Performance Work Statement

Intelligence Support

National Air and Space Intelligence Center

Wright-Patterson Air Force Base, Ohio

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[5.1 **Air**. The contractor shall perform scientific and technical analysis in the following areas: Air Systems; Integrated Air Defense Systems (IADS); Air Ordinance and Cruise Missiles; Air and Missile Defense Surveillance Systems. This includes analysis of associated Cyberspace capabilities, dependencies, and vulnerabilities. 10](#_Toc522257478)

[5.1.1 **Air Systems.** The contractor shall provide analysis of current and future technical characteristics and capabilities of foreign military and dual-use civilian systems including fighters, bombers, special mission aircraft and UAVs (to include weapons, platforms, sensors, and countermeasures) in development or operation and the actual lethal effect when employed against U.S. and allied forces. 10](#_Toc522257479)

[5.1.2 **Integrated Air Defense Systems (IADS).** The contractor shall perform analysis of technical characteristics, capabilities, performance, limitations, combat effectiveness, and vulnerabilities, of a countries ability to operate its IADS in both peacetime and wartime situations. 12](#_Toc522257480)

[5.1.3 **Air Ordinance and Cruise Missiles**. The contractor shall perform analysis of technical characteristics, signatures, capabilities, performance, limitations, combat effectiveness, vulnerabilities, and proliferation of air-to-air and air-to-surface ordinance, air-launched ballistic missiles, cruise missiles (all types including anti-ship, ground-launched ground attack, nuclear and conventional) and any associated electronic devises and technologies. 12](#_Toc522257481)

[5.1.4 **Air and Missile Defense Surveillance Systems (Ground-based and Airborne Electronic Systems).** The contractor shall perform analysis of technical characteristics, signatures, capabilities, performance, limitations, combat effectiveness, vulnerabilities, and proliferation of land-based radar equipment including air defense early warning; SAM-associated radars with a primary function of target acquisition/air surveillance/early warning; ballistic missile early warning/over the horizon, navigation, air traffic control, and ground-controlled and air-controlled intercept radars; materials; data links associated with these systems. 12](#_Toc522257482)

[5.2 **Cyberspace**. The contractor shall perform scientific and technical analysis in the following areas: actual or potential application of foreign Cyberspace threats to U.S. and allied air and space operations and associated combat support systems, networks, data, and forces including foreign Cyberspace R&D, capabilities, actors, doctrine, tactics, techniques, procedures, strategy, employment (current and future), and dependencies that threaten U.S. and allied air and space operations. 13](#_Toc522257483)

[5.2.1 **Cyberspace Operations Analysis.** The contractor shall assess the characteristics, capabilities, and vulnerabilities of foreign military air, air defense, Counterspace, and space command and control processes, information systems and networks of systems and telecommunications and computer networks whether wired or wireless, ground, air, or space-based; assess how they are used to enable foreign military operations and terrorist activities. 13](#_Toc522257484)

[5.2.2 **Information Operations Analysis.** The contractor shall analyze assess the capabilities and limitations of foreign information operations (IO) activities to help NASIC assess the foreign IO threat to US information and satellite systems operations, and mission. 13](#_Toc522257485)

[5.2.3 **System Vulnerability Analysis.** The contractor shall analyze assess the characteristics, capabilities, and vulnerabilities of foreign weapons, air, space, and Supervisory Control and Data Acquisition (SCADA) systems and networks in addition to analyzing Cyberspace threat to U.S. weapons, air, space, and SCADA systems. 13](#_Toc522257486)

[5.2.4 **Malicious Software Analysis.** The contractor shall analyze assess characteristics, capabilities, and limitations of malicious software as well as of techniques and implants to tamper with computer hardware. The contractor shall design, implement, and maintain modeling, simulation, database, and training tools. 13](#_Toc522257487)

[5.3 **Space and Counterspace.** The contractor shall perform scientific and technical analysis in the following areas: Space and Counterspace Systems; Modeling and Tool Development; Advanced technologies; Anti-Satellite Capability; NAVWAR Assessments. Includes analysis of associated Cyberspace capabilities, dependencies, and vulnerabilities. 13](#_Toc522257488)

[5.3.1 **Space and Counterspace Systems.** The contractor shall analyze technical characteristics, performance, signatures, capabilities, limitations, effectiveness, vulnerabilities (including Cyberspace, electronic warfare, and information operations) and employment of all systems (current and projected military, civil, and scientific systems and support systems), sensors, facilities, and hardware normally considered part of current and projected space/Counterspace platforms, programs, networks and support systems and associated C4I systems. 14](#_Toc522257489)

[5.3.2 **Space and Counterspace Modeling and Analysis Tool Development.** The contractor shall develop or modify software tools and shall provide training, both oral and written, on the software programs. 15](#_Toc522257490)

[5.3.3 **Advanced Space and Counterspace Technologies.** The contractor shall analyze emerging space technologies that have impacts on space development and operational systems. 16](#_Toc522257491)

[5.3.4 **Anti-Satellite (ASAT) Analysis.** The contractor shall provide assessments of foreign countries' and NGOs’ abilities to interfere with satellites and satellite links (command, control, and data). Assessments shall include capabilities and limitations of individual systems and networks of systems. 17](#_Toc522257492)

[5.3.5 **Integrated NAVWAR Assessments**. The contractor shall assess GPS and space-based PNT integration into threat weapons potentially used against U.S. and allied forces, and encompasses associated doctrine, tactics, and employment. 17](#_Toc522257493)

[5.4 **Ballistic Missiles.** The contractor shall perform scientific and technical analysis of foreign ballistic missile systems in the following areas: detailed external configuration; location and performance of internal components, technologies, and other subsystems; construction techniques and materials; guidance and control systems; propulsion systems; reentry systems, countermeasures, and ground support equipment. 17](#_Toc522257494)

[5.4.1 **Ballistic Missile Systems.** The contractor shall perform analysis including static and dynamic characteristics of the weapon system (i.e., including the evaluation of operational capability, reliability, maintainability, survivability, vulnerabilities, proliferation of critical components, technology, production capability, specialty materials, or expertise to countries or groups hostile to the U.S. national security interests. Includes analysis of associated Cyberspace capabilities, dependencies, and vulnerabilities. 17](#_Toc522257495)

[5.4.2 **Ballistic Missile System Analysis.** The contractor shall analyze data from intelligence sources such as SIGINT (signals intelligence), GEOINT (imagery), ELINT (electronics), RADINT (radar), HUMINT (human), foreign materiel exploitation, and open sources to assess the capabilities, performance, vulnerabilities, and anomalous activities of foreign ballistic missiles and associated systems and subsystems. 17](#_Toc522257496)

[5.4.3 **Ballistic Missile Sub-System Analysis.** The contractor shall perform engineering analysis on current and projected foreign ballistic missile systems and subsystems. The analysis shall address engineering designs, performance assessments, airframe, propulsion, guidance and control, reentry vehicles, warheads, countermeasures, and penetration aids 18](#_Toc522257497)

[5.4.4 **Projected Ballistic Missile Systems.** The contractor shall provide analysis of project foreign ballistic missile system capabilities, performance, and vulnerabilities, for a period of at least 20 years into the future, including assessment of operational needs/deficiencies; analysis of doctrine and doctrinal requirements; assessment of technological capabilities to support requirements, including identification of plants, factories, institutes, and personalities that are related to specific enabling technologies; assessment of sources or recipients of technology transfer; development of feasible conceptual designs that could fulfill mission requirements; and estimates of probable deployment dates. 18](#_Toc522257498)

[5.4.5 **Ballistic Missile System Signatures.** The contractor shall analyze, and/or analytically derive, signatures (visible, ultraviolet, IR, radar, etc.) of foreign ballistic missiles and associated subsystems. 18](#_Toc522257499)

[5.4.6 **Ballistic Missile System Operational Analysis.** The contractor shall assess the operational effectiveness of foreign ballistic missile weapon systems. The contractor shall evaluate the weapon as a completely integrated system combining the ballistic missile, ground support equipment, deployment facilities, command/control/communications, and signature information with country-specific associated doctrine and tactics. The contractor shall develop and modify computer code, threat models, and threat visualizations to reflect overall system performance characteristics. 18](#_Toc522257500)

[5.4.7 **Ballistic Missile Flight Models.** The contractor shall conduct and document foreign ballistic missile flight simulation analysis to include missile trajectory modeling, attack simulation, and attack scenarios. 18](#_Toc522257501)

[5.4.8 **Ballistic Missile Vulnerabilities.** The contractor shall analyze foreign ballistic missile vulnerability and hardening to lasers (IR to X-ray wavelengths), particle beam weapons (neutral and charged), and kinetic energy weapons. 18](#_Toc522257502)

[5.4.9 **Ballistic Missile Analytic Methodology and Tools.** The contractor shall review, analyze, propose, and create ballistic missile analytic methodologies that improve on the techniques currently used to evaluate technical intelligence data and perform engineering analysis. Methodologies shall emphasize new approaches that provide increased analytical detail and accuracy. The contractor shall evaluate and/or modify current analytical tools and modeling software and create new analytical tools as required. 18](#_Toc522257503)

[5.5 **Forces, Technology, and Infrastructure.** The contractor shall provide scientific and technical analysis and assessment of current and future foreign services capabilities and technologies and infrastructure (operational C4ISR, air, air defense, and ballistic missiles) including analysis of capabilities of civil air organizations to support military operations, in leadership; strategy; doctrine; intent; operational art; tactics, techniques, and procedures, training curriculums; readiness systems; training doctrine, and threat perceptions. Includes analysis of associated Cyberspace capabilities, dependencies, and vulnerabilities. 18](#_Toc522257504)

[5.5.1 **General Threat Technology Assessments/Forecasts.** The contractor shall provide engineering and scientific assessments and forecasts in the area of technologies and their military impact on current and future air, ballistic missile, Counterspace, and space system, subsystem, and component capabilities, performance, and vulnerabilities. 19](#_Toc522257505)

[5.5.2 **Technology Transfer & Proliferation Assessments/Forecasts.** The contractor shall provide assessments and long-range forecasts in the areas of technology transfer and its military impact, ability of recipient countries to assimilate transferred technology, and proliferation of weapons of mass destruction and/or their delivery systems. 19](#_Toc522257506)

[5.5.3 **Denial and Deception Analysis.** The contractor shall assess the denial and deception strategy, doctrine, operational art, organization, leadership, personnel, tactics, techniques, procedures and systems of foreign air and space forces. Assessments shall include but not be limited to technical analysis of denial and deception systems (decoys, camouflage netting, coatings, and other devices); operational analysis of employment of denial and deception at the tactical, operational and strategic levels; and predictive analysis of future denial & deception capabilities. 19](#_Toc522257507)

[5.5.4 **Infrastructure Assessments.** The contractor shall perform analysis of service infrastructure, service modernization, service readiness, and service sustainability including assessments of the composition, demographics, disposition, logistics, strength, vulnerabilities, training status, tactics, combat effectiveness, mobilization, employment of forces, and other relevant information concerning the personnel, units, facilities, and equipment. 20](#_Toc522257508)

[5.5.5 **Operational Threat Environment**. The contractor shall assess, analyze, and document the current, projected, and reactive operational environment. 21](#_Toc522257509)

[5.5.6 **Regional Air and Space Forces Analysis.** The contractor shall assess the force structure, composition, leadership, personnel, strategy, doctrine, operational art, and tactics of foreign air and space forces and other organizations of interest, with emphasis on the integrated and synergistic employment of air, space and information capabilities to achieve strategic, operational and tactical effects. Analysis shall focus on current capability and predicting future capability up to 20 years in the future. In particular, provide assessments of military training and exercises, of air, space and missile forces, to include Information operations (electronic warfare, counter-space, cyber, etc.), in order to provide insight into intent and capabilities of the force. 21](#_Toc522257510)

[5.5.7 **Integrated Threat.** The contractor shall assess, analyze, and document the current, projected, and reactive integrated threat, that is, the synergy of threat targets, system specific threats, and the operational threat environment that defines the complete war fighting capability of an adversary. 22](#_Toc522257511)

