PART 1 - SECTION C

STATEMENT OF WORK –SYSTEMS ENGINEERING (SE)

C.1   GENERAL

C.1.1   Objective

The objective of this contract is to provide a broad range of Systems Engineering (SE), technical, financial, and programmatic support services, and other aviation related support services, that will enable the Federal Aviation Administration (FAA) to accomplish its National Airspace System (NAS), Non-NAS, and other aviation related mission objectives. Section C.2 (Scope) further defines the scope of the contract.

C.1.2   Background

(a) With the expected growth in air traffic operations and our aging infrastructure, the FAA, in collaboration with its aviation partners, other federal agencies/departments, foreign entities, and users of the NAS and the larger national air transportation system, has begun the task of transforming the NAS to meet the future demands expected between now and 2020 and beyond. This effort is called the Next Generation Air Transportation System (NextGen). NextGen goals are laid out in the Next Generation Air Transportation System Integrated Plan (December 2004) and include: enhancing the passenger experience from curb-to-curb; increasing capacity and efficiency through modernized and near real-time air traffic management capabilities/techniques/procedures; reducing operational ownership costs and environmental impacts; reducing the impact of weather on air travel through a system-wide capability for enhanced weather observations and forecasts; modifying or enhancing existing aircraft certification requirements and regulations; securing and defending the air transportation system against emerging threats; and ensuring our leadership position in managing the safest and most efficient air transportation system in the world.

(b) In order to accomplish NextGen, as well as other non-NextGen aviation related activities, a portfolio of contract support services vehicles were awarded in 2010 under the title of Systems Engineering 2020 (SE-2020). The scope of the support services of SE-2020 is in direct support of U.S. aeronautics development and the transformation of the national air transportation system. The FAA intends, but is not required, to manage this contract as part of the SE-2020 portfolio of contract vehicles.

(c) The transformation to this vision will not be made by the FAA alone. It requires other member Federal agencies, as well as partnerships in the public sector (e.g., airport authorities, state/local governments, etc.), private sector entities (e.g., airlines, manufacturers, etc.), and academic institutions to create a world-class consortium focused on identifying

solutions for implementing NextGen. The FAA is committed to transforming the aviation system in conjunction with NextGen partner Federal agencies and public/private entities. The multi-agency public/private initiative includes the Departments of Transportation, Defense, Commerce, and Homeland Security, as well as the FAA, the National Aeronautics and Space Administration (NASA), the White House Office of Science and Technology Policy (OSTP), public sector, and private enties. The NextGen vision is an integrated evolutionary plan to take the FAA beyond ground-based radar technology and voice direction into the second century of aviation using modern technology; updated procedures and new equipment; satellite-based operations; updated communications and automation; and improved weather and traffic management capabilities.

(d) To realize this vision, the FAA must make coordinated improvements on multiple fronts. The NextGen Implementation Plan will be the mechanism by which the FAA holds itself accountable to its customers and the aviation community for progress toward the NextGen vision. See http://www.faa.gov/NextGen/implementation/.

(e) The NAS Enterprise Architecture (EA) aggregates and describes the research and systems needed to achieve the goals of the FAA for the NAS, and serves as the basis to evaluate and document needed upgrades. The NAS EA provides a description of the specific NAS systems and subsystems undergoing research and development, production, or those planned for future development. The NAS Architecture recognizes that maintenance and upgrade efforts of the numerous NAS systems and facilities is a continuing integrated process rather than a singular effort culminating in a final end-state system design. The FAA's NAS Architecture can be found at https://nasea.faa.gov/.

C.2   SCOPE

C.2.1   General

(a) Subject to the exclusions set forth in (a) (2) below:

   (1)   The Scope of this contract covers a broad range of:

   (i) SE, technical, financial, and programmatic support services, and other aviation related support services, that include but not limited to, systems engineering & integration, investment and business case analysis, system acquisition program planning & management, system development & implementation planning & management, System Life Extension Program/Technical Refresh planning, program & contract management, forecasting and business/financial/information management, and

   (ii) other support services for NAS, Non-NAS, and other aviation related efforts that the FAA may require under the FAA Acquisition Management System (AMS).

