design agencies to ensure design excellence and compliance with specifications.
- Provides assistance to the government technical representative and contracting officer in negotiation and administration of design of contracts.
- Provides assistance to the government technical expert and contracting officer with dispute claims and resolution for contract work.
- Provides assistance in staying current with emerging technologies to ensure programmed development will not prematurely become obsolete.
- The contractor shall stay current with computers/computer software such as information management programs, computer aided design and drafting (CADD) programs, and project tracking programs to solve engineering problems and facilitate work.

3.1.7 Engineering Technician (Civil Engineering)

The contractor shall use and apply technical engineering knowledge in developing draft project documents for the accomplishment of operations and maintenance (O&M), military family housing (MFH), non-appropriated fund (NAF), Special Interest programs, host-tenant, and real property maintenance by contract (RPMC) projects. Projects are often associated with a wide variety of architectural and engineering facets which interface with other technical specializations and are typically significant and complex. Projects cover the complete range of engineering including architectural, structural, civil, mechanical, electrical, and environmental work. Facilities involved are used to carry out more than one operation and/or used by a few different activities.

- Evaluates and recommends for government approval, clients' requests for new construction, renovation, and improvements of real property facilities including utility systems.
- Supports government determinations for contracting methods.
- Coordinates projects with engineers in a variety of disciplines and/or with architects.
- Supports and provides assistance to the engineer/architecture professionals with ensuring all design, construction, or operations considerations have been addressed.
- Provides assistance with conducting site/facility surveys to gather preliminary information. Surveys support the completion of a Base Civil Engineer Work Request (DD Form 1391) and the creation of a Military Construction Project Data (AF Form 332) that validate the service request and are the basis for project advancement or referral for alternate course of action. These documents include detailed narrative descriptions and justifications, preparing or reviewing schematic and site drawings for new construction, modification, alteration, or renovations of facilities, cost calculations, and other technical data that often require creative solutions due to legal, environmental, structural, etc. conditions.
- Assists with applying sound methods to solve complex, intricate, and/or unprecedented issues. The contractor shall work with organizational managers, budget personnel, and engineering/architectural authorities to develop and gain approval for proposed maintenance or repair project.
- Provides assistance with engineers to determine the validity, feasibility, achievability, and efficiency of a proposed project based on constraints in scheduling, cost, manpower, etc.
- Tracks requests and inputs project level data from approved packages into the automated program management system.
- Updates system to reflect project progress.
- Assists with extracting data, preparing and presenting project review status to management and clients.
- Assists with performing a variety of inspections/surveillance on assigned projects. Inspections involve construction or improvement projects for structures and facilities, for preventive maintenance, surveys, or other purposes.
- Applies sufficient knowledge of the systems and of the work being inspected to discuss discrepancies or problems with those performing the work.

- Assists with drafting Statements of Work (SOW) for a variety of architectural and engineering contracts. Researches data to develop and compose task requirements and assists with preparing all supporting charts, tables, drawings, and illustrations incorporated into contracts.
- Recommends appropriate methods of contractor surveillance and identifies overall levels of quality assurance evaluation required, and subsequently develops appropriate surveillance/inspection plan/schedule.
- Participates in pre-award surveys and assists the government with evaluation of contractor's proposed quality control plan.
- Advises the government in the evaluation and validation of requested additions and changes to existing contracts.
- Assists with preparing addenda, related technical exhibits, and draft purchase requests to modify contracts.
- Ensures computerized inspection program and technical exhibits are updated or changed as schedule and modifications dictate. Reviews upcoming projects on the installation for impact to existing contracts/proposals or identification of requirements for new services.
- Ensures accurate, effective and timely close-out actions of all assigned projects (i.e. 1354s, AF 1477 (Blue Book Construction Inspection Reports, etc.))

3.2 412 TW Engineering Group (TENG).

The Contractor shall provide expert engineering advice and assistance to the 412 TENG for flight and ground test planning, provisioning, executing, analyzing and reporting in the flight science, avionics integration, range, and instrumentation disciplines; and for related test support activities.

3.2.1. The Contractor shall provide advice and assistance in conducting analyses and studies on future technical and customer requirements and propose opportunities for process improvements.