[5.6 **Open Source Intelligence (OSINT.)** The contractor shall collect, process (to include translation of foreign language where applicable), exploit, and disseminate primarily foreign open source information and Open Source Intelligence (OSINT) analysis to support the NASIC all-source mission and the broader Intelligence Community. 22](#_Toc522257512)

[5.7 **Human Intelligence (HUMINT.)** The contractor shall collect HUMINT information and support HUMINT collection to support the HUMINT missions of NASIC, Air Force, and the Intelligence Community. Specialized HUMINT collection qualifications may be required. 22](#_Toc522257513)

[5.8 **Analyst Training.** The contractor shall cultivate and exercise relationships with NASIC training personnel to maximize the benefits from existing NASIC opportunities. The contractor shall document and report the relevant findings. 22](#_Toc522257514)

[5.9 **SIGINT.** The contractor shall perform SIGINT data analysis, data processing, data management, analytic techniques development and implementation, IT management, IT and specialized hardware acquisition, system engineering, system integration and training development as they relate to SIGINT analysis. 23](#_Toc522257515)

[5.9.1 **System Engineering and Integration.** Tasks of this type shall require the contractor to develop, procure, and deliver hardware/software system, system upgrade or system components to meet defined performance criteria. The resulting hardware/software shall be used to process, analyze, exploit and report on collected data. 23](#_Toc522257516)

[5.9.2 **System Support.** Tasks of this type shall require the contractor to operate, maintain, update, modify, expand, document, or analyze a SIGINT system or systems. Performance of these tasks may require the contractor to update, modify, or expand the NASIC SIGINT system in question by adding, removing or updating hardware, software or firmware or by modifying the configuration of the system or its components. The contractor shall perform the following: 23](#_Toc522257517)

[5.9.3 **SIGINT Techniques Implementation.** Tasks of this type shall require the contractor to implement a new or improved analytic, processing, or training function. The deliverable for these efforts shall most commonly be a software routine or training module, but could also include hardware, analysis of a process or algorithm, or a study. 24](#_Toc522257518)

[5.9.4 **SIGINT Analysis.** Tasks of this type shall require the contractor to perform or support SIGINT analysis. Analysis duties may include finding, ordering, loading, screening, processing, analysis, and reporting of SIGINT data; consultation with government or contractor SIGINT analysts; and presentation of the results of analysis or a topic area with material bearing on SIGINT data analysis. 24](#_Toc522257519)

[5.9.5 **NASIC Data Management System (NDMS) Upgrades and Enhancements.** The contractor shall upgrades and enhance the NASIC Data Management System (NDMS) to provide long-term storage and management capabilities for specialized signals and data sets. The contractor shall automate data management processes, improve interfaces with NASIC and national databases and systems used for management, tracking, identifying, transmitting, cataloging, and storing of signals data. The contractor shall implement hardware and software system improvements and expansion to the existing storage sub-systems and data management to facilitate growing mission, access to new data sets, improve access speeds, and reduce system administration overhead burden and maintenance costs. 24](#_Toc522257520)

[5.10 **Intelligence Mission Data.** The scope of the work involves all aspects of IMD and FMS support to include (but not limited to): data research and acquisition, critical analysis, expert assessment, and subsequent system file creation, support for training, mentoring and collaborating with analysts from NASIC and other production center partners and users across the IMD and FMS communities to ensure consistency of standards and production methodology to the extent possible remains a critical requirement. The contractor shall make their expertise available to MSIC, NASIC, NGIC, and ONI and other user/producers (as directed) who are generating similar products for IMD and EWIRDB FMS missions. 25](#_Toc522257521)

[5.10.1 **Support.** The contractor shall provide mentoring, technical expertise, and analytic support for standardized product generation by NASIC analysts. 25](#_Toc522257522)

[5.10.2 **Production.** The contractor shall perform research, data acquisition, and technical analysis to provide SAVANT compliant product initialization and/or updates on specified systems as directed by the government technical representative or Technical Monitor (TM). The contractor shall be knowledgeable of the primary tools anticipated for usage under this task (i.e. SAVANT, MARTES, CED, KPS, JADE, and the Opana suite of tools). 25](#_Toc522257523)

[5.10.3 **Training and Familiarization.** The contractor shall perform research, data acquisition, and technical analysis to provide SAVANT compliant product initialization and/or updates on specified systems as directed by the government technical representative or Technical Monitor (TM). The contractor shall be knowledgeable of the primary tools anticipated for usage under this task (i.e. SAVANT, MARTES, CED, KPS, JADE, and the Opana suite of tools). 25](#_Toc522257524)

[5.10.4 **Analytic Tools and Utilities: Maintenance and Upgrades.** The contractor shall review, report defects, recommend and create enhancements to existing applicable SAVANT compliant software tools and utilities as directed by the appropriate government technical representative or TM. The contractor shall accompany all recommended enhancements with an appropriate white paper write-up and a ROM cost estimate to the appropriate government TM. No software development shall initiate prior to government acceptance. Software upgrades shall be fully SAVANT compliant with sufficient regression testing to ensure continued compatibility across functional areas. No software development shall create U.S. dependencies on foreign s/w development architectures or utilities without the written approval from the Contracting Officer. 26](#_Toc522257525)

[5.10.5 **Utility Development.** The contractor shall develop and/or test applicable SAVANT compliant software tools and utilities as identified by the appropriate government technical representative or TM. The contractor shall accompany all recommended enhancements with an appropriate white paper write-up and a ROM cost estimate to the appropriate government technical representative. No software development shall initiate prior to government acceptance. No software development shall create U.S. dependencies on foreign s/w development architectures or utilities without the written approval from the Contracting Officer. 26](#_Toc522257526)

[5.10.6 **Foreign Military Sales Analysis Production and Support.** The contractor shall perform technical analysis and review on selected EWIRDB emitter systems as identified by the FMS technical representative or TM. The analysis shall be used as the basis for updates and/or initializations to casework associated with the Foreign Military Sales EWIRDB “Direct”, “Indirect”, and/or MOU customers. 26](#_Toc522257527)

[5.10.7 **7.2 Engineering and Analysis for SERF-based EWIRDB Production.** The contractor shall ensure their analysis practice meets the following guidelines unless otherwise directed in subsequent Task Order: 27](#_Toc522257528)

[5.10.8 **7.3 Engineering and Analysis for AFMSS/CSDB Production.** The contractor shall ensure their analysis practice meets the following guidelines unless otherwise directed in subsequent Task Orders: 29](#_Toc522257529)

[5.10.9 **7.4 Engineering and Analysis for Observed ELINT Data Production.** The contractor shall provide observed ELINT data production on-site at the National Air & Space Intelligence Center. 31](#_Toc522257530)

[5.10.10 **7.5 Engineering and Analysis for Combat/Combat Support Aircraft Production.** The contractor shall perform technical information research, provide expert technical assessment, and accomplish documentation on combat/combat support aircraft data in support of baseline IMD requirements. In addition to an IMD baseline, production data supports Air Force Mission Support System/Combat Support Database (AFMSS/CSDB), and Military Equipment Parametric and Engineering Database (MEPED) mission requirements. 31](#_Toc522257531)