(2)   The scope of this contract excludes the following support services. For NAS and Non-NAS capital investments, the support services are provided through all the phases of the AMS Lifecycle Management Policy, subject to the exclusions set forth below:

(i) Research activities covered by portions of the AMS Lifecycle Management Policy before the CRDR Decision point in the AMS Lifecycle Management Policy (i.e., AMS Section 2.2 & 2.3); and

(ii) Activities after the Final Investment Decision (FID) point in the AMS Lifecycle Management Policy that are:

   a.   Full-Scale Development;

   b.   Maintenance of NAS systems; or

   c.   Program management support for program offices responsible for fielding and/or maintaining NAS systems.

(b) Since the NAS encompasses far more than the FAA's infrastructure, this contract allows for studies of systems that may never be owned by the FAA.

(c) The FAA AMS Lifecycle Management Policy can be found at: http://fast.faa.gov/.

(d) The FAA intends for this contract to remain current and continue to provide a full range of support services within the contract scope throughout the contract's period of performance. Accordingly, the FAA may make updates to the contract at any time, as appropriate, to ensure the contract continues to provide a full range of services within the contract scope. This includes, but is not limited to:

(i)   Updates to references to AMS Lifecycle Management Policy. The Scope of this contract references terms described in the AMS Lifecycle Management Policy. The FAA may revise the AMS Lifecycle Management Policy from time to time. If such a revision occurs, the FAA may update the contract's references to the AMS Lifecycle Management Policy, as appropriate. If such updates are needed, the FAA will implement them in a manner that will not materially modify the substantive scope of the contract.

(ii)   Updates to Tasking Requirements and Core Capabilities. The Tasking Requirements listed in Section C.3 and the Core Capabilities listed in Attachment A are not intended to be an exclusive list of the services that can be ordered within the scope of the contract. The FAA may add or revise Tasking Requirements and Core Capabilities to cover additional services within the scope of the contract.

Updates to references to AMS Lifecycle Management Policy and updates to the Tasking Requirements are within the specific scope of the contract and will not constitute a "change" for purposes of the Changes Clause.

(e) The Contractor must, in response to Task Orders issued under this contract, provide the full range of support services required by the contract. When the FAA orders work under this contract, it will do so by issuing individually-funded Task Orders (TOs) that identify, define, and issue specific one or more requirements within the Tasking Requirements listed in Section C.3.

(f) The Contractor may be issued Task Orders that are related to the development of future NextGen Systems, Non-NextGen Systems, as well as other areas that are aviation related.

C.2.2   Task Order Management

(a)   Task Order management is a mandatory element for all Task Orders placed under this contract. Task Order management must provide the appropriate program management and project control necessary to manage the Task Order; ensure that the cost, schedule and quality requirements for each Task Order are continually tracked and the status communicated to the FAA; and ensure that each Task Order is successfully completed.

(b)   The Contractor must furnish and make available all personnel, supplies, equipment, materials, data, facilities, and services necessary to perform the work under this contract.

(c)   The Contractor must provide quality technical, engineering, analytical, planning, and management support to achieve the requirements of this SOW.

(d)   As determined by the FAA, the Contractor may be required to interface with system integration contractors, equipment manufacturers, airport personnel, various FAA and U.S. Government and Military organizations, and international organizations.

C.2.3   Applicable Documents

Applicable FAA/DOT orders, process guidelines, and military standards may be specified and identified as references within the individual Task Orders. FAA orders and notices can be found at: https://employees.faa.gov/tools_resources/orders_notices/.

C.2.4   Government Furnished Property

All Government Furnished Property (GFP), to include information, material, and equipment, may be specified within the individual Task Orders. All GFP is the property of the Government and must not be transferred to any individual or agency, public or private,

without the express written approval of the Contracting Officer, except as required for the specific performance of the Task Orders. The FAA will specify GFP in individual Task Orders.

C.2.5   Security Requirements

Security requirements, applicable to the work to be performed under each Task Order, may be identified within the individual Task Orders. Additional security clearances may be needed for specific Task Orders. Candidates identified for performance under those Task Orders must hold or be eligible to obtain the requisite security clearance.

C.2.6   Data Deliverables

Specific data deliverable requirements may be included in the individual Task Orders issued under this contract, either as an item in a Contract Data Requirements List (CDRL) or specified in the Task Order.

C.2.7   Quality Management Support and Compliance

(a) Certain Task Orders may include activities that require Contractors to support the FAA in complying with various Quality systems or models. Examples of Quality systems or models include but are not limited to:

- Various International Organization for Standardization (ISO) standards such as:

  o   ISO-9001, and

  o   ISO-14001 (which is affiliated with Environmental Management Systems (EMS));

- Safety Risk Management / Safety Management System; and

- Capability Maturity Model Integration (CMMI).