- Maintain technical insight into design, planning, and other activities performed by development agencies and review activities and deliverables.
- Evaluate test methodologies and study topics related to the development, operation, and support of ground test, flight test, and AFTC infrastructure systems or equipment.
- Provide advisory inputs to Government decision-makers (i.e. Strategic planning; roadmap; etc.). Ensure performance, cost, schedule, and risk indicators are monitored, documented, and reported.
- Provide assistance with tracing user requirements and develop and review test plans, test reports and procedures.
- Support the development of new or enhanced flight test, ground test, and AFTC infrastructure capabilities.
- Provide expert assistance with design and implement the integration of flying qualities simulations into real-time displays. This requires using the test data to drive the simulation and the simulation response to be displayed in parallel with the test article response. This requires a subject matter expert in both flying qualities testing and simulation development.
- Provide expert assistance for the development of Test and Resource Management Center (TRMC) Unmanned and Autonomous Systems (UAS) T&E Roadmap. This requires a knowledge of both where UAS test requirements are going and what the existing test capabilities are across the Major Range and Test Facility Base (MRTFB).

3.2.1.1 The Contractor shall provide advice and assistance in flight and ground test planning, provisioning, executing, analyzing and reporting.

- Based on TEMPs, test concepts, test strategies, develop detailed test plans to include Technical Review Board packages, Safety Review Board packages, and test cards.
- Provide real-time control room monitoring and analysis.
- Provide post-flight data analysis and evaluation, to include the development and validation of project specific data analysis tools.
- Support the reporting of results to meet CTF customer requirements.

3.2.1.2 The Contractor shall provide advice and assistance in Range and Instrumentation systems (to include but not limited to: real-time networks, real-time data processing, mission control rooms (MCRs), communications systems, telemetry systems, Time Space Position Information (TSPI) systems, data links, flight tracking and termination systems, airborne instrumentation systems, video systems, etc.); Flight Sciences disciplines (to include but not limited to: flight dynamics, structures, propulsion, hypersonics, subsystems, reliability and maintainability (R&M), and human factors disciplines); and Avionics Systems disciplines (to include but not limited to: communications systems; datalink systems; guidance, navigation, and control systems; weapons integration; radar systems; mission planning systems; Electro-Optical/Infrared (EO/IR) sensors; and sensor fusion disciplines). Provide advice and assistance with Engineering and Manufacturing Development of new or modified flight test, ground test, and related support projects.

3.2.2 F-22 Combined Test Forces (CTF) Systems and Software Engineering.

The Contractor shall provide advice and assistance to the 412 TENG in systems and software engineering to refine and build upon an integrated Information System architecture.

3.2.2.1 The Contractor shall provide advice and assistance developing detailed action plans to address network architecture, standardization of end-user tools, applications and data architectures, interfaces with other systems on base, and coordination with other AFTC MIS initiatives.

3.2.2.2 The Contractor shall provide advice and assistance enhancing capabilities on classified and unclassified systems/networks and for engineering applications.

3.2.2.3 The Contractor shall provide advice and assistance in a wide range of leading edge Internet technologies and programming languages. These include Microsoft Internet Information Server, JAVA, ASP, Visual Basic, HTML, DHTML, XML, JavaScript, VBScript, MS Visual Studio.NET, SQL, Oracle and SQL Server. Additional tools required include Visio for database design and modeling and Visual Studios and Visual Source Safe for development and configuration control.

3.2.3 Test Capabilities and Infrastructure.

3.2.3.1 Systems Engineering (SE).

The Contractor shall provide SE advice and assistance for the development of Range test capabilities. The Contractor shall provide the following support:

- Concept exploration/definition, technology prototype development, technology and market surveys

- Requirements definition, validation, verification, refinement, and functional analysis and allocation, decomposition and tracking
- Technical and acquisition documentation development and support
- Project Management SE process flow tool development
- Development of trade studies
- Configuration Management (CM)
- Technical reviews
- Independent Verification & Validation, other testing and data analysis
- Risk management
- Logistics
- Integration planning and engineering
- Technical coordination with suppliers, other support contractors, AFTC staff organizations and functionals, and other Government organizations

3.2.3.2 Project Management.

The Contractor shall provide advice and assistance for the development of Range test capabilities such as TSPI, telemetry, MCR development, and data distribution developments. Support may include, but is not limited to:

- Schedule development and management using methods and tools specified by the Government.
- Development of acquisition documents such as:
 - Project Management plans, PMR packages, Cut drill packages, Supporting contract documentation
- Coordinate with suppliers, other support contractors, 412 TW staff organizations and functionals and other Government organizations.

3.2.3.3 Enhanced Telemetry and Spectrum.

The Contractor shall provide SE advice and assistance in the development and implementation of enhanced telemetry schemes for OSD. This includes engagement with the national and international spectrum communities, the investigation into enhanced technologies to better utilize spectrum, and the implementation of Central Test and Evaluation Investment Program (CTEIP) and service specific Test Investment Planning Process Improvement and Modernization (I&M) programs.