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1. BACKGROUND
   1. These requirements are currently satisfied under GSA Blanket Purchase Agreements: **ID05140109**, GS05Q15BMA0015, Counterspace Analysis Support Program II (CASP II); **ID05140125**, GS05Q15BMA0030, HAVESTAR VII; **ID05150022**, GS05Q15BMA0021, GS05Q15BMA0022, Foreign Air, Space and Technologies IV (FAST IV); **ID05150001**, GS05Q15BMA0013, Intelligence Mission Data (IMD); **IDO5160031,** GS05Q17BMA0005, GS05Q17BMA0006, SIGINT Engineering Support Services III (SESS III.)
2. SCOPE OF WORK /OBJECTIVE
   1. The purpose of these requirements are to perform scientific and technical intelligence analysis supporting NASIC, Air Force, Department of Defense and National Level intelligence efforts. The mission areas supported under this PWS are: Air; Cyberspace; Space and Counterspace; Ballistic Missiles; Forces, Technologies and Infrastructures; OSINT; HUMINT; IMD; SIGINT; Training.
   2. Work performed will include obtaining data; performing technical analysis; developing assessments, evaluations, and predictions of capabilities; designing and assessing current, developmental and projected threat systems; providing reports related to worldwide developments; creating integrated, predictive IMD products; host, update, and disseminate EWIRDB for U.S and FMS partners.
   3. The analysis and evaluation of capabilities, performance, and vulnerabilities is based upon analysis of all available and relevant intelligence information, "all source" intelligence information, and will be used to support evaluations, assessments and long-range forecasts of foreign developments.
   4. The number and depth of specialized areas of these analyses require specialists of exceptionally high competence in the areas of military systems, operations, and trained to recognize subtleties in foreign developments which may directly impact current and future military operations and weapons developments.
   5. These requirements support the creation, evaluation and analysis of intelligence data on foreign developments in current and future weapon systems, subsystems, and technologies impacting Air, Space, Cyberspace, Missiles, Information Operations and other new initiatives.
   6. These requirements develop and maintain analytic tools, techniques, and knowledge databases consistent with NASIC corporate strategies where applicable which include the Threat Modeling and Analysis Program (TMAP) and the Knowledge Prepositioning System (KPS) used in performing and delivery of detailed analysis of air and space forces, Counterspace, information operations systems, subsystems and associated C4.
   7. These requirements provide a well-rounded team of intelligence professionals capable of meeting the challenges posed by foreign developments, increased analytical technical expertise across all aspects of the NASIC mission, cultivate a collaborative environment across the intelligence and DoD communities, develop and exercise relationships within NASIC and with external organizations to enhance understanding of capabilities, processes, and requirements, and develop and sustain effective Knowledge Management tools and processes.
3. APPLICABLE DOCUMENTS
   1. Applicable documents shall be determined on an individual Task Order basis (TO).
   2. S/W Standards for will be noted in the appendices to this PWS.
4. PROJECT MANAGEMENT
   1. The contractor shall provide a Program Manager to provide total contract management. For each task order, the contractor shall provide a Project Manager to provide total task management. The Program Manager shall serve as the primary point of contact to the Government contracting officer for all technical aspects of the required work.
   2. The contractor shall provide all labor, facilities, and non-Government Furnished Equipment (non-GFE) to successfully complete all requirements. The contractor shall provide the necessary resources to plan, implement, and manage the tasks set forth below either on-site or off-site as required in each individual Task Order to the extent provided by the available man-hours.
   3. Project Management Plan. The contractor shall create and maintain a Project Management plan for each order. The Project Management Plan shall describe, as a minimum, the resources necessary to accomplish the PWS. The Project Management Plan shall be completed and certified by the contractor, the CR, and the GSA Contracting Officer (CO) within 30 calendar days after award of Task Order.
   4. The contractor shall provide up-to-date status, individually for each Task Order with an active period of performance, through Monthly Status/Financial Reports. Monthly Status/Financial Reports shall be unclassified and shall include details on the following items for each previous time period: (1) Best up-to-date estimate of hours worked and expected charges, including those of subcontractors; (2) status of work performance; (3) any problems or concerns encountered that may impact cost or schedule; (4) status of open items from previous reports; (5) any suggested solutions; (6) personnel changes; (7) proposed government actions; (8) a summary chart of the current financial status on all CLINs (labor, ODCs/travel, material).
   5. The contractor shall provide up-to-date status, individually for each Task Order with an active period of performance, through quarterly Program Management Reviews (PMRs). The contractor’s program manager shall be required to present oral program reviews as requested by the NASIC CR or TM.
   6. Prepare written documentation on the results of tasking to include verbal and written comments, informational memorandums and letters, meeting minutes, specialized technical reports and papers, and final report and studies as defined in individual Task Orders. Present briefings on government selected studies, models, or analyses associated with task efforts to various intelligence organizations, committees, or panels as defined in the individual Task Orders by the government. The contractor shall prepare and present the briefings to the government appointed experts prior to the actual presentation, to ensure content accuracy and that security considerations are properly addressed and followed.
   7. Maintain a complete listing of classified material issued by the government and maintained at the contractor’s facility in performance of this contract to include, the title of the material; the origination date; the overall classification; the type of material (i.e. report, electronic media, etc.); the number of copies held; and any other information necessary to identify the inventory. The contractor shall obtain written approval by the CR prior to the release of any classified material. The contractor shall provide the CR with a destruction certificate for all classified material that is destroyed.
5. REQUIREMENTS
   1. **Air**. The contractor shall perform scientific and technical analysis in the following areas: Air Systems; Integrated Air Defense Systems (IADS); Air Ordinance and Cruise Missiles; Air and Missile Defense Surveillance Systems. This includes analysis of associated Cyberspace capabilities, dependencies, and vulnerabilities.
      1. **Air Systems.** The contractor shall provide analysis of current and future technical characteristics and capabilities of foreign military and dual-use civilian systems including fighters, bombers, special mission aircraft and UAVs (to include weapons, platforms, sensors, and countermeasures) in development or operation and the actual lethal effect when employed against U.S. and allied forces.
         1. **Air System Analysis.** The contractor shall analyze data from intelligence sources, such as SIGINT (signals intelligence), GEOINT (imagery), ELINT (electronic), MASINT (measures and signatures), HUMINT (human), foreign materiel exploitation and open sources to assess the capabilities, performance, vulnerabilities, and anomalous activities of foreign air weapons and associated systems and subsystems.
         2. **Air System Sub-System Analysis.** The contractor shall analyze subsystem development and use of electronic devises and technologies, including navigation, avionics, communications, flight controls, controls and displays, airborne computers, and their associated interconnecting systems; air-based directed energy weapons, including lasers, radiofrequency, and high-power microwave weapons; identification friend or foe (IFF) systems; radar equipment types such as surveillance, navigation, mission and gun fire control; and related electronic warfare systems.
         3. **Air System Design Analysis.** The contractor shall perform analysis of all static and dynamic characteristics of the weapon system (i.e., detailed external configuration; location and performance of internal avionics, electronics, antennas, and other subsystems; construction techniques and materials; flight control; flying/handling qualities; propulsion systems; armament, etc.).
         4. **Air System Development Analysis.** The contractor shall analyze design, fabrication, and wind tunnel testing of air system and system component models to define the aerodynamics associated with the vehicle over the expected flight regime. The contractor shall evaluate combat capability, reliability, maintainability, and survivability.
         5. **Air Vehicle Signatures Analysis.** The contractor shall collect and analyze, and/or analytically derive, signatures (visible, ultraviolet, IR, radar, etc.) of foreign air vehicles and associated subsystems.
         6. **Air System Engagement Analysis.** The contractor shall conduct scientific and technical analysis and assessments of foreign military systems capabilities, strengths, vulnerabilities (including Cyberspace, electronic warfare, and information operations), associated technologies, associated C4I systems, and operations of systems. The contractor shall assess the combat effectiveness of threat aircraft weapon systems. The contractor shall evaluate the aircraft as a completely integrated system combining the airframe, weapons, radars, avionics, electronics, command and control, communications, fire-control and signature information. The contractor shall analyze include man-in-the-loop simulation assessment techniques.
         7. **Air Weapon Systems - Detailed Characterization.** The contractor shall perform in-depth analysis of foreign air weapon subsystem characteristics and performance based on foreign hardware or extensive foreign technical documentation. The contractor shall integrate analysis results into total system capability assessments. The contractor shall analyze and determine the function of air weapon components and subsystems such as avionics, seekers, guidance systems, propulsion systems, signature control systems, materials, etc. The contractor shall assess these components and subsystems both individually and as a part of the overall air weapon system.
         8. **Air Vehicle Analytic Methodology and Tools.** The contractor shall analyze and create aerodynamic vehicle analytic methodologies that shall improve on the techniques currently used to evaluate technical intelligence data and perform engineering analysis. Methodologies shall emphasize new approaches that provide increased analytical detail and accuracy. The contractor shall evaluate and/or modify current analytical tools and modeling software and develop new analytical tools as required.
         9. **Air Weapon System Modeling.** The contractor shall perform modeling/digital simulation in the area of aerodynamic weapon systems. The contractor Simulation development shall include software development, software verification, data generation, and data verification.
         10. **Air Vehicle Signatures Models.** The contractor shall create, modify and maintain computer code and models used to analyze and derive signatures of foreign air vehicles and associated subsystems.
         11. **Air System Engagement Models.** The contractor shall analyze the combat effectiveness of threat aircraft weapon systems. The contractor shall develop and modify computer code and threat models to reflect system performance characteristics of threat aircraft weapon systems. The contractor shall conduct and document foreign aerodynamic flight simulation analysis to include mission planning, flight profile modeling, attack simulation, and attack scenarios.
      2. **Integrated Air Defense Systems (IADS).** The contractor shall perform analysis of technical characteristics, capabilities, performance, limitations, combat effectiveness, and vulnerabilities, of a countries ability to operate its IADS in both peacetime and wartime situations.
         1. **Integrated Air Defense Systems (IADS).** The contractor shall assess the operational effectiveness of threat IADS including visualizing a completely integrated system combining aircraft, radar, links and nodes, missiles, tactics, doctrine, battle management, and order of battle.
         2. **IADS Systems Analysis.** The contractor shall include system-of-system analysis of current and future capabilities of foreign threat countries to integrate/coordinate/operate their air defense assets (including air surveillance sensors, command, control, and communications and computers systems, and air defense weapon systems) and assessment of the characteristics, strengths, and limitations/exploitable weaknesses of the entire macro-level foreign IADS as a whole.
         3. **IADS Modelling and Simulation.** The contractor shall perform modeling and simulation software development and verification, database management, and enhanced 3D scene visualization capability (includes development of web-based reach-back to NASIC analysis exploiting the KPS database.)
      3. **Air Ordinance and Cruise Missiles**. The contractor shall perform analysis of technical characteristics, signatures, capabilities, performance, limitations, combat effectiveness, vulnerabilities, and proliferation of air-to-air and air-to-surface ordinance, air-launched ballistic missiles, cruise missiles (all types including anti-ship, ground-launched ground attack, nuclear and conventional) and any associated electronic devises and technologies.
         1. **Engineering Analysis.** The contractor shall perform engineering analysis on current and projected foreign air-to-surface missiles, cruise missiles (air, ground, and sea launched), unmanned aerodynamic vehicles (UAVs), and unguided munitions addressing engineering designs, performance assessments, guidance and control, avionics, warhead, and fusing.
      4. **Air and Missile Defense Surveillance Systems (Ground-based and Airborne Electronic Systems).** The contractor shall perform analysis of technical characteristics, signatures, capabilities, performance, limitations, combat effectiveness, vulnerabilities, and proliferation of land-based radar equipment including air defense early warning; SAM-associated radars with a primary function of target acquisition/air surveillance/early warning; ballistic missile early warning/over the horizon, navigation, air traffic control, and ground-controlled and air-controlled intercept radars; materials; data links associated with these systems.
         1. **System Analysis.** The contractor shall provide analysis of current and future foreign ground-based and airborne electronic systems, which include the designs, operational capabilities and limitations, detailed system characteristics, and threat to U.S. systems. The contractor shall provide the expertise to define the design parameters and obtain detailed system performance characteristics on proliferated and developmental foreign electronic systems.
         2. **Electronic and Directed Energy Systems Analysis.** The contractor shall perform research and technical analysis of foreign countries’ electronic and electro-optic systems/subsystems, directed energy weapons, fire control systems, integrated avionics systems, airborne and ground-based radar systems, electronic combat systems, and associated databases and models.
         3. **Electronic Databases.** The contractor shall obtain, analyze, catalog, and maintain parametric data which describes foreign threat radar systems.
         4. **Threat Software Analysis.** The contractor shall supplement, enhance, and improve the quality of NASIC’s threat analysis. The contractor shall provide specialized engineering/ technical analysis expertise to assist NASIC in its role of analyzing foreign software-driven threat systems.
   2. **Cyberspace**. The contractor shall perform scientific and technical analysis in the following areas: actual or potential application of foreign Cyberspace threats to U.S. and allied air and space operations and associated combat support systems, networks, data, and forces including foreign Cyberspace R&D, capabilities, actors, doctrine, tactics, techniques, procedures, strategy, employment (current and future), and dependencies that threaten U.S. and allied air and space operations.
      1. **Cyberspace Operations Analysis.** The contractor shall assess the characteristics, capabilities, and vulnerabilities of foreign military air, air defense, Counterspace, and space command and control processes, information systems and networks of systems and telecommunications and computer networks whether wired or wireless, ground, air, or space-based; assess how they are used to enable foreign military operations and terrorist activities.
      2. **Information Operations Analysis.** The contractor shall analyze assess the capabilities and limitations of foreign information operations (IO) activities to help NASIC assess the foreign IO threat to US information and satellite systems operations, and mission.
      3. **System Vulnerability Analysis.** The contractor shall analyze assess the characteristics, capabilities, and vulnerabilities of foreign weapons, air, space, and Supervisory Control and Data Acquisition (SCADA) systems and networks in addition to analyzing Cyberspace threat to U.S. weapons, air, space, and SCADA systems.
      4. **Malicious Software Analysis.** The contractor shall analyze assess characteristics, capabilities, and limitations of malicious software as well as of techniques and implants to tamper with computer hardware. The contractor shall design, implement, and maintain modeling, simulation, database, and training tools.
   3. **Space and Counterspace.** The contractor shall perform scientific and technical analysis in the following areas: Space and Counterspace Systems; Modeling and Tool Development; Advanced technologies; Anti-Satellite Capability; NAVWAR Assessments. Includes analysis of associated Cyberspace capabilities, dependencies, and vulnerabilities.
      1. **Space and Counterspace Systems.** The contractor shall analyze technical characteristics, performance, signatures, capabilities, limitations, effectiveness, vulnerabilities (including Cyberspace, electronic warfare, and information operations) and employment of all systems (current and projected military, civil, and scientific systems and support systems), sensors, facilities, and hardware normally considered part of current and projected space/Counterspace platforms, programs, networks and support systems and associated C4I systems.
         1. **Space and Counterspace Threat System Analysis.** The contractor shall analyze intelligence data from sources such as SIGINT, GEOINT, MASINT, HUMINT, open sources, and foreign materiel exploitation to assess the characteristics, performance, and vulnerabilities of foreign and Non-Government Organizations (NGO) Space/Counterspace systems and to understand anomalous system behavior.
         2. **Space and Counterspace Threat Systems Detailed Characterization.** The contractor shall analyze foreign and NGO Space/Counterspace and Space/Counterspace support systems and subsystems to determine characteristics and performance based on foreign and NGO hardware and extensive foreign technical documentation including the integration of analysis results into total system capability assessments. The contractor shall analyze and determine the capabilities of Space/Counterspace components and subsystems to include hardware and software intended both for on-orbit and ground applications.
         3. **Spacecraft and Threat Signatures.** The contractor shall collect and analyze, and/or calculate, spacecraft signatures (visible, infrared, radar, ultraviolet, x-ray, gamma). The contractor shall measure and/or assess emissivity and absorbance for satellite surfaces and shall compare calculated signatures to measured signatures, when possible.