(b) Some Task Orders may require the Contractor to assist the FAA in meeting their compliance or to support the FAA in becoming compliant with Quality systems or models.

(c) Other Task Orders may require the Contractor to be compliant with Quality systems or models. If there is a requirement included in a Task Order that a Contractor must be compliant, it is the responsibility of the Prime Contractor (utilizing subcontractors as appropriate) to ensure Quality Management support or compliance requirements are met.

C.2.8   Protection of Human Participants

The Contractor must ensure the safety and well-being of all human subjects taking part in FAA-sponsored activities or FAA-conducted scientific research under any Task Order for

which the Contractor is providing support, and must adhere strictly to the provisions of the Federal Policy for the Protection of Human Subjects (49 CFR Part 11).

C.2.9   SE Core Capabilities

(a) Task Orders issued under this contract will require the Contractor to perform technical services, possess specialized experience or expertise with particular capabilities, and apply specific techniques or analyses. These capabilities and techniques are referred to as SE Core Capabilities and are identified in Attachment A of this SOW.

(b) The Core Capabilities are capabilities that are needed to perform the Tasking Requirements. The Core Capabilities do not define the scope of this contract. With respect to the SE2025 portfolio of contracts, some Core Capabilities may be present on both R&MA and SE contracts. Those Core Capabilities are intended to be applied consistent with the scope of the particular contract.

C.3   TASKING REQUIREMENTS

C.3.1   System Engineering Management

As tasked, the Contractor must support all aspects of systems engineering and integration activities associated with planning, managing, supporting, executing, and maintaining system engineering processes, programs and work, which includes, but is not limited to the following:

- •   Drafting the Systems Engineering Management Plan (SEMP), specification tree, the program risk analysis, the decision control process, system planning, technical performance measurement, technical reviews, subcontractor and vendor reviews, work authorization, and technical documentation control;

- •   Measuring and improving the effectiveness and efficiency of system engineering processes; and

- •   Integrating technical planning to provide program management with specific guidance and direction on how to execute a requirement-based and structurally managed program.

C.3.2   Preliminary Program Requirements (pPR)

As tasked, the Contractor must support system engineering activities associated with translating information in the Mission Needs Statement (MNS) into initial preliminary Program Requirements (pPR) documents, consistent with the Operational Concept. It also includes the Requirements Correlation Matrix and the Mission Need Correlation Matrix as defined by the AMS Lifecycle Management Policy.

C.3.3   System Requirements and Definition

As tasked, the Contractor must support all activities associated with transforming the performance requirements of a final Program Requirements (fPR) document into draft specifications and a preferred solution configuration. This system engineering effort, which is applicable to each component of the solution throughout the program lifecycle, includes drafting and maintaining design criteria, and preparing and maintaining system-level data flows, block diagrams, change proposals, and documentation trees. This includes, but is not limited to, the following activities:

•   Supporting requirements management activities to identify and manage the requirements that describe the desired characteristics of the system. The Requirements Management process defines, collects, documents, and manages all requirements, including the complete requirements set consisting of the MNS, the pPR and fPR documents, and the system and procurement specifications;

•   Supporting risk management activities to identify and analyze the uncertainties of achieving program objectives and developing plans to reduce the likelihood and consequences of those uncertainties. Risk management is applied throughout the acquisition management lifecycle to: 1) identify and assess risk areas, 2) develop and execute risk mitigation or elimination strategies, 3) track and evaluate mitigation efforts, and 4) continue mitigation activity until risk is eliminated or its consequences reduced to acceptable levels;

•   Supporting lifecycle engineering to identify and manage requirements for system lifecycle attributes, including real estate management, deployment and transition, integrated logistics support, sustainment/technology evolution, and disposal;

•   Supporting functional analyses to describe the functional characteristics based on stakeholder needs, using functional flow diagramming as a representative structured analysis process, and to translate needs into a sequenced and traceable functional architecture; and

•   Supporting the synthesis of alternatives to define design solutions and to identify systems that satisfy the requirements baseline. Synthesis translates the requirements, as set in context by the Functional Architecture, into the design architecture, consisting of the Physical Architecture with its associated technical requirements.