3.2.3.4 Spectrum Augmentation Analysis.

The Contractor shall provide advice and assistance for the Test & Evaluation for Science & Technology (T&E/S&T) efforts within the scope of Spectrum Efficient Technologies. The Contractor shall provide advice and assistance in the conduct of various studies to ensure that the S&T efforts are complete (from a SE perspective) and accurate and, that research or development proposals are feasible. The Contractor shall:

- Advise and assist in the Project Management of the T&E/S&T project.
- Advise and assist in the technical evaluation of research proposals.
- Advise and assist in in-house research initiatives into spectrum related topics.

3.2.3.5 Enhanced Telemetry Projects.

The Contractor shall provide SE advice and assistance to CTEIP programs like the integrated Network Enhanced Telemetry (iNET) project by providing test support for the development of telemetry network systems including the integration of flight-test instrumentation, radio frequency

(RF) network systems, and ground stations. SE advice and assistance support includes, but is not limited to the following:

- Provide programmatic support for the execution of the various telemetry network system (TmNS) developments.
- Assist in the management (planning, testing, tracking and reporting) of the TmNS test events conducted by iNET.
- Support network telemetry system test planning by participating in test planning meetings and provide input as needed.
- Reconfigure the Advanced Range Telemetry (ARTM) test lab to support instrumentation and telemetry component testing.
- Provide technical support for instrumentation and telemetry component testing in the ARTM lab.
- Configure developmental aircraft instrumentation to support telemetry network testing.
- Work with the 412th Test Wing Instrumentation and Maintenance organizations to prepare and install developmental aircraft instrumentation for telemetry network testing.
- Work with the 412th Range Squadron and Range support contractors as needed to prepare Range ground stations to support telemetry network testing.
- Provide on-site support for telemetry test events.

3.2.3.6 Mission Control Room (MCR).

The Contractor shall provide SE and technical advice and assistance to support the development and enhancement of the MCRs and associated systems/software. Provide expertise assistance to help design and develop a new Mission Control Room Architecture that will support the future requirements for the 96 TW, 412 TW, and potentially AEDC. The contractor shall bring a high level of technical expertise and the ability to facilitate technical discussion such that the diverse requirements can be documented and the architecture designed.

3.2.3.7 Time Space Position Information (TSPI).

The Contractor shall provide SE and technical A&AS to support the development and enhancement of the TSPI systems, networks, sensors, and analysis systems.

3.2.3.8 Range Systems.

The Contractor shall provide SE and technical advice and assistance developing and enhancing a wide variety of Range Systems, to include: Range Networks (Data Acquisition and Transport System); RF Measurement; Laser Measurement; Voice Communications; Video/Optical Data Systems.

3.2.3.9 Telemetry Systems.

The Contractor shall provide SE and technical advice and assistance developing and enhancing the fielded Telemetry Systems, to include: Telemetry antennas, waveforms, transmitters, receivers, transceivers, mobile systems, and remote control systems.

3.2.3.10 Network Centric Systems (NCSs).

The Contractor shall provide SE and technical advice and assistance developing and enhancing a wide variety of NCSs, to include: Tactical Data Links (Link-16, SADL, etc.); Aircraft Communications Systems (UHF, VHF, AEHF, etc.); Strategic Data Links (IFF, etc.); and Commercial Data Links (GATM, IFF, etc.).

3.2.3.11 Systems Engineering Process Development.

The Contractor shall provide SE and technical advice and assistance developing and enhancing processes, tools, and templates to support the implementation of a robust SE Process within the 412th Test Wing. Specific Systems requiring development support:

- Support the development of the SE process, tools and templates.
- Support the creation and coordination of RDT&E Certification and Accreditation packages that are then approved through the Government Information Assurance (IA) and accrediting officials.

3.3 412th Electronic Warfare Group (EWG).

The Contractor shall provide advice and assistance in the management and upgrade of all EW T&E resources including specialized test support and infrastructure. The Contractor shall operate under the Group's Master Architect, participate as a member of the SE team, and support the Group's internal and external customer requirements. The Contractor shall provide expert advice and assistance to effectively plan and execute numerous EW T&E investment programs; and translate the Group's short-range and long-range operational requirements into executable engineering plans and activities to facilitate modifications to existing EWG test capabilities and the development of new state-of-the-art test capabilities. The Contractor shall advise and assist in the development of technical reports, white papers, specifications, testing and training briefings, and feasibility studies in support of planning, programming, budgeting and execution.