         4. **Space System Employment.** The contractor shall provide assessments on foreign countries’ and NGOs’ use of space-based services for ISR, communications, and navigation applications including the use of both indigenous military, civil satellite systems, and space-based services available either commercially or through data sharing agreements. The contractor shall create tools and analytic methodologies to produce assessments of space system employment.
         5. **Space Mission Control.** The contractor shall provide assessments of foreign countries' and NGOs’ current and projected capabilities to identify, track, control, or make use of data from space systems via ground, ocean and space-based platforms. The contractor shall analyze identification and tracking systems including both cooperative and non-cooperative systems and methods to identify spacecraft functions, capabilities, and orbital parameters of both individual spacecraft/equipment and networks of spacecraft/equipment.
         6. **Space Launch Vehicles & Facilities.** The contractor shall perform analysis on foreign space launch vehicle programs to include design and performance characteristics, reliability assessments, worldwide launch market evaluation, and space launch facility design, construction, and operations.
         7. **Space Systems Operations.** The contractor shall provide analysis on command and control of foreign space systems to include the physical, temporal, and hierarchical structure associated with foreign task processing, evaluation, and dissemination (TPED).
         8. **Foreign Cyberspace Threat Analysis Support.** The contractor shall provide support to conduct detailed analysis of foreign Cyberspace threats to space systems and provide engineered assessments of those capabilities.
      2. **Space and Counterspace Modeling and Analysis Tool Development.** The contractor shall develop or modify software tools and shall provide training, both oral and written, on the software programs.
         1. **Space and Counterspace Threat Design and Computer Aided Design (CAD) Computer Modeling.** The contractor shall perform design-level studies and develop highly detailed 3-D geometric computer models of foreign spacecraft and Counterspace capabilities. These studies shall include detailed technical assessments of subsystems (sensors, guidance and control, power, structures, thermal control, etc.). The contractor shall assess all static and dynamic characteristics (i.e., external configuration, layout and location of internal subsystems, antenna and solar panel motion, construction techniques, and materials descriptions). The contractor shall apply engineering judgment consistent with foreign design practice should be used to complete the threat description where intelligence gaps exist. The contractor shall provide models in an industry standard portable format.
         2. **Space and Counterspace Threat Design and Functional Modeling.** The contractor shall perform design-level studies and develop highly detailed models of foreign spacecraft based on NASIC approved processes of modeling using MATLAB/Simulink. These studies shall include detailed technical assessments of all major subsystems (sensors, guidance and control, power, structures, thermal control, etc.) as well as payloads. The models shall be developed so as to operate in a stand-alone environment for external clients as well as for internal use for analysis. The contractor shall provide detailed modeling of the space environment to simulate the effects of the environment on the threat. The contractor shall apply engineering judgment consistent with foreign design practice should be used to complete the threat description where intelligence gaps exist. The contractor shall provide models in an industry standard portable format.
         3. **Spacecraft and Threat Optical Payload Modeling.** The contractor shall perform design-level studies and construct highly detailed foreign optical satellite payloads. These studies shall include detailed design and technical assessments on the components that compose the optical payloads along with the functional performance of the payloads using industry standard tools. The analysis shall leverage all available and relevant sources of intelligence data as well as additional engineering sources of information. The contractor shall apply engineering judgment consistent with foreign design practice should be used to complete the threat description where intelligence gaps exist. The contractor shall provide models in an industry standard portable format.
         4. **Space and Counterspace Threat Modeling.** The contractor shall perform modeling/digital simulation in the area of space defense including simulation software development & verification, and data generation & verification.
      3. **Advanced Space and Counterspace Technologies.** The contractor shall analyze emerging space technologies that have impacts on space development and operational systems.
         1. **Signature Reduction Analysis.** The contractor shall assess foreign capabilities to achieve signature reduction on aerodynamic, ballistic missile, and other space systems in the areas of Radar Cross Section (RCS) (including analysis of advanced technologies), IR, and electronic emissions.
         2. **Electromagnetic Analysis.** The contractor shall analyze electromagnetic codes, tools and techniques for application to specific signature intelligence analytic issues.
         3. **Laser Analysis Support.** The contractor shall provide support to conduct detailed analysis of foreign Counterspace laser systems, associated infrastructure, and provide engineering assessments of those capabilities.
         4. **Electronic Warfare Analysis Support.** The contractor shall provide support to conduct detailed analysis of foreign Counterspace electronic warfare capabilities, associated infrastructure, and provide engineering assessments of those capabilities.
         5. **Command, Control & Communication (C3) Analysis Support.** The contractor shall provide support to conduct detailed analysis of foreign Counterspace C3 systems, associated infrastructure, and provide integrated assessments across the physical and virtual C3 domains.
         6. **Operational Space Intelligence Support.** The contractor shall provide support to strategic and operational space intelligence requirements. The contractor shall input, manage, and coordinate data relevant to foreign Counterspace operations and the facilities and equipment associated with these operations.
         7. **Space Intelligence Preparation of the Battlespace Intelligence Reporting.** The contractor shall provide support to provide information research and database inputs to maintain and enhance SMD digital production.
         8. **Space Object Surveillance & Identification Analysis Support.** The contractor shall provide support to conduct detailed analysis of foreign SOSI radar and optical systems, associated infrastructure, and provide integrated all-source assessments.
         9. **Regional Analysis Support.** The contractor shall provide support to conduct detailed analysis of foreign Counterspace programs and provide integrated assessments of foreign Counterspace strategy, intent, and doctrine.
         10. **Anomaly Resolution Support.** The contractor shall provide support to perform first-tier analysis of anomalous satellite events, determining their cause and source.
         11. **Signals Analysis Support.** The contractor shall provide support to conduct detailed analysis and reporting of signals intelligence data.
         12. **Imagery Analysis Support.** The contractor shall provide support to conduct detailed analysis of imagery intelligence data.
      4. **Anti-Satellite (ASAT) Analysis.** The contractor shall provide assessments of foreign countries' and NGOs’ abilities to interfere with satellites and satellite links (command, control, and data). Assessments shall include capabilities and limitations of individual systems and networks of systems.
         1. **Anti-Satellite Capability Analysis.** The contractor shall analyze foreign ground-based, sea-based, air-based, and space-based anti-satellite systems; including conventional, nuclear, directed energy weapons, or ballistic missile defense systems used in an anti-satellite role.
         2. **Direct Ascent Anti-satellite Analysis Support.** The contractor shall provide support to conduct detailed analysis of foreign direct ascent anti-satellite weapons systems, associated infrastructure, and provide engineering assessments of those capabilities.
         3. **Nuclear, Directed Energy and Kinetic Anti-satellite Analysis Support.** The contractor shall provide support to conduct detailed analysis of foreign nuclear, directed energy and kinetic anti-satellite weapons systems, associated infrastructure, and provide engineering assessments of those capabilities.
      5. **Integrated NAVWAR Assessments**. The contractor shall assess GPS and space-based PNT integration into threat weapons potentially used against U.S. and allied forces, and encompasses associated doctrine, tactics, and employment.
   4. **Ballistic Missiles.** The contractor shall perform scientific and technical analysis of foreign ballistic missile systems in the following areas: detailed external configuration; location and performance of internal components, technologies, and other subsystems; construction techniques and materials; guidance and control systems; propulsion systems; reentry systems, countermeasures, and ground support equipment.
      1. **Ballistic Missile Systems.** The contractor shall perform analysis including static and dynamic characteristics of the weapon system (i.e., including the evaluation of operational capability, reliability, maintainability, survivability, vulnerabilities, proliferation of critical components, technology, production capability, specialty materials, or expertise to countries or groups hostile to the U.S. national security interests. Includes analysis of associated Cyberspace capabilities, dependencies, and vulnerabilities.
      2. **Ballistic Missile System Analysis.** The contractor shall analyze data from intelligence sources such as SIGINT (signals intelligence), GEOINT (imagery), ELINT (electronics), RADINT (radar), HUMINT (human), foreign materiel exploitation, and open sources to assess the capabilities, performance, vulnerabilities, and anomalous activities of foreign ballistic missiles and associated systems and subsystems.
      3. **Ballistic Missile Sub-System Analysis.** The contractor shall perform engineering analysis on current and projected foreign ballistic missile systems and subsystems. The analysis shall address engineering designs, performance assessments, airframe, propulsion, guidance and control, reentry vehicles, warheads, countermeasures, and penetration aids
      4. **Projected Ballistic Missile Systems.** The contractor shall provide analysis of project foreign ballistic missile system capabilities, performance, and vulnerabilities, for a period of at least 20 years into the future, including assessment of operational needs/deficiencies; analysis of doctrine and doctrinal requirements; assessment of technological capabilities to support requirements, including identification of plants, factories, institutes, and personalities that are related to specific enabling technologies; assessment of sources or recipients of technology transfer; development of feasible conceptual designs that could fulfill mission requirements; and estimates of probable deployment dates.
      5. **Ballistic Missile System Signatures.** The contractor shall analyze, and/or analytically derive, signatures (visible, ultraviolet, IR, radar, etc.) of foreign ballistic missiles and associated subsystems.
      6. **Ballistic Missile System Operational Analysis.** The contractor shall assess the operational effectiveness of foreign ballistic missile weapon systems. The contractor shall evaluate the weapon as a completely integrated system combining the ballistic missile, ground support equipment, deployment facilities, command/control/communications, and signature information with country-specific associated doctrine and tactics. The contractor shall develop and modify computer code, threat models, and threat visualizations to reflect overall system performance characteristics.
      7. **Ballistic Missile Flight Models.** The contractor shall conduct and document foreign ballistic missile flight simulation analysis to include missile trajectory modeling, attack simulation, and attack scenarios.
      8. **Ballistic Missile Vulnerabilities.** The contractor shall analyze foreign ballistic missile vulnerability and hardening to lasers (IR to X-ray wavelengths), particle beam weapons (neutral and charged), and kinetic energy weapons.
      9. **Ballistic Missile Analytic Methodology and Tools.** The contractor shall review, analyze, propose, and create ballistic missile analytic methodologies that improve on the techniques currently used to evaluate technical intelligence data and perform engineering analysis. Methodologies shall emphasize new approaches that provide increased analytical detail and accuracy. The contractor shall evaluate and/or modify current analytical tools and modeling software and create new analytical tools as required.
   5. **Forces, Technology, and Infrastructure.** The contractor shall provide scientific and technical analysis and assessment of current and future foreign services capabilities and technologies and infrastructure (operational C4ISR, air, air defense, and ballistic missiles) including analysis of capabilities of civil air organizations to support military operations, in leadership; strategy; doctrine; intent; operational art; tactics, techniques, and procedures, training curriculums; readiness systems; training doctrine, and threat perceptions. Includes analysis of associated Cyberspace capabilities, dependencies, and vulnerabilities.
      1. **General Threat Technology Assessments/Forecasts.** The contractor shall provide engineering and scientific assessments and forecasts in the area of technologies and their military impact on current and future air, ballistic missile, Counterspace, and space system, subsystem, and component capabilities, performance, and vulnerabilities.
         1. **Basic Emerging, Disruptive, and Breakthrough Technologies.** The contractor shall perform analysis, evaluation and projection of the discovery, development, or exploitation of advanced military technologies by foreign state or non-state actors including assessments of the developments and trends in foreign scientific and technical capabilities that impact future applications in military defense and national security to prevent technology surprise to the U.S. and allied forces.
         2. **Apparent Emerging Air and Space Applications.** The contractor shall provide engineering and scientific assessments and forecasts in the area of emerging or breakthrough technologies and their applications to current and future air, air defense, ballistic missile, C4, space and Counterspace systems to include: directed energy, active and passive sensors, propulsion, fuels, electronics, computing, analytical techniques, cybernetics, power, structures, low observable, stealth, counter-stealth, materials, Cyberspace operations, and manufacturing processes; also includes: associated resources, and technology acquisition and transfer efforts, weapon system acquisition processes, and details on R&D strategies, policies, decisions, practices, resource allocations, and priorities.
         3. **Electronic Combat Capability Analysis.** The contractor shall analyze foreign ground-based, sea-based, air-based, and space-based electronic combat capabilities. The analysis shall examine the means to jam/spoof sensors and communication links, to include modeling.
         4. **Air and Missile Defense Suppression Analysis.** The contractor shall analyze foreign air and missile defense suppression capability through the use of jamming, anti-radiation missiles, air-to-surface weapons (guided and unguided), ballistic weapons, special operations, and advanced technologies.
         5. **Non-Conventional Warfare Analysis.** The contractor shall characterize foreign non-conventional warfare including, but not limited to special-purpose forces, terrorist activity, Radio Frequency (RF) weapons, and emerging technologies.
      2. **Technology Transfer & Proliferation Assessments/Forecasts.** The contractor shall provide assessments and long-range forecasts in the areas of technology transfer and its military impact, ability of recipient countries to assimilate transferred technology, and proliferation of weapons of mass destruction and/or their delivery systems.
      3. **Denial and Deception Analysis.** The contractor shall assess the denial and deception strategy, doctrine, operational art, organization, leadership, personnel, tactics, techniques, procedures and systems of foreign air and space forces. Assessments shall include but not be limited to technical analysis of denial and deception systems (decoys, camouflage netting, coatings, and other devices); operational analysis of employment of denial and deception at the tactical, operational and strategic levels; and predictive analysis of future denial & deception capabilities.
      4. **Infrastructure Assessments.** The contractor shall perform analysis of service infrastructure, service modernization, service readiness, and service sustainability including assessments of the composition, demographics, disposition, logistics, strength, vulnerabilities, training status, tactics, combat effectiveness, mobilization, employment of forces, and other relevant information concerning the personnel, units, facilities, and equipment.
         1. **Leadership Assessments.** The contractor shall conduct assessments of military air services leadership; their perceptions of the threat and their capabilities/vulnerabilities; their perception of the U.S.; their goals, motivations, and intentions; and their ability/capability to pursue them.
         2. **Civilian Air Systems Capabilities.** The contractor shall perform analysis of technical characteristics capabilities, performance, limitations, effectiveness, and vulnerabilities of foreign civilian aircraft, their materials, production techniques, and related RDT&E programs.
         3. **Behavioral Influences Analysis.** The contractor shall assess the influence vulnerabilities and susceptibilities of foreign air & space forces personnel, and personnel in other organization/groups of interest, at the operational level with emphasis on organizational and group dynamics. The contractor shall predict likely adversary intent and behavior, and formulate recommendations for influencing behavior to achieve the U.S. operational commander’s desired effects.
         4. **Projected Air Systems and Forces Analysis.** The contractor shall provide analysis of projected foreign air threat system capabilities, performance, and vulnerabilities for a period of at least 20 years into the future. The contractor shall develop feasible conceptual designs that could fulfill mission requirements; and estimates of probable deployment dates of foreign threat systems capabilities, performance, and vulnerabilities, for a period of at least 20 years into the future, including assessment of operational needs/deficiencies; analysis of doctrine and doctrinal requirements; assessment of technological capabilities to support requirements, including identification of plants, factories, institutes, and personalities that are related to specific enabling aerospace technologies; assessment of sources or recipients of technology transfer; feasible conceptual designs that could fulfill mission requirements; and estimates of probable deployment dates.
         5. **Projected Space and Counterspace Systems and Forces.** The contractor shall create conceptual designs to fulfill mission requirements and estimates of probable deployment dates of space systems and forces of foreign countries and NGOs at least 20 years into the future. Assessments shall include analysis of the threat or spacecraft, payload, orbital characteristics, operations, mission control, and launch systems. The contractor shall provide analysis of project space systems and forces of foreign countries and NGOs at least 20 years into the future. Analysis shall include: operational needs/deficiencies; doctrine; employment concepts; technological capabilities to support requirements, including identification of plants, factories, institutes, and personalities that are related to specific space/Counterspace technologies; sources or recipients of technology transfer; development of feasible conceptual designs to fulfill mission requirements; and estimates of probable deployment dates. Assessments shall include analysis of the threat or spacecraft, payload, orbital characteristics, operations, mission control, and launch systems.