C.3.4   Analysis, Design, and Integration

As tasked, the Contractor must provide support to program office(s) in charge of hardware, software, telecommunications, user functions, services, and facilities which includes, but is not limited to, the following:

•   Overall analysis;

• Design and integration;

• Test and evaluation;

• Intra-system and inter-system compatibility assurance; and

• Allocation of functional capabilities.

C.3.5 Value Engineering

As tasked, the Contractor must provide value engineering support services. These include, but are not limited to, analyzing current designs versus alternative designs in order to:

• Provide value added and cost reduction of alternative architectures;

• Perform trade-off studies and detailed analysis to develop a series of design alternatives/viable approaches; and

• Recommend the most balanced technical solution(s) among a set of proposed viable solutions.

C.3.6 Supportability, Maintainability, and Reliability Engineering

As tasked, the Contractor must support all engineering activities and analyses undertaken during solution development as part of the engineering and design effort, to assist in complying with supportability and other logistics support objectives. These activities include, but are not limited to, the following:

• Supportability analyses identifying the most cost effective system support over the entire lifecycle;

• Maintenance planning activities associated with measuring the ability of an item or solution to be retained or restored to a specific condition of readiness;

• Reliability engineering to define the engineering processes required to examine the probability of a solution to perform its mission over the intended period of performance and under expected operation conditions; and

• Requisite engineering, scientific, and analytical disciplines to ensure that systems and platforms to be developed, deployed, and maintained in the NAS include Reliability, Maintainability and Availability (RM&A) requirements within their design, development, and lifecycle.

C.3.7 Quality Assurance and Quality Control Program

As tasked, the Contractor must support all activities associated with planning, establishing procedures, evaluating and verifying/auditing that are required, but are not limited to, during procurement, production, receipt, storage, and issue of products or services that are necessary to develop the solution in accordance with identified Quality Assurance & Quality Control Standards and/or Quality Standard Operation Procedures documents.

C.3.8 Configuration Management

As tasked, the Contractor must support all activities associated with establishing and maintaining the consistency of a product's performance, functional, and physical attributes with its requirements, design, and operational information throughout its life. This includes, but is not limited to, the establishment, monitoring, and administration of change control procedures, including collecting, processing, distributing, and tracking modification request forms; establishment and administration of change control boards, and formal audits to compare product to documentation. It also includes configuration management of hardware, software, facilities, data, interfaces, tools, and documentation.

C.3.9 NAS Information Security (INFOSEC) Support

As tasked, the Contractor must support FAA efforts to address the security of information and computing resources including, but not limited to, the identification, evaluation and proposal of candidate technical security solutions for both existing and future NAS Systems. The Contractor must support the FAA Certification and Accreditation (C&A) Package as defined in FAA Order 1370.82A. Additionally, NAS INFOSEC Support includes, but is not limited to:

• Assessing the vulnerability of NAS and other FAA/DOT systems to unauthorized access, use, or susceptibility to sabotage, and assessing system security threat survivability;

• Analyzing the source and impact of incursions/attempted incursions;

• Identifying and implementing necessary corrective responses;

• Protecting proprietary information to which the Government and its users have access;

• Maintaining security policies/procedures for NAS systems and subsystems;

• Analyzing and prioritizing security measure enhancements and/or upgrades for all operational NAS systems;

• Verifying and analyzing security features incorporated in new or modified systems;

• Administering the security (physical and INFOSEC) of software development and distribution platforms;

• Addressing security policies and procedures for the development, maintenance and support of the NAS EA Framework with an emphasis on the Information System Security (ISS); and

• Developing and securing all required ISS NAS EA views, datasets and/or databases, and participation in NAS EA working groups.

C.3.10   Non-NAS Information Systems Security

As tasked, the Contractor must provide support in the area of non-NAS systems security which includes, but is not limited to, the following:

• Performing security risk analyses;

• Identifying potential information security threats;

• Recommending mitigation procedures for the identified threats;

• Supporting the FAA C&A process; and

• Developing all required Information System Security (ISS) non-NAS EA views, datasets and/or databases, the secure storage of the aforementioned, and participation in FAA non-NAS EA working groups as assigned.