The Contractor shall provide advice and assistance to avionics/EW flight and ground tests in the areas of test planning, test conduct, and test reporting for selected projects unique to new operational test capabilities and Flight Test Squadrons at security levels up to and including TS/SCI. The Contractor shall provide SE advice and assistance to the following program activities:

3.3.1 EWG Improvement and Modernization Capabilities.

The Contractor shall provide senior subject matter (EW test capability development) and engineering expertise, program management assistance, and advisory services to support planning and executing of EWG T&E investment programs, developing new and improved test methodologies, identifying and validating operational needs to formally initiate EW I&M projects, and developing EW test range/instrumentation capabilities. The Contractor shall provide advice and assistance to scope, define, implement, and track the development of EW test facility, range, and instrumentation capabilities. The Contractor shall provide advice and assistance in the verification and validation (V&V) of EW test facility, range, and instrumentation capabilities and their transition to the using organization.

3.3.1.1 Roadmap and Strategic Planning.

3.3.1.1.1 SE Team (SET)/SE Board (SEB) Support.

The Contractor shall participate as members of the EWG SET/SEB, in conjunction with the EWG Master Architect, and shall provide SE/TA advice and assistance for planning and future development of capabilities. The Contractor shall provide subject matter expert advice and assistance coordinating, executing, and prioritizing activities in EW and avionics systems. The Contractor shall provide advice and assistance in support of developing a charter and then executing the functions of the charter in coordination with the Master Architect and the EWG I&M leadership.

3.3.1.1.2 EWG Roadmap and Strategic Planning.

The Contractor shall provide advice and assistance performing studies and analyses, and providing recommendations to support AF strategic, modernization, investment, and acquisition planning processes. The Contractor shall provide advice and assistance in test requirement definition, test capability analysis, improvement and investment planning, AFTC I&M programming, and strategic planning. The Contractor shall provide advice and assistance developing, maintaining, and enhancing contacts with elements of the strategic, modernization, investment, acquisition, and operational planning communities and also develop and document future test requirements. The Contractor shall provide subject matter expertise for advice and assistance investigating, analyzing, evaluating, and documenting the capabilities of existing and planned AFTC and other DoD T&E assets in terms of future test requirements and T&E investments. The Contractor shall provide advice and assistance in the identification and planning of T&E investments and the development of new and improved test methodologies; refinement of DoD, Air Force Materiel Command (AFMC), and AFTC Test Investment Planning and Programming (TIPP) processes; defining, preparing, and reviewing strategic planning and I&M reports, briefings, and other documentation, such as roadmaps; and automate processes.

3.3.1.1.3 EWG Acquisition Management Support.

The Contractor shall provide advice and assistance in support of acquisition planning at all levels of acquisitions, from small purchases up to and including new or modified flight or test systems. The Contractor shall provide advice and assistance developing and analyzing acquisition strategy methodologies, developing and reviewing acquisition documentation, participating as advisors in Government source selections, participating in developing EW T&E needs and solutions, tracking current and planned T&E investments, participating in acquisition strategy analysis and planning, developing and documenting decision support systems and models, and developing and maintaining acquisition schedules. The Contractor shall provide advice and assistance for current DoD, AF, AFMC, and AFTC acquisition policy and guidance to acquisition projects, developing and reviewing acquisition planning packages and other acquisition documentation, reviewing or proposing inputs to Purchase Request packages, Request for Proposals (RFPs), PWSs, CDRLs, specifications, requirements documents, Sections L and M, Acquisition Plans, Award Fee and Surveillance Plans, Acquisition Cost Models, and other acquisition-related documents. The Contractor shall provide advice and assistance formulating, generating, reviewing, recommending revisions, and finalizing Source Selection Evaluation Guides, Source Selection Plans, and other source selection documentation, maintaining acquisition documentation, and conducting fact-finding activities associated with source selections in a non-decision-making role (e.g. as an advisor). The Contractor shall apply the same guidelines followed by Government personnel to ensure the integrity of the acquisition process is maintained. Once assigned to support a source selection, the Contractor employees must be properly briefed and these briefings must be documented and must remain available to ensure continuity and fairness in the source selection process. In addition, the Contractor may be required to sign a procurement integrity statement and/or a non-disclosure agreement (NDA) with specific companies as required. (See PWS 5.0 for further information)

3.3.1.2 EWG I&M Program Support.

As individual I&M programs are approved and funded, including those from AF TIPP and CTEIP, each will be segmented into its own task for support; and work packages shall be developed for each program. Programs supported and representative programs to be supported include:

3.3.1.2.1 Benefield Anechoic Facility (BAF)/Integrated Facility for Avionic Systems Test (IFAST) Upgrades.

The Contractor shall provide technical expertise and SE advice and assistance supporting the Program Office's management of the BAF/IFAST upgrades. These upgrades are currently being executed as part of the Advanced Warfare Test and Evaluation Capability (AWTEC) Program. Specific areas of effort include the development and updates to the technical requirements, system interface design updates to legacy stimulator subsystems, engineering reviews of Prime Contractor development efforts, and system commissioning.