      5. **Operational Threat Environment**. The contractor shall assess, analyze, and document the current, projected, and reactive operational environment.
         1. **Force Level Analysis.** The contractor shall characterize foreign offensive and defensive force levels, roles and missions, doctrine, strategy, tactics, and training.
         2. **Socio-Economic and Other Factors Analysis.** The contractor shall characterize foreign socio-economic, ethnic, political, religious, etc., factors that influence force levels, roles and missions, military doctrine, strategy, training, and tactics.
         3. **C4I Analysis.** The contractor shall analyze foreign command, control, communications, computers and intelligence (C4I) infrastructure and capabilities.
         4. **Attack Capability Analysis.** The contractor shall characterize foreign attack capabilities, including force size, composition, and attack timing, against both defended and undefended point and area targets.
         5. **Information Operations Analysis.** The contractor shall characterize foreign information operations capabilities relative to information gain, exploit, attack, and defend.
         6. **Camouflage, Concealment and Deception Analysis.** The contractor shall characterize the employment of foreign camouflage, concealment, and deception (CC&D) equipment that supports foreign operation or strategic denial and deception activity. The contractor shall assess foreign nation capability to develop or implement CC&D technology that is employed to protect aircraft, ballistic missiles, selected ground vehicles, and strategic facilities, and assess its ability to deny or degrade US intelligence, surveillance, and reconnaissance sensors (ISR), and the US reconnaissance, surveillance, targeting, and acquisition capability.
         7. **Logistics Analysis.** The contractor shall assess foreign logistics, support, and production capabilities.
      6. **Regional Air and Space Forces Analysis.** The contractor shall assess the force structure, composition, leadership, personnel, strategy, doctrine, operational art, and tactics of foreign air and space forces and other organizations of interest, with emphasis on the integrated and synergistic employment of air, space and information capabilities to achieve strategic, operational and tactical effects. Analysis shall focus on current capability and predicting future capability up to 20 years in the future. In particular, provide assessments of military training and exercises, of air, space and missile forces, to include Information operations (electronic warfare, counter-space, cyber, etc.), in order to provide insight into intent and capabilities of the force.
      7. **Integrated Threat.** The contractor shall assess, analyze, and document the current, projected, and reactive integrated threat, that is, the synergy of threat targets, system specific threats, and the operational threat environment that defines the complete war fighting capability of an adversary.
         1. **Systems Integration Analysis.** The contractor shall analyze foreign capability to integrate offensive, defensive, and defense suppression operations to defeat or degrade current and future US offensive and defensive systems.
         2. **Theater Modeling Analysis.** The contractor shall perform quantitative modeling of US/foreign strategic and theater exchanges.
         3. **Defensive Systems Modeling Analysis.** The contractor shall perform quantitative modeling of US ballistic missile and/or other air and space defense systems to included architectures and related measures of effectiveness.
         4. **Foreign Perceptions Analysis.** The contractor shall characterize foreign perceptions of current and future US offensive and defensive systems including weapons, sensors, communications, and countermeasures.
   6. **Open Source Intelligence (OSINT.)** The contractor shall collect, process (to include translation of foreign language where applicable), exploit, and disseminate primarily foreign open source information and Open Source Intelligence (OSINT) analysis to support the NASIC all-source mission and the broader Intelligence Community.
      1. **OSINT Analytic Methodology and Tool Development.** The contractor shall review, analyze, propose, and develop OSINT analytic methodologies that improve on the techniques currently used to perform collection, processing (to include foreign language translation), exploitation, and dissemination of scientific and technical open source data. Methodologies shall emphasize new approaches that promote enhanced OSINT analytic tradecraft. The contractor shall evaluate and/or modify current analytical tools and software and develop new analytical tools as required.
      2. **OSINT Translation Tool Development.** The contractor shall create and maintainspecialized analysis tools for translation of foreign language scientific and technical textual information in support of Open Source and all-source intelligence analysis and production including specialized machine translation routines and applications for Government use and ownership.
   7. **Human Intelligence (HUMINT.)** The contractor shall collect HUMINT information and support HUMINT collection to support the HUMINT missions of NASIC, Air Force, and the Intelligence Community. Specialized HUMINT collection qualifications may be required.
   8. **Analyst Training.** The contractor shall cultivate and exercise relationships with NASIC training personnel to maximize the benefits from existing NASIC opportunities. The contractor shall document and report the relevant findings.
      1. **Cadre of Mentors.** The contractor shall identify and educate a cadre of mentors available to guide new NASIC analyst development. The contractor shall document with verbal and/or written presentations and technical reports.
      2. **Exercise Support Requirements.** The contractor shall conduct exercise scenario development and execution to define/determine where additional analysis and development needs are required. The contractors shall document with verbal and/or written presentations and written report findings upon exercise completion.
   9. **SIGINT.** The contractor shall perform SIGINT data analysis, data processing, data management, analytic techniques development and implementation, IT management, IT and specialized hardware acquisition, system engineering, system integration and training development as they relate to SIGINT analysis.
      1. **System Engineering and Integration.** Tasks of this type shall require the contractor to develop, procure, and deliver hardware/software system, system upgrade or system components to meet defined performance criteria. The resulting hardware/software shall be used to process, analyze, exploit and report on collected data.
         1. The contractor shall review the current state of the art in SIGINT and, to the greatest extent practical, shall adhere to NASIC and SIGINT community standards when recommending or making hardware and software modifications, updates, or changes for hardware and software where practical. Contractor shall first obtain written Government approval before implementing such non-standard solutions.
         2. The contractor shall deliver software-intensive turnkey systems, system upgrades, or system components for SIGINT processing and analysis. Systems will consist of general purpose IT and specialized signal processing hardware and contractor-created software.
         3. The contractor shall provide the government with a system design modification or upgrade document which shall include major features of the design, lists of hardware, software, and firmware to be used, task milestones, performance measures/goals and a statement of expected future year costs to the government. Changes to the task milestones or performance measures require government approval by CR or ACR.
      2. **System Support.** Tasks of this type shall require the contractor to operate, maintain, update, modify, expand, document, or analyze a SIGINT system or systems. Performance of these tasks may require the contractor to update, modify, or expand the NASIC SIGINT system in question by adding, removing or updating hardware, software or firmware or by modifying the configuration of the system or its components. The contractor shall perform the following:
         1. Requirements may be scheduled or ad-hoc. Due dates for scheduled functions shall be identified in the TO and reviewed at the task kickoff meeting. The TO shall identify the types of ad-hoc functions to be performed; ad-hoc function assignments will be accompanied by a due date.
         2. When the contractor needs to make a change to the NASIC SIGINT system, the contractor shall submit a request for change (RFC) document prior to performing the modification when the modification changes the processing or storage capacities or physical node count of the system by more than 10%, incurs on-going costs for the government (such as software licensing), or has the potential to make the system unavailable to 10 or more users for a period of 60 minutes or more in the event of an upgrade failure. The government may waive this requirement on a case-by-case basis. All waivers will be granted in writing.
         3. Request for change (RFC) documents shall identify the intended result of the change; future year costs associated with the change; planned date of change; all hardware, software, and firmware components to be added, removed or modified; network address changes; an installation plan and a back-out plan in the event of failure.
      3. **SIGINT Techniques Implementation.** Tasks of this type shall require the contractor to implement a new or improved analytic, processing, or training function. The deliverable for these efforts shall most commonly be a software routine or training module, but could also include hardware, analysis of a process or algorithm, or a study.
         1. The contractor shall review the current state of the art in SIGINT and adhere to NASIC and SIGINT community standards for hardware and software to the greatest extent. The Contractor shall not introduce or use non-standard hardware and software without first obtaining written Government approval from CR or ACR.
         2. The contractor shall provide the government with an implementation plan which shall include major features of the deliverable; lists of hardware, software, and firmware to be used; task milestones; required features and a statement of expected future year costs to the government. Changes to the task milestones or required features require government approval by CR or ACR
         3. The contractor shall develop databases and web hosted products to support NASIC finished intelligence production. This includes database development, database verification, data generation, and data verification. Database development includes generation of the database structure and input of the data into the database. Database development will be consistent with NASIC corporate strategies, which includes the Knowledge Prepositioning System (KPS).
      4. **SIGINT Analysis.** Tasks of this type shall require the contractor to perform or support SIGINT analysis. Analysis duties may include finding, ordering, loading, screening, processing, analysis, and reporting of SIGINT data; consultation with government or contractor SIGINT analysts; and presentation of the results of analysis or a topic area with material bearing on SIGINT data analysis.
         1. The contractor shall conduct SIGINT analysis or analysis support as specified in the TO. The contractor shall be responsible for producing product types described in the TO. Product due dates may be specified in the TO or may be provided in writing after TO award. Product due dates may not be changed except by task order modification.
      5. **NASIC Data Management System (NDMS) Upgrades and Enhancements.** The contractor shall upgrades and enhance the NASIC Data Management System (NDMS) to provide long-term storage and management capabilities for specialized signals and data sets. The contractor shall automate data management processes, improve interfaces with NASIC and national databases and systems used for management, tracking, identifying, transmitting, cataloging, and storing of signals data. The contractor shall implement hardware and software system improvements and expansion to the existing storage sub-systems and data management to facilitate growing mission, access to new data sets, improve access speeds, and reduce system administration overhead burden and maintenance costs.
   10. **Intelligence Mission Data.** The scope of the work involves all aspects of IMD and FMS support to include (but not limited to): data research and acquisition, critical analysis, expert assessment, and subsequent system file creation, support for training, mentoring and collaborating with analysts from NASIC and other production center partners and users across the IMD and FMS communities to ensure consistency of standards and production methodology to the extent possible remains a critical requirement. The contractor shall make their expertise available to MSIC, NASIC, NGIC, and ONI and other user/producers (as directed) who are generating similar products for IMD and EWIRDB FMS missions.
       1. **Support.** The contractor shall provide mentoring, technical expertise, and analytic support for standardized product generation by NASIC analysts.
       2. **Production.** The contractor shall perform research, data acquisition, and technical analysis to provide SAVANT compliant product initialization and/or updates on specified systems as directed by the government technical representative or Technical Monitor (TM). The contractor shall be knowledgeable of the primary tools anticipated for usage under this task (i.e. SAVANT, MARTES, CED, KPS, JADE, and the Opana suite of tools).
       3. **Training and Familiarization.** The contractor shall perform research, data acquisition, and technical analysis to provide SAVANT compliant product initialization and/or updates on specified systems as directed by the government technical representative or Technical Monitor (TM). The contractor shall be knowledgeable of the primary tools anticipated for usage under this task (i.e. SAVANT, MARTES, CED, KPS, JADE, and the Opana suite of tools).
          1. **US Participants.** The contractor shall provide Producer and/or User training and mentoring on an ad hoc basis using the following guidelines:
             1. Class format shall be determined based on anticipated student participation.
             2. The primary location of the classes shall be in the Dayton, OH locality and may involve both government and contractor facilities.
             3. The contractor shall provide a task leader to oversee total task management and supervise contractor personnel. The task leader shall serve as the primary point of contact to the government Client Representative (CR) for all technical aspects of the required work.
             4. Training which requires travel shall be coordinated with the EWIRDB Executive Agent prior to making travel arrangements.
          2. **Foreign Participants.** The contractor shall provide familiarization for foreign customers consistent with the Arms Export Control Act (22 USC); and International Traffic in Arms Regulation (ITAR) (22 CFR 120-130).
             1. The requirement and funding for this task shall be specified by the appropriate Technical Monitor (TM) or if in the case of FMS support, the FMS EWIRDB Program Manager (FMS Technical Representative).
             2. Class format shall be coordinated with the appropriate Technical Representative or TM prior to performance of this task.
             3. In all cases, the contractor shall submit a ROM to the government indicating expected costs of presenting the functional familiarization.
             4. The location of the classes shall be coordinated with the appropriate technical representative or TM. Location may involve both government and contractor facilities and may include travel.
             5. The contractor shall provide a task leader to oversee total task management and supervise contractor personnel. The task leader shall serve as the primary point of contact to the CR and FMS technical representative for all technical aspects of the required work.
       4. **Analytic Tools and Utilities: Maintenance and Upgrades.** The contractor shall review, report defects, recommend and create enhancements to existing applicable SAVANT compliant software tools and utilities as directed by the appropriate government technical representative or TM. The contractor shall accompany all recommended enhancements with an appropriate white paper write-up and a ROM cost estimate to the appropriate government TM. No software development shall initiate prior to government acceptance. Software upgrades shall be fully SAVANT compliant with sufficient regression testing to ensure continued compatibility across functional areas. No software development shall create U.S. dependencies on foreign s/w development architectures or utilities without the written approval from the Contracting Officer.
       5. **Utility Development.** The contractor shall develop and/or test applicable SAVANT compliant software tools and utilities as identified by the appropriate government technical representative or TM. The contractor shall accompany all recommended enhancements with an appropriate white paper write-up and a ROM cost estimate to the appropriate government technical representative. No software development shall initiate prior to government acceptance. No software development shall create U.S. dependencies on foreign s/w development architectures or utilities without the written approval from the Contracting Officer.
       6. **Foreign Military Sales Analysis Production and Support.** The contractor shall perform technical analysis and review on selected EWIRDB emitter systems as identified by the FMS technical representative or TM. The analysis shall be used as the basis for updates and/or initializations to casework associated with the Foreign Military Sales EWIRDB “Direct”, “Indirect”, and/or MOU customers.
          1. **Direct Database Customers.** Data initializations and/or updates for Direct customers shall comply with the formatting and policy standards established within the purview of DIA/OPE (Office of Partner Engagement). Direct Database customers shall receive a Standard EWIR Reference Format (SERF) XML-based EWIRDB product. Specific formatting requirements shall be conferred to the contractor via the task technical monitor as required. The specific countries supported shall be delineated via subsequent Requirement in Principle/Requirement in Specific (RIP/RIS) documentation associated with each FMS Case.
          2. **Indirect Database Customers.** Data initializations and/or updates for indirect customers shall comply with the Standard EWIR Reference Format (SERF) XML-based EWIRDB.
          3. **Funding Provided by FMS Cases.** The contractor shall track and report funding expenditures (provided through FMS cases) based on country lists provided by the government via subsequent Task Orders (TOs).
       7. **7.2 Engineering and Analysis for SERF-based EWIRDB Production.** The contractor shall ensure their analysis practice meets the following guidelines unless otherwise directed in subsequent Task Order:
          1. **7.2.1 General Requirements.** The contractor shall ensure the virtual file folders include the following items:
             1. a. Administrative Section: This section shall include a Table of Contents for the folder, plus File Administrative Data including remarks, keywords for data searches, data gaps, issues, and telecoms with NASIC analysts.
             2. b. File Section: This section shall contain the actual EWIRDB file(s). All product deliveries shall conform to the SERF-based XML EWIRDB product. System files shall be KPS Internal format, complete with multimedia attachments.
             3. c. AMBER Files: The section shall contain \*.mdl and \*.ant AMBER files per direction of the government for NASIC ground based systems. This section shall be marked N/A for NASIC airborne systems.
             4. d. EWIRDB Spreadsheet: This section shall contain the analyst's EWIRDB spreadsheet file, which shall show calculated parameters.
             5. e. Reference Section: The contractor shall use this section to hold any digitized references or other miscellaneous materials (text files, pdf files, html files, etc.) that could be relevant to the subject analysis. A summary document of references cited in the actual system/emitter file shall be included.