C.3.11   System Safety Engineering and Management

As tasked, the Contractor must provide System Safety Engineering and Management support. This includes but is not limited to the following support:

• Planning, conducting, documenting, identifying, classifying, analyzing, assessing hazards, identifying safety threats, and associated risks;

• Studying and recommending measures to mitigate hazards or reduce risk to an acceptable level, verifying that mitigation measures are incorporated into product design and implementation, and assessing residual risk;

• Assessing the predicted efficacy of identified mitigation procedures/techniques and the expected impacts upon NAS system operations;

• Establishing and maintaining safety policies and procedures for NAS systems and subsystems, examples of which are below:

   o   Assessing safety capabilities and levels of effectiveness for all operational NAS systems;

o   Developing maintenance and support of the FAA Enterprise Architecture Framework with a strong emphasis on the System Safety portions;

o   Developing and securing storage of all required Safety NAS EA views, datasets and/or databases;

o   Participating in FAA NAS EA working groups;

• Analyzing and prioritizing of safety measure enhancements or upgrades for all operational NAS systems; and

• Verifying and analyzing safety features incorporated in new or modified systems.

C.3.12   Other System Engineering Specialties

(a) As tasked, the Contractor must support specialty engineering disciplines to include but is not be limited to:

• Analysis of system requirements, functions, solutions, and/or interfaces using specialized skills and tools;

• Derivation of requirements;

• Synthesis of solutions;

• Selection of alternatives; and

• System-of-Systems Integration.

(b) Further details of specialty engineering can be found at:

http://fast.faa.gov/SystemEngineering.cfm.

C.3.13   NAS Enterprise Architecture Support

As tasked, the Contractor must support the development and maintenance of the NAS Enterprise Architecture (EA) including, but not limited to, the following:

• Supporting artifacts that describe the evolution of the NAS EA;

• Development and maintenance of "FAA road maps" and milestones;

• Development of operational analyses and studies;

• Support of strategic and program mission and investment analysis activities;

• Analysis, tracking, and reporting of connections and dependencies between the research and development portfolios, the NAS EA, the NextGen portfolio, and other U.S. and International research and development programs;

• Development of operational concepts for NextGen and their translation into capabilities, operational improvements, and performance requirements for NextGen;

• Development and maintenance of an integrated suite of applications and tools, including a web-based administrative application, to input, collect, organize, maintain, modify, display and distribute NAS EA information;

• Development of evolution and transition strategies of the NAS EA; and

• Identifying and assessing NextGen capability alternatives and concepts that address JPDO system issues, shortfalls, technological defects, risks, and other issues.

C.3.14   Technology Opportunities Support

As tasked, the Contractor must support activities associated with new technological opportunities. This includes but is not limited to, identifying, quantifying, and keeping abreast of potential technological opportunities for supporting the NAS services. This includes being cognizant of existing Commercial-Off-The-Shelf (COTS) hardware/software systems, emerging technologies, and the potential for technology transfer of research outcomes to enable the FAA to continue to perform its mission in a safe, efficient, and cost effective manner.

C.3.15   Test Resources

As tasked, the Contractor must support the following activities: planning and/or performing tests and evaluations; developing and testing prototype; providing test equipment; providing simulation and modeling software/tools; and providing test support resources. This includes but is not limited to:

• Generation of operational & development testing;

• Test plans, test procedures, test analysis, and test reports;

• Prototype testing and demonstration;

• Concept feasibility & evaluation, alternative analysis;

• Operational Capability Demonstration (OCD) & Operational Capability Test (OCT);

• First Article Testing (FAT), Physical/Functional Configuration Audits (PCAs/FCAs);

- Test and Evaluation (T&E), Independent/Operational Test and Evaluation (I/OT&E).

This support is for Verification and Validation (V&V) engineering during the Investment Analysis and Solution Implementation phases of the AMS Lifecycle Management Policy.

C.3.16   Laboratory Facilities

As tasked, the Contractor must support FAA System Engineering activities, which include but are not limited to planning, designing, documenting, operating and maintaining laboratory facilities (e.g., William J. Hughes Technical Center (WJHTC) labs, Florida Test Bed (FTB) lab, and NASA NextGen CNS Testbed lab).

C.3.17   Investment Portfolio Management

As tasked, the Contractor must support efforts to optimize the FAA's investment portfolio. The Investment Decision Authority (IDA) and its subordinate review boards evaluate new investment opportunities for inclusion in a service portfolio, on-going investment programs within the portfolio, and the efficiency and effectiveness of operational portfolio assets that include, but are not limited to, the following:

- Investment Selection;

- Investment Control; and

- Operational Evaluation.