New capabilities to be reviewed throughout the development cycle may include, but are not limited to the following:

- Scenario Development
 - Integrated Test Control and Test Event Synchronization
 - Scenario Development
 - Real-time Test Displays
 - System Under Test (SUT) Interface and Avionics Models
 - Instrumentation
 - Data Collection, Reduction and Analysis
 - Multi-Spectral Stimulation
 - EW Threat Signal Generation
 - Communications, Navigation, and Identification (CNI) Signal Generation subsystems to include Link-16, IFF Mode S and Mode 5
 - Satellite Communications
 - Strategic Data Link Simulator
 - Chamber Environmental and Analysis
 - System Commissioning
- a) The Contractor shall provide advice and assistance in interfacing with testers/test customers to ensure the upgrade/new system and BAF legacy stimulator capabilities are adequately addressed in test plans based on SUT Measures of Effectiveness (MOE)/Measures of Performance (MOP) criteria. The Contractor shall provide engineering advice and assistance to ensure customers can correlate ground test to open air test data. The Contractor shall provide advice and assistance in support of V&V across Modeling & Simulation (M&S), Systems Integration Lab, HITL Installed System Test Facility, Open Air Range (OAR), and also correlate results with external systems.
- b) The Contractor shall provide technical expertise and SE advice and assistance to identify technology efforts that can enhance the capability of the upgrade/new system and BAF legacy simulators/stimulators. The Contractor shall provide advice and assistance to identify technological improvements to enhance the reliability and maintainability of radio frequency (RF) threat signal simulation and generation, leading to the development and testing of the Next Generation EW Environment Generator (NEWEG). The Contractor shall provide SE advice and assistance to identify technology efforts that will enhance the electromagnetic interference/electromagnetic compatibility test capability, enabling testing to MIL-STD-464 requirements. The Contractor shall provide advice and assistance to provide for the integration of the upgrade/new system, for example Combat Electromagnetic Environment

Simulator (CEESIM) Improvement & Modernization Program Lifecycle Extension (CIMPLEX), into the BAF/IFAST system architecture, to include test and training. Activities may include:

- Identify new and necessary test capabilities in support of integrated EW testing.
- Develop system design solutions to meet the need for new and upgraded test capability.
- Prepare functional and performance specifications for required system components.

- c) The Contractor shall provide advice and assistance for the development of Network Centric Warfare/Network Centric Operations T&E capabilities which would lead to a distributed simulation test environment that includes test operations through a Joint Mission Environment Test Capability node as well as support for the Test and Training Enabling Architecture (TENA).
- d) The Contractor shall provide advice and assistance to develop system security accreditation packages and provide a comprehensive approach to overall security for an integrated suite of simulators/stimulators (e.g., the upgrade/new system). These security packages/agreements will be coordinated with the appropriate AFTC Information Assurance (IA) personnel.

The Contractor shall provide advice and assistance supporting the EWG SET/SEB and executing priority projects. The Contractor shall provide advice and assistance in support of identifying development efforts to enhance test capabilities to meet current and future customer requirements. These tasks may include support for ongoing and new Small Business Innovation Research programs or other technologies or major Engineering, Manufacturing and Development acquisition programs.

- e) The Contractor shall provide advice and assistance in support of the development of requirements, designs, and contract initiation and monitoring for new projects. Candidate projects include but are not limited to:
 - RF Monitoring Enhancements
 - Free Space System Improvements
 - CEESIM Enhancements
 - Facility Infrastructure Enhancements
 - Portable Simulator Trailer
 - Additional Range Emitters
 - Global Positioning System Reradiate Upgrade
 - Technical support and training for using ACE-FTM, as required and per I&M PMs.
 - Test capabilities and customer support concepts/proposals

3.3.1.2.2 CTEIP Funded Programs.

The Contractor shall provide SE/TA expert advice and assistance supporting the Integrated Product Team (IPT). The Contractor shall provide advice and assistance in the evaluation of Contractor designs, participating in program and system reviews, reviewing of Contractor provided documents, in facilitation of system level interface development, supporting of system testing, supporting system V&V, and system integration. The Contractor shall provide advice and assistance supporting program status reporting locally and to the OSD and supporting development of new projects to enhance existing system capabilities. The scope of the activities includes development of the programmatic documentation and briefings IAW CTEIP PEG, as applicable.