Note: When performing analysis at non-government facilities, and where applicable, the contractor shall convert new intelligence documents used to produce system files into a digital format following the guidelines that follow:

1. Each document shall exist as a stand-alone file.

2. Photos, graphs, tables, and other graphics may be stored within the main document or accessed via an external link. The method shall be consistent among all documents and approved by the government.

3. The contractor shall receive approval from the government prior to digitizing non-NASIC Finished Intelligence documents, which are more than 25 pages in length, or NASIC Finished Intelligence documents more than 5 pages in length.

* + - 1. **Analysis Requirements.** The contractor shall perform technical analysis to provide updates and/or initializations to specified emitter systems as identified by the EWIRDB Executive Agent.
         1. a.Following standard operating procedures, the contractor shall research and consult additional reference material for clarification and completeness of analysis; however, for select systems, the government may direct a minimal amount of research be accomplished.
         2. b. The contractor shall make use of the Joint Analytic Data Editor (JADE).
         3. c. The contractor shall complete basic State View representations for each radar system as appropriate.
         4. d. The Product Status requirement for delivered systems shall be Tier II unless otherwise directed by the Government POC.
         5. e. The contractor shall ensure each radar system has the associated KPS Core data (designators, User countries etc.) and one or more associated antenna models (as required).
         6. f. All EWIRDB production work shall undergo a rigorous quality control assessment utilizing all available software tools to aid in assuring system files meet established EWIRDB standards. Any standards not met shall be documented (with the reason why) in the administrative section of the virtual file folder. The contractor shall perform a technical quality control assessment for each radar threat model (RTM) created. In addition to the accepted EWIRDB community standards, unless otherwise noted, each RTM shall include successful performance within the following applications:

1. STRIKE FORCE+

2. StateView

3. ModalView

4. Keystone

5. Topaz

6. ScanVisualization

7. Multimedia Review Tool

8. Realtime Validation Tool

9. TechQC Tool

* + - * 1. g. Results that do not conform to normal standards require specific comments within the admin section of the virtual folder. An example would be non-compliance of a specific recently approved EWIRDB standard or “holes” within the ModalView results.
        2. h. As part of the QC procedures, the contractor shall have a senior radar analyst review each instantiated radar system to ensure accuracy, completeness, and conformity with sound engineering and analytic practice.
        3. i. The contractor shall ensure all necessary fields are populated to support a MEPED export.
    1. **7.3 Engineering and Analysis for AFMSS/CSDB Production.** The contractor shall ensure their analysis practice meets the following guidelines unless otherwise directed in subsequent Task Orders:
       1. **7.3.1 General Requirements.** The contractor shall ensure the virtual file folders include the following items:
          1. a. Administrative Section: This section shall include a Table of Contents for the folder, plus File Administrative Data including remarks, keywords for data searches, data gaps, and telecoms with NASIC analysts.
          2. b. File Section: This section shall contain the actual TERF file, and a formatted printout of the file. The file shall be normal EWIRDB format for airborne systems and CSDB TERF format for ground based systems.
          3. c. AMBER files: The section shall contain \*.mdl and \*.ant AMBER files per direction of the government for NASIC ground based systems. This section shall be marked N/A for NASIC airborne systems.
          4. d. Modeling of the threat radar's maximum detection range (MDR). The contractor shall use AMBER as the baseline comparison tool for determining the assessed range performance in the TOTF and CLOAR models. All significant modes shall be coded into the AFMSS CSDB file.
          5. e. AFMSS/CSDB Spreadsheet: This section shall contain the analyst's AFMSS/CSDB spreadsheet file, which shall show calculated parameters.
          6. f. Reference Section: The contractor shall use this section to hold any digitized references or other miscellaneous materials (text files, pdf files, html files, etc.) that could be relevant to the subject analysis. A summary document of references cited in the actual TERF file shall also be included.

Note: When performing analysis at non-government facilities, and where applicable, the contractor shall convert new intelligence documents used to produce system files into a digital format following the guidelines that follow:

1. Each document shall exist as a stand-alone file.

2. Photos, graphs, tables, and other graphics may be stored within the main document or accessed via an external link. The method shall be consistent among all documents and approved by the government.

3. The contractor shall receive approval from the government prior to digitizing non-NASIC Finished Intelligence documents, which are more than 25 pages in length, or NASIC Finished Intelligence documents more than 5 pages in length.