C.3.18   Lifecycle, Earned Investment and Business Case Analyses

As tasked, the Contractor must support a full range of investment analysis activities that include, but are not limited to, the following:

- Business Case Development and Integration;

- Lifecycle Cost Estimation;

- Operations Research and Benefits Estimation; and

- Policy, Standards, Training and Special Studies.

C.3.19   Forecasting and Strategy Development

As tasked, the Contractor must support quantitative analysis through the use of simulations, models, tools, forecasts, and other analytical techniques. Support may include, but is not limited to, the following areas:

- System and Service Delivery Point (SDP) forecasts;

- Scenario forecasting;

- Trend analysis;

- Metrics development;

- Operational impact analysis;

- Operations planning analysis;

- FAA/industry/academia coordination;

- Business Outlook;

- Business Plan interface;

- Strengths, weaknesses, opportunities, and threats (SWOT) analysis;

- Business Trends & updates;

- Modeling, simulation & analysis;

- Strategy position papers;

- Strategic analysis briefings; and

- Updates of FAA Strategy.

C.3.20   Business Planning

As tasked, the Contractor must support the analysis, formulation, documentation, and maintenance of business plans. Support may include, but is not limited to, the following:

- Preparation, production, and maintenance of the ATO Business Plan; and

- ATO strategic management process and ATO business planning analysis.

C.3.21   Performance Analysis

As tasked, the Contractor must support the planning, development and evaluation of FAA and broader NextGen performance measurement activities (facility level and system wide). This support may include, but is not limited to, the following:

- Internal and external education and coordination of performance measures (including definitions and methodology);

• Accuracy of data collection and analysis;

• Implementation of new metrics;

• Alignment of metrics to DOT and FAA measures and goals (e.g., Strategy 2013 objectives) and broader NextGen goals;

• Selection of Critical-To-Quality (CTQ) measures;

• Identifying Key Performance Indicators (KPIs);

• Assessing the system/process stability and capability of the FAA service;

• Modeling support; and

• Technical and analytical support for planning, development, and evaluation of metrics.

C.3.22   Reserved

C.3.23   Policy Studies

As tasked, the Contractor must support and perform policy studies, which includes but is not limited to analysis of policy and organizational issues inherent in the NextGen transformation, development of alternatives, analysis of trade-offs between competing goals, analysis of constraints, stakeholder analysis, and conflict identification and resolution.

C.3.24   Program Planning and Financial Management

As tasked, the Contractor must provide services to support FAA financial management and planning activities, which may include, but are not limited to, the following:

• Corporate Work Plan (CWP);

• Capitalization and Audit Functions;

• Interagency Agreement Support;

• Capital Investment Team (CIT);

• Budget and Financial Planning and Analysis;

• Acquisition Baseline Management;

• Cost Analysis and Accounting; and

• Agency Plan Development (e.g. National Aviation Research Plan (NARP), Capital Investment Plan (CIP) and other agency plans).

C.3.25   Program Management Support

As tasked, the Contractor must provide support for FAA program activities associated with business and administrative planning, organizing, directing, coordination, controlling, and approval actions designed to accomplish overall program objectives. These may include, but are not limited to, the following:

• Program/project planning, scheduling, and tracking;

• Portfolio management;

• Developing OMB 300 artifacts;

• Risk identification and mitigation planning; and

• Developing and maintaining technical and financial program baselines.

C.3.26   Program Management System Tools

(a) The FAA uses a number of automated program management tools that may require operational, maintenance and automation support. These program management tools are currently primarily ORACLE and web-based applications.

(b) As tasked, the Contractor must provide support to maintain, host, and update FAA Program Management Tools that include, but are not limited to, the following:

• Regional Information System (REGIS) – Provides "cuff records" for financial management for the Operations (OPS) appropriation;

• Corporate Work Plan (CWP) – Supports prioritization, planning and scheduling for systems deployment, implementation and capitalization;

• Financial Management System (FMS) – Provides procurement tracking, and budget execution for the facilities and equipment (F&E) appropriation;

• Research, Engineering and Development Acquisition and Management System (REDMACS) – Provides full financial and personnel management for the R,E&D appropriation;

• Budget Execution Tool (BET) – Provides budget allocation planning and execution for the OPS appropriation;

• Standard Automating Processing System (SAPS) – Staffing and personnel management;