These efforts will be prioritized and executed as elected by the Project Development Division and the Program/Project Manager, consistent with the goals of EWG and its Master Architect.

The Contractor shall provide advice and assistance in support of the following activities:

- Support the EWG SET/SEB and execute priority tasks.
- Provide the OSD CTEIP compliant documentation and briefings, as required.
- Support TIMs, System Requirements Reviews, Working Groups, Design Reviews, and Analysis of Alternatives (AoA) to include any benchmarking or evaluation tests.
- Assist with reviewing design documentation and drawings, functional flow diagrams, software requirements, and other information to assure system concepts, architecture, and approach meet system requirements.
- Assist with consolidating, deriving, and partitioning requirements.
- Assist with identifying the requirements and specifications for hardware, software, or equipment.
- Develop/update/review of System Requirements Document, Specification.
- Development Plan, Project Management Plan, and PWSs, as necessary.
- Assess and evaluate technology, intelligence, and engineering options available from existing and new developments.
- Identify new starts and upgrade requirements and support their development, if approved.
- Participate in vendor reviews and provide technical assessments, as required.
- Conduct high technology tasks needed to enhance system capabilities and support appropriate studies.
- Provide feasibility assessments of proposed designs.
- Participate in program/project contract meetings, reviews, and TIMs
- Participate as technical advisors in the review of Contractor documents.
- Assist in the resolution of requirements issues and answer technical questions.
- Provide support to the PM on plans, schedules, and briefings.
- Coordinate program/project issues with other developmental projects.
- Support the system integration efforts and system transition and turnover.
- Provide liaison support between the AF and other services, as required.
- Provide support for test customers as the capability matures.
- Support V&V.
- Support System Testing.
- Support system test applications for specific projects.
- Prepare Acquisition and Technical data.
- Assist in managing the task, integrating the system elements into the EWG capability, and integrating the system elements with external entities, as required.
- Assist the Master Architect, Project Development Division, operations, and project integrators with test capabilities and customer support concepts/proposals.

3.3.2 Digital Integrated Air Defense System (DIADS).

3.3.2.1 As required, the Contractor shall provide SE and Project Management advice and assistance for DIADS upgrades development and test projects, as required, but not limited to:

- DIADS Weapons Control and Radar Reactivity Upgrades
- Integration of TENA and All-purpose Structured Eurocontrol Radar Information Exchange interfaces with DIADS

3.3.2.2 As required, the Contractor shall provide advice and assistance to the EWG at planning, technical, and decision meetings with both test customers and higher HQ management for future DIADS development and test projects. The Contractor shall provide advice and assistance supporting the planning of DIADS upgrades and configuration of the model.

3.3.3 Next Generation EW Environment Generator (NEWEG).

The Contractor shall provide SE/TA and acquisition advice and assistance to the AF on the NEWEG Project. The AF has teamed with the Navy to develop the NEWEG capability as a replacement or enhancement to the current CEESIM capability used in the BAF. The Navy is the lead on the CTEIP program and the AF is the designated Deputy PM. The EWG I&M office is the AF office responsible for ensuring the direction of the AF NEWEG efforts. The Contractor shall provide advice and assistance supporting the overall task management, as required by the EWG NEWEG PM. These efforts will be prioritized and executed as elected by EWG I&M leadership.

The Contractor shall provide technical and programmatic advice and assistance for the following activities:

- Support EWG participation in the NEWEG Program.
- Develop, update, and review technical requirements, documents, interfaces, specifications, development plans, Project Management plans, PWSs, and other program documentation as required.
- Participate in vendor reviews and providing technical assessments
- Participate in IPT meetings, reviews, TIMs, and studies.
- Assess and evaluate technology and BAF integration requirements.

3.3.4 Electronic Warfare Test Capability Improvement Program (EWTCIP).

The contractor shall provide SE/TA and acquisition advice on the EWTCIP project. EWTCIP will develop a backbone infrastructure to connect NEWEG, ADTRA, LB-EFS, ULB-EFS mmW-EFS and CEESIM to work as a cohesive Electronic Warfare (EW) threat simulator. This capability includes all data flow between sub-systems and timing distribution. The development of the free-space test calibration system will also be developed under this project. The contractor shall provide advice and assistance in supporting the overall task management, as required by the EWTCIP PM. These efforts will be prioritized and executed as elected by EWG I&M leadership.