* + - 1. **7.3.2 Analysis Requirements.** The contractor shall perform technical analysis to provide parametric updates to selected AFMSS/CSDB radar files, as directed by the NASIC CSDB Program Manager.
         1. a. Following standard operating procedures, the contractor shall research and consult additional reference material for clarification and completeness of analysis for each radar system and then update/initialize file parametric attributes based on the best available intelligence data.
         2. b. The contractor shall enter mode-coded data and update the suffix table associated with any AFMSS/CSDB file.
         3. c. The contractor shall enter required FMS codes and related FMS information into the AFMSS/CSDB file as needed.
         4. d. All CSDB production work shall undergo a rigorous quality control assessment utilizing all available software tools to aid in assuring system files meet established CSDB standards. Any standards not met shall be documented (with the reason why) in the administrative section of the virtual file folder. The contractor shall perform a technical quality control assessment for each radar system created following established procedures called out by the Program Manager, CSDB Producer’s Manual and the 453rd EWS.
         5. e. As part of the QC procedures, the contractor shall have a senior radar analyst review each instantiated radar system to ensure accuracy, completeness, and conformity with sound engineering and analytic practice.
    1. **7.4 Engineering and Analysis for Observed ELINT Data Production.** The contractor shall provide observed ELINT data production on-site at the National Air & Space Intelligence Center.
       1. **7.4.1 General Requirements.** The contractor shall provide EW Signal Model production for both the ELINT Intercept Model (EIM) and the Observed ELINT Engineering Model (OEEM) as directed by NASIC/GXS Signals Analysis Squadron technical representative or Technical Monitor (TM). The government shall direct which systems and models will be targeted for production and will provide all required data necessary for model instantiation. Additional system research to support production is not anticipated; however, may be accomplished if identified by the government technical representative or TM.
       2. **7.4.2 Personnel Qualifications.** In addition to any previously mentioned personnel qualifications, the selected technical analysts shall possess a full understanding and working knowledge of KILTING, EWIR/EWIRDB, Knowledge Pre-Positioning System (KPS), Joint Analytic Data Editor (JADE), OEEM, EIM, ORCA, Data Assessment and Selection Services (DASS) and the Combined Emitter Database (CED).
       3. **7.4.3 Product Requirements.** The final product for all OEEM models shall complement and contribute toward the all-source assessment for that same system. Note: This requirement implies the OEEM system work shall be fully compatible and ready for use by All Source analysts. Completed signals analysis products (i.e. EIM/OEEM) shall be submitted to the appropriate government technical representative for inclusion in the master EIM/OEEM repository.
    2. **7.5 Engineering and Analysis for Combat/Combat Support Aircraft Production.** The contractor shall perform technical information research, provide expert technical assessment, and accomplish documentation on combat/combat support aircraft data in support of baseline IMD requirements. In addition to an IMD baseline, production data supports Air Force Mission Support System/Combat Support Database (AFMSS/CSDB), and Military Equipment Parametric and Engineering Database (MEPED) mission requirements.
       1. **7.5.1 General Requirements.** The contractor shall employ their technical expertise to ensure relevance and accuracy of the required data gleaned from the researched combat/combat support aircraft technical information. Upon government validation of the contractor’s initial assessments, the contractor shall transfer that data to NASIC’s Fixed Wing Aircraft (FWA) database in support.
       2. **7.5.2 Technical Information Research.** The contractor shall perform classified and unclassified technical information research on assigned combat/combat support aircraft to find each aircraft’s performance and technical characteristics, propulsion system, avionics fit, and other aircraft-specific data spelled out in the NASIC-provided Manned Aircraft / FWA (Fixed Wing Aircraft) Analysts User Guide. NASIC will provide a partial list of classified and unclassified web sites for the contractor’s use as a start for their research.
       3. **7.5.3 Technical Assessment.** The contractor shall provide the technical expertise necessary to ensure relevance and accuracy of the required combat/combat support aircraft data gleaned from the researched aircraft technical information.
       4. **7.5.4 Documentation of Aircraft Data.** The contractor shall document all resultant combat/combat support aircraft data and their sources in NASIC-prescribed Microsoft Excel spreadsheet format.
       5. **7.5.5 Government Verification and Validation.** The contractor shall submit completed spreadsheets to the government technical monitor (TM) of this task for his/her review, verification, and validation. Once validated by the government, the spreadsheet(s) will be returned to the contractor for their use as the data source for populating the NASIC’s combat/combat support FWA database.
       6. **7.5.6 Populating Combat/Combat Support FWA Database.** The contractor shall input all required combat/combat support aircraft data from the government-validated aircraft spreadsheets into the NASIC-designated database by following the directions contained in the NASIC-provided Manned Aircraft / FWA Analysts User Guide.

1. Delivery Schedule

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NO. | | TITLE | | PWS PARAGRAPH | RECIPIENT(S) | | DRAFT DUE | FINAL DUE |
| 1 | | Financial / Status Reports | | 4.4 | COR | | N/A | Monthly |
| 2 | | Program Management Reviews (PMRs) | | 4.5 | COR | | N/A | As requested but not less than Quarterly |
| 3 | | Reports and Studies | | 4.6 | Designated Technical Monitor/POC | | As requested by Technical Monitor | As requested by Technical Monitor |
| 4 | | Final Report | | 4.6 | Designated Technical Monitor/POC | | 30 days prior to end of Period of Performance | 15 days prior to end of Period of Performance |
| 5 | | Briefings | | 4.6 | Designated Technical Monitor/POC | | N/A | As requested by Technical Monitor |
| 6 | | Project Management Plan | | 4.3 | Designated Technical Monitor & COR | | N/A | 15 days after award of designated Task Order |
| 7 | | Software Products/Items | | 13.7 | Designated Technical Monitor/POC | | 30 days prior to end of Period of Performance | 15 days prior to end of Period of Performance |
| 8 | | Quality Control Plan (QCP) | | 14.0 | COR | | N/A | Delivered with quote, Updated as requested |
| 9 | | Final Invoice and Release of Claims | | 13.5 | COR | | N/A | 60 calendar days after the end of the Task Order period of performance |
| 10 | | Classified Holdings – Inventory | | 4.7 | COR | | N/A | Annually |
| 11 | Government Furnished Equipment (GFE) Inventory | | 10.1.4 | | COR | N/A | | Monthly |
| 12 | DD254 –Subcontractors | | 12.2 | | COR | N/A | | 30 calendar days after task order award |
| 13 | SCI Eligibility Package(s) | | 12.3 | | COR | N/A | | 10 calendar days after task order award |