• Personnel Compensation and Benefits Model (PCB Model) – Provides detailed salary forecasting capability for budget formulation under various staffing assumptions;

• Simplified Program Information, Reporting and Evaluation (SPIRE) – Provides F&E budget formulation, project baseline management and performance tracking, RPDs, and monthly reporting of ATO progress supporting flight plan goals;

• Cost Accounting System (CAS) – Supports analysis of business rules for the cost allocation process and develops recommendations for system enhancements to improve the usability of cost reports for management decision making; and

• Reimbursable Toolset – Supports development, maintenance, and enhancement of automated systems, tools and processes required to meet requirements for reimbursable funds control and management reporting.

C.3.27   Information Systems Development and Maintenance

As tasked, the Contractor must provide information technologies support that includes, but is not limited to, the following:

• Providing database design, development, operation and maintenance;

• Evaluating computer and communication security;

• Designing, developing and maintaining specified web sites;

• Providing multi-media, graphic design, and implementation; and

• Hosting, maintaining, and upgrading commercial and FAA developed automated applications and models.

C.3.28   Training

As tasked, the Contractor must design, develop and provide training that includes, but is not limited to, the following:

• Automated systems, applications and models utilization;

• Investment Analysis;

• Financial system utilization; and

• Procedural and policy implementation.

C.3.29   Business Process Re-engineering (BPR)

(a) Business Process Re-engineering (BPR) is a process improvement initiative intended to identify inefficiencies and duplication of activities within an organization's mission to reduce overall operational costs. It also establishes strategic business relationships with industry,

national and international government agencies, and global air navigation service providers (ANSPs) that leverage FAA core competencies to promote global cost effectiveness and operational efficiency.

(b) As tasked, the Contractor must support Business Process Re-engineering activities that include, but are not limited to, the following:

• Defining and benchmarking an organization's mission and business processes;

• Identifying process inefficiencies in meeting organizational missions;

• Identifying cost and operational efficiencies;

• Recommending changes to core business processes;

• Developing workforce and automation tools; and

• Developing plans, costs, models and schedules for recommended changes or tool development.

C.3.30   Cybersecurity

As tasked, the Contractor must support efforts to address cybersecurity risks, in accordance with the Presidential Executive Order (EO) 13636 and the NIST Cybersecurity Framework (e.g., Framework Core Functions: Identify , Protect, Detect, Respond, Recover). This support includes, but is not limited to, the performance of information security, network security, and information assurance to protect information systems and information infrastructure along with the sensitive data they contain from unauthorized access, use, disclosure, disruption, modification, or destruction from threats that can impact confidentiality, integrity, and availability of the information, information technology services, and communications.

C.3.31   Software Engineering

As tasked, the Contractor must support efforts in all aspects of software (SW) engineering throughout all phases of the Software Engineering Lifecycle involving the design, development, testing, maintenance of software and related software activities. This support must include, but is not limited to:

• SW documentation development & reviews;

• SW requirements development & analysis;

• SW specification development & compliance assessments;

- SW development cost estimates & assessments;

- monitor coding & unit/string testing;

- monitor software unit integration & testing;

- SW verification & validation;

- SW configuration management monitoring;

- SW transition planning;

- analysis & metric generation for Program Technical Reports;

- SW Independent Verification & Validation (IV&V);

- SW maintenance support; and

- algorithm evaluation.

C.3.32   Verification & Validation (V&V) Program

As tasked, the Contractor must support all V&V activities required during procurement, production, receipt, storage, and issue that are necessary to develop the solution in accordance with identified standards and specifications. This includes, but is not limited to, the following:

- Activities associated with planning, establishing procedures, evaluating and testing;
- Validation of analyses activities to provide the required level of fidelity and accuracy in a timely manner;
- An Analysis Management Plan that outlines the details of the various analysis methods and tools is either generated or incorporated into the program plan; and
- Validation and Verification (V&V) activities to support a determination that the system and process requirements are correct, have been met, and that the system is ready for use in the operational environment for which it is intended (i.e., that the system requirements are unambiguous, correct, complete, consistent, operationally and technically feasible, and verifiable).

There are two categories of verification: test and assessment. Test is the disciplined and controlled subjection of the system requirements to conditions that replicate operations in a real or simulated action. Assessment includes analysis, demonstration, inspection, and verification by similarity, validation of records, simulation, and review of design documentation.