The Contractor shall provide technical and programmatic advice and assistance for the following activities:

- Support EWG participation in the EWTCIP project.
- Develop, review and update technical requirements, documents interfaces, specifications, Project Management Plans, PWS', and other program documentation as required.
- Participate in IPT meetings, reviews, TIMs, and studies.
- Assess and evaluate technology and BAF integration requirements.
- Help design and build a lab environment to test components or full systems related to EWTCIP.

3.3.5 Jammer/ECM (JECM).

The contractor shall provide SE/TA and acquisition advice on the EWTCIP project. Jammer/ECM program is providing Electronic Counter Measurement (ECM) signal measurement capability as well as ECM analysis in a realistic threat environments. The capability will also

provide near real time jammer analysis software to assess jammer performance. The system will have capability for ground testing with agile multi-beam jammers and multiple simultaneous jammer beams.

The Contractor shall provide technical and programmatic advice and assistance for the following activities:

- Support EWG participation in the Jammer/ECM (JECM) project.
- Develop, review and update technical requirements, documents interfaces, specifications, Project Management Plans, PWS', and other program documentation as required.
- Participate in IPT meetings, reviews, TIMs, and studies.
- Assess and evaluate technology and BAF integration requirements.
- Project management support

3.3.6 Advanced Dynamic Transmit Array (ADTRA).

The Contractor shall provide senior RF/antenna subject matter engineering expertise, SE, technical and acquisition advice and assistance to the AF ADTRA Project. The AF has teamed with the Navy to develop the ADTRA capability as a replacement/upgrade for the existing RF transmission carts currently used with the CEESIM system in the BAF. ADTRA is required to more fully utilize the capabilities being provided by the aforementioned NEWEG system. The AF is the lead on this CTEIP program. The EWG I&M office is the AF office responsible for ensuring the direction of the program and is responsible for ADTRA engineering development. The contractor shall provide advice and assistance participating in project IPTs as well as supporting the EWG I&M office in the overall development effort. The contractor shall provide advice and assistance to EWG I&M office developing program status, documentation, and CTEIP compliant information. These efforts will be prioritized and executed as elected by EWG I&M leadership. The Contractor shall provide technical and programmatic assistance by performing the following activities:

- Develop/update/review technical requirements, documents, system interfaces, specifications, development plans, Project Management plans, PWSs, and any other CTEIP compliant documentation as required.
- Assess and evaluate technology, intelligence, and engineering options available from existing and new developments.
- Participate in vendor reviews and provide technical assessments.
- Conduct high technology tasks.
- Participate in IPT meetings, reviews, TIMs, and studies.

3.3.7 Joint Strike Fighter (JSF).

As required, the Contractor shall provide advice and assistance in general Modeling, Simulation, and Analysis (MSA), EW SE, and Project Management to the JSF Integrated Test Force (ITF).

3.3.7.1 As required, the Contractor shall provide advice and assistance to ITF personnel establishing and developing the MSA Support DT&E Environment, beginning with the development of the concept. The Contractor shall provide advice and assistance establishing and validating appropriate requirements; investigating alternatives; planning for, acquiring and integrating software, hardware, training, as required; planning and conducting work needed to validate, verify, and accredit models and simulations in the M&S Environment; conducting analyses and reporting on the results; and in general, coordinating the activities of the M&S Environment to support the JSF ITF.

3.3.7.2 As required, the Contractor shall provide SE and technical advice and assistance to develop Manned Flight Simulator (MFS). The Contractor shall provide expert advice and assistance in requirements planning, mission level test capability, development and building MFS for developmental and operational testing of JSF. The Contractor shall provide advice and assistance to study, analyze, develop requirements and propose solutions leading to accomplishing the overall EW Interoperability through internal and external linking for system-of-systems testing capability at EWG. The Contractor shall provide advice and assistance identifying, documenting and implementing new requirements as they emerge from the JSF Program Introduction Document to provide an efficient test facility for JSF and future developmental test (DT) and operational test (OT) programs.

3.3.7.3 As required, the Contractor shall provide advice and assistance identifying and allocating requirements to achieve mission level virtual, real time M&S T&E at EWG to support both DT and OT of modern and future aircraft such as JSF.

3.3.8 772d Test Squadron.

The Contractor shall provide advice and assistance in support of the 772 TS in the areas of process improvement, quality management, and security accreditation efforts for a number of different projects at security levels up to and including TS/SCI. The Contractor shall provide advice and assistance in coordinating policy, oversight, and priorities with the Government manager.

3.3.8.1 The Contractor shall provide advice and assistance in support of the 772 TS in the following areas:

- Requirements definition
- Methodology development and validation
- Test plan process review and process improvement
- Technical report process review and improvement
- V&V and correlation
- Data process definition
- Analysis tools development and implementation
- Improvement of operations analysis procedures
- Project Management.

3.3.8.2 The Contractor shall provide senior level engineering expertise for advice and assistance in support of test plan generation, resource planning and software development, as required. The Contractor shall provide advice and assistance monitoring or supporting performance of tests when customers anticipate a change in test or data analysis methodology.

3.3.8.3 The Contractor shall provide advice and assistance in support of the EW T&E process. The Contractor shall provide knowledgeable engineering expertise for advice and assistance in support of DIADS; Installed Test Integration Program; AWTEC; M&S T&E Resource; EW T&E M&S; Communications, Navigation, and Identification (CNI) Signal Generation subsystems to include Link-16, IFF Mode S and Mode 5; and Avionics Test and Integration Complex capabilities of EW OAR testing techniques.

3.3.8.4 The Contractor shall provide advice and assistance participating in Test Plan Working Groups (TPWGs), TIMs, and Technical Change Proposal meetings, etc., as needed and may be

asked to provide, briefing materials and demonstrations for such meetings and working groups.

3.3.8.5 The Contractor shall provide advice and assistance in support of planning and analysis activities associated with new requirements and tasking, as required. The Contractor shall provide advice and assistance in project management to EWG by reviewing and analyzing proposed engineering changes, producing engineering studies, and answering general engineering questions regarding the integration of state-of-the-art and one-of-a-kind systems and subsystems into EWG test capabilities. Surge support is anticipated for future, unscheduled work of a limited term that is assigned to the EWG.

3.3.8.6 The contractor shall provide advice and assistance in support of developing security accreditation packages and providing a comprehensive approach to overall security for an integrated suite of simulators/stimulators and MASTER for the 772 TS. These security packages/agreements will be coordinated with the appropriate AFTC Information Assurance personnel.

3.3.9 Studies and Analysis.

The Contractor shall provide SE/TA advice and assistance in support of the EWG in studies and analysis of potential future capabilities and systems. Study efforts will be prioritized and executed as elected by the EWG I&M office in coordination with the 772d Technical Adviser. The Contractor shall support other actions as assigned by the 772 TS or EWG I&M office in support of studies.

3.3.9.1 The Contractor shall provide advice and assistance participating in designated studies as well as supporting the 772 TS and EWG I&M office in the overall task management. The Contractor shall provide advice and assistance developing program status reporting locally and CTEIP compliant information, when applicable.

3.3.9.2 The Contractor shall provide technical and programmatic advice and assistance by performing the following activities:

- Support EWG participation in joint service studies and analysis.
- Develop/update/review Requirements, Documents, Interfaces, Specifications.
- Development Plans, Project Management Plans, and PWSs.
- Assess and evaluate technology, intelligence, and engineering options available from existing and new developments.
- Participate in vendor reviews and provide technical assessments.
- Conduct high technology tasks needed to support study findings.
- Participate in IPT meetings, reviews, and TIMs.

3.3.10 Stingray.

The Contractor shall provide senior subject matter technical expertise in MSA and SE advice and assistance in supporting the Stingray CTF. The Contractor shall assist in establishing and developing the MSA Developmental Test and Evaluation (DTE) Environment, beginning with the development of the concept, through build, integration with related systems and operation. In this support role, the Contractor shall establish and validate appropriate requirements, investigate alternatives, and submit these for Government approval. Submissions may be provided as documentation of briefings, as determined by Stingray task lead. The Contractor shall plan for and integrate software and hardware, provide training, plan and conduct work needed to validate,

verify, and accredit models and simulations in the M&S Environment, conduct analyses and report on the results, and in general coordinate the activities of the M&S Environment used to support the Stingray CTF.

3.3.11 Joint Simulation Environment (JSE).

As required, the contractor shall provide Project Management Support, Information Management/IA Support and Administrative Support advice and assistance for the JSE development program as required, but not limited to:

- JSE Integrated Master Schedule (IMS) assistance and other PM duties as needed.
- Assist in writing Authority to Operate (ATO) and Risk Management Framework (RMF) packages and other Information Assurance assistance as needed for JSE.
- Administrative Support to include, but not limited to scheduling meetings, taking notes at meetings, transcribing notes, answering phones, and attending meetings for JSE.

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