1. Meeting Attendance/Travel
   * 1. **Meeting Attendance.** The contractor shall participate in regular team meetings, technical interchange meetings, and interface control working group meetings as required. The contractor shall prepare and present briefings to the Government when requested on the results of efforts undertaken for this PWS.
   1. **Travel Requirements.** Contractor personnel shall be required to travel to perform the efforts required in this PWS. All travel will be approved by the Government Technical Monitor through the contracting officer prior to occurrence. Failure to obtain preapproval could result in non-payment by the Government.
      1. Travel between Wright-Patterson AFB, OH, or primary duty location, and the local contractor's office, and vice versa, is not a reimbursable cost.
      2. The contractor shall adhere to Joint Travel Regulations for all travel. The contractor shall make all travel preparations (air fare, hotel, rental car.) The contractor shall estimate travel (including the total number of trips, the beginning and duration of each trip, and the number of and occupations of all contractor personnel making the trip) and obtain advance approval from the contracting officer.
      3. **CONUS Travel Requirements.** The contractor shall submit all requests for travel via electronic mail to the contracting officer and include security clearance requests to the Government contracting officer a minimum of 15 calendar days prior to the anticipated travel start date.
      4. **OCONUS Travel Requirements.** The contractor shall comply with the Foreign Clearance Guide (FCG) and shall be responsible for ensuring timely compliance with all FCG requirements. The contractor shall be responsible for all preparations to include, passports, inoculations, and transportation expenses. All clearance requests shall be sent to the contracting officer a minimum of 30 calendar days before the anticipated travel start date.
2. Personnel
   1. The contractor shall ensure personnel performing on Task Orders have the proper credentials allowing them to work in the United States. Persons later found to be undocumented or illegal aliens will be remanded to the proper authorities.
   2. **Personnel Skill Levels**. The skill level an individual qualifies for is dependent upon relevant education, experience and capabilities of the individual which equip him/her to perform within the proposed labor category. For each order, the contractor shall propose the required disciplines, skill mix and level, which are most effective for accomplishing the task.
      1. The contractor shall propose individuals with skills meeting the requirements specified in the subsequent task order PWSs.
   3. **Key Personnel.** Key Personnel are defined as those individuals who are essential to the work being performed. Key personnel proposed shall be qualified in the appropriate labor category. The contractor shall provide resume(s) in sufficient detail to allow the Government to assess the qualifications, experience, and security clearance level of the proposed key personnel. The contractor's key personnel shall have valid TOP SECRET/Sensitive Compartmented Information (TS/SCI) security clearances and there shall be a sufficient number of appropriately cleared personnel to handle, store, work with, generate, and manage the classified information associated with these requirements.
      1. **Key Personnel Substitution.** The contractor shall not remove or replace any personnel designated as Key Personnel without making a written request to and receiving written concurrence from the CO. The contractor’s request for a change to Key Personnel shall be made no later than ten (10) calendar days in advance of any proposed substitute(s) and shall include a justification for the change. The request shall (1) indicate the labor category or labor categories affected by the proposed change, (2) include resume(s) of the proposed substitute in sufficient detail to allow the Government to assess their qualifications, experience, and security clearance level, and (3) include a statement addressing the impact of the change on the contractor’s performance.
      2. **Non-Key Personnel Substitutions**
         1. The contractor shall ensure that all proposed replacements (temporary or permanent) meet the security requirements for the replaced individual and all substituted personnel shall have equal or better qualifications than the individual they replace, subject to the Government’s discretion.
         2. The contractor shall notify the Government of any potential vacancy and prior to any staff member being removed, rotated, re-assigned, diverted or replaced.
      3. **Continuity of Qualified Personnel.** The contractor shall maintain sufficient staffing levels to accomplish all required tasks. This includes a sufficient number of personnel with appropriate security clearance to handle, store, work with, generate, and manage any classified information associated with this contract and any Task Orders awarded under this contract.
         1. **Personnel Transition.** The contractor shall make every effort to perform tasks without loss of service to the Government. This may necessitate the use of temporary personnel to fill short term gaps between permanently assigned employees. Failure of the contractor to employ an adequate number of qualified, appropriately cleared personnel will not be an excuse for failure to perform this work within the cost, performance, and delivery parameters of this contract or any Task Order awarded under this contract.
   4. **Management and Training.** The contractor shall be responsible for selecting personnel who are well qualified to perform the required services, versed in supervising techniques used in their work, and for keeping personnel informed of all improvements, changes, and methods of operation.
   5. **Exceptions to Personnel Qualifications.** NASIC will accept nationally recognized experts and other personnel well qualified in the various labor categories in lieu of specified degree requirements on a case by case basis. When requested, the contractor shall furnish the specific qualifications of each individual proposed to work on the task. If key individuals are proposed who the contractor claims are nationally recognized experts or otherwise well qualified individuals, sufficient detail should be given to allow evaluators to verify this claim. Examples of special qualifications that will be recognized will include, but not be limited to: (a) years of experience in the discipline(s) required for this effort; (b) publications; (c) presentations at national level conferences; (d) patents; (e) copyrights; (f) professional affiliations; (g) university affiliations; and (h) special recognition(s), awards, and honors. All nationally recognized experts shall adhere to the same security clearance requirements, standards of conduct, and moral and ethical requirements. NASIC reserves the right to disapprove personnel not believed to be technically qualified.
3. Government Furnished Facilities, Equipment And Information
   1. **Government Furnished Equipment/Government Furnished Property (GFE/GFP).** The contractor shall have access to the GFE/GFP specified below. If the contractor requires any additional GFE/GFP to accomplish individual task orders, the contractor shall specify the requirements in the technical proposal, and shall be subject to Government approval. Should the Government disapprove any GFE/GFP requested in the proposal; the contractor shall be prepared to accomplish the requirements of the PWS without the requested GFE/GFP.
      1. **Facilities and Services** NASIC will provide work space, furniture, access to business telephones (for business purposes only) and the computer time as required for work performed on-site at Wright Patterson AFB, OH at no additional cost to the contractor. Any requirements for additional Government Furnished Equipment (GFE) will be stated in each task order. All GFE shall be returned at the end of the period of performance unless otherwise stated in writing by the contracting officer.
      2. **Information Sources.** Qualified Government personnel will be available to provide technical input, answer questions, review completed draft deliverables and provide feedback. Timely communication is essential to meet shortened suspense dates, particularly as it relates to documentation and informational meetings and briefings. NASIC will provide access to JWICS, NIPRNET, and all-source intelligence data required to complete the items in the PWS.
      3. **Contractor Liability.** The contractor shall conserve and protect Government resources. The use of these resources for non-Governmental use is prohibited. The contractor shall repair any Government-owned equipment, which is damaged through or by the fault of the contractor, with equipment of equal or better quality, at no cost to the Government. All repairs and/or replacement of GFE/GFP must be pre-approved by the contracting officer.
      4. **GFE/GFP Inventory.** The contractor shall maintain a current list of all GFE/GFP broken out by active task order and provide it to the contracting officer.
   2. **Rehabilitation Act Compliance (Section 508).** Unless otherwise exempt, all services and/or products provided in response to this requirement shall comply with Section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794d), and the Architectural and Transportation Barriers Compliance Board Electronic and Information Technology (EIT) Accessibility Standards (36 CFR part 1194.)
4. Place of Performance
   1. **Primary Locations.** The majority of the work shall be accomplished at the contractor's facility and at NASIC, 4180 Watson Way, Wright-Patterson AFB, and Ohio 45433-5648.
   2. **Additional Locations.** Contractor work space may be required in various locations within the continental US as stated on the DD254.
5. Security
   1. Special Access Program (SAP) access may be required of certain personnel on some task orders.
   2. The contractor shall submit a DD Form 254 for all assigned subcontractors within 30 calendar days of issuance of first task order from this contract.
   3. The contractor shall submit an SCI Eligibility Nomination Package and SF86 for each proposed individual requiring TS/SCI to the COR within 10 calendar days of task order award.
      1. In the event an individual's eligibility decision exceeds 30 calendars days beyond the task order award date, the Government reserves the right to request the nomination of a replacement candidate. Where no suitable candidate is nominated within 10 calendar days of the Government request, the Government reserves the right to cancel the task order award and issue a subsequent task order award.
   4. **The Use of Foreign Nationals.** A foreign national is defined as all persons not citizens of, not nationals of or immigrant aliens to the U.S. It is expected that some materials marked NOT RELEASABLE TO FOREIGN NATIONALS (NOFORN) will be passed to the contractor in support of various tasks issued. Any Foreign National will be prohibited from reviewing material with this handling caveat. Per DoD 5220.22-R, dated 17 Feb 87, paragraph 1-237, Immigrant alien is defined as any person lawfully admitted into the U.S. under an immigration visa for permanent residence.
   5. **Privacy Act Information.** The provisions of the Privacy Act of 1974 protect information, and, therefore all contractor personnel and any subcontractors assigned to this contract shall take the proper precautions to protect the information from unauthorized disclosure.
   6. **Operational Security (OPSEC).** Critical Information (CI) associated with any task order shall be protected to prevent adversary collection and exploitation. The contractor shall implement security requirements as directed by the Government's OPSEC Plan including initial training and reoccurring training, which shall be provided as Government Furnished Information (GFI).
   7. **Non Disclosure Agreement.** When specified, contractor personnel shall complete and sign a “Contractor Employee Non-Disclosure Agreement”. A copy of each signed and witnessed Non-Disclosure agreement shall be submitted to the contracting officer prior to performing any work.
6. Special Instructions
   1. **Guaranteed Final Report.** Final reports shall be required for each subtask and shall be defined at the task order level.
   2. **Contractor Holidays.** The prices/costs in the contract include holiday observances; accordingly, the Government will not be billed for such holidays. Any work to be performed on an observed holiday, shall be submitted for approval to the contracting officer a minimum of 10 days before the work is to occur. The request shall include the name of the contractor, the number of hours requested, and a Government POC who will be available to sign the contractor in and out of the facility. If approved by the contracting officer, the contractor shall only bill the Government at the established hourly rate, and not at a higher holiday/overtime rate. The following days are considered holidays:
      1. All days issued by Executive Order by The President of the United States;
      2. New Year's Day
      3. Martin Luther King Jr. Day
      4. President's Day
      5. Memorial Day
      6. Independence Day
      7. Labor Day
      8. Columbus Day
      9. Veteran's Day
      10. Thanksgiving
      11. Christmas
   3. **Identification of Contractor Personnel.** Contractors shall identify themselves as contractors during meetings, telephone conversations, and in electronic messages, or correspondence. All contractor-occupied Government facilities shall be clearly identified with contractor supplied signs, or name plates identifying these are contractor work areas.
   4. **Man-year Definition.** For the purposes of this PWS one (1) man-year is defined as a total of 1920 labor hours.
   5. **Close-Out Procedures.** The contractor is required as a deliverable of each task order to provide a final invoice and Release of Claims no later than 60 calendar days after the end of each individual task order period of performance. The order will be modified for closeout.
   6. **Emergency Conditions.** In the event an emergency is declared for WPAFB necessitating the implementation of an alternate work schedule (other than a standard 8-hour day, Monday-Friday work week), services provided under this contract may require implementation of an alternate work schedule, not to exceed a 40-hour work week. The Contracting Officer will make notification to the appropriate contractor's point of contact. A modified work schedule will be adopted for the duration of the declared emergency and the contractor will comply with the provisions of that alternate work schedule.
   7. **Information Technology (IT)**
      1. All IT solutions implemented at NASIC shall conform to and shall be in compliance with the NASIC Enterprise Architecture as published by the Enterprise Architecture Office (EAO) and approved by the NASIC Chief Information Officer (CIO). Deviations from the NASIC IT standards shall be addressed through the processes outlined in NASICI 33-108 and NASICI 90-103 accordingly. All contractors and personnel requiring accounts with elevated system/network privileges shall be trained and certified in accordance with DoD 8570.01-M – Information Assurance Workforce Improvement Program and DFARs 252.239-7001, Information Assurance contractor Training and Certification Program.
      2. All IT solutions developed under this effort shall be fully turned over to the Government without use restriction or limitation on the Government’s ability to provide the IT solution and/or source code to any other third party.
   8. **Contractor Manpower Reporting – Enterprise – wide Contractor Manpower Reporting Application**
      1. The contractor shall report all labor hours required for performance of services executed during the Government Fiscal Year no later than October 31 of each calendar year. The contractor shall completely fill in all required data fields using the following web address: <http://www.ecmra.mil/>.

Appendix 1: SIGINT Software

1. **Software Development.** All software shall be NASIC APPOMATTOX compliant; therefore, software that is not compatible with the APPOMATTOX architecture shall not be considered as a viable submission. Software that is intended to extend the general APPOMATTOX capabilities shall be considered on a case by case basis. Software that falls into this category shall require government approval prior to development or utilization for all software projects.
   1. Requirements Analysis. Perform analyses of infrastructure, operational, technical, functional, data and interface requirements. Design, develop, compare and evaluate potential technical solutions, concepts or alternatives to meet requirements. Transform statements of requirements into designs that satisfy NASIC needs in a sound technical and cost effective manner. Assess, determine and document the impacts that such solutions or other emerging technologies may have on NASIC mission.
      1. Provide system architectural designs, ensuring that all the requirements for the software items are allocated, refined and documented to facilitate detailed design. Designs shall elaborate and/or refine software requirements to form a basis for the development and implementation of the capabilities and shall conform to NASIC and government standards, and best practices. Designs shall also be consistent with unique user, service, command, agency or community oriented policies and procedures. The design process may include Preliminary, Detailed and Critical Design Reviews (PDRs, DDRs and CDRs).
   2. Perform software requirements analysis and document the software level requirements describing, at a minimum, the functional capability specifications, performance, interfaces, qualifications requirements, security specifications, human factors engineering, data definition and database requirements, installation and acceptance requirements. Document and present the results.
   3. Use of NDS. Maintain cognizance of developments in COTS and GOTS software. All development shall maximize the use of such software. Evaluate the planning performed for the use of NDS to ensure that all applicable PWS requirements have been met. Upon acquisition, evaluate the software to determine whether it performs as documented and is adequately documented. Ensure that the software will pass NASIC security and/or information assurance testing (e.g., CTO testing) prior to incorporating it into the software being developed.
   4. NDS software. For all software/hardware purchased or licensed, arrangements shall be made for licensing and maintenance agreements to transfer to the government upon purchase. All hardware and software must be compliant with NASIC IT architecture and standards.
   5. Develop/Implement/Code. Satisfy requirements by building system enhancements and/or new engineering developments. Perform software coding and testing for each software component/item in accordance with the approved SDP
   6. Modification of existing software and documentation. All software to be developed or enhanced shall utilize the design and coding standards of the existing software. All modifications to existing software shall be documented as updates to the existing documentation. All software and database development must adhere to NASIC-33-108 (NASIC IT Management CONOPS) and its successors and/or addendums. NASIC/SC shall determine which components of NASIC-33-108 will be tailored out on a case-by-case basis. (Ref: Table 7.3 – deliverable 12.) Anticipated documentation includes:
      1. Functional Description
      2. Data Base Specification
      3. User Manual
      4. Computer Operation Manual
      5. Maintenance Manual
      6. System/Subsystem Specification
      7. Data Requirements Document
      8. Software Unit Specification
      9. Implementation Procedures
      10. Training Material
   7. System Documentation. Software documentation furnished under this BPA shall be delivered in electronic format compatible with Microsoft Visio or Office products. Typical documentation shall provide instruction on how to startup, shutdown and troubleshoot the system and lists of hardware and software used and physical and logical interface diagrams. Software delivered in support of SIGINT analysis shall be placed into the NASIC project on G-FORGE. Where applicable, documentation shall address:
      1. Startup/shutdown procedures or scripts (to include reboots from unscheduled shutdowns)
      2. Key system processes & how to monitor/fix/restart any failed processes or process components
      3. Dependencies on other systems and resources
      4. Location of all log files pertinent to system resources and applications
      5. Rebuild procedures or scripts for a failed system including any procedures to rebuild storage or optional peripheral equipment
      6. Rack elevations (in Visio format)
      7. Hardware list
      8. Software list with versions
      9. System interconnection diagrams (in Visio format)
      10. Integration. Increase the functional capability of the NASIC APPOMATTOX baseline through system engineering process to fully integrate into the software, documentation and programmatic baseline.
      11. Perform system integration with other systems. Test the aggregates as they are developed, against their requirements. Perform software integration and testing. Integrate the software units and software components and test as the aggregates are developed. Ensure the requirements for the software are met.
      12. Perform system and software integration and testing.
      13. Perform software integration and testing. Integrate the software units and software components and test as the aggregates are developed. Ensure the requirements for the software are met.
      14. Perform software qualification testing for each software item.
      15. Conduct in-plant testing in accordance with the government-approved test plans. The approved test plans shall include properly formatted documentation necessary to obtain a CTO and other security and/or information assurance approvals. Document the results in the Test Report. (Ref: Table 7.3 – deliverable 12.)
      16. Upon successful completion of in-plant testing, install and test at NASIC in accordance with government-approved test plans. Prior to installation into the NASIC production environment, all approvals for installation and all CTO/security and/or information assurance approvals must have been granted by the government. Document the results in the Test Report.
   8. Configuration Management. Manage a CM and software maintenance process for assigned NASIC systems, activities, applications, databases and infrastructures; prepare and/or analyze BCRs and SPRs; provide implementation strategies in the form of Work Plans (WPs) for effort directed at single or multiple BCRs and/or SPRs or combinations of BCRs and SPRs as identified by the government; and implement software changes associated with BCRs and SPRs. Submit initial WPs and submit updates to WPs as requested by the government due to scheduling, requirements, or other changes.
   9. Software Problem Reports. Upon receipt of a Software Problem Report (SPR) from the government, investigate the problem to determine probable causes, potential resolutions, effort required, characterizations of various approaches, advantages and disadvantages of approaches, schedule, risks and cost of alternative courses of action to resolve, work around or mitigate the effects of the problem. Present results to the government via a WP for review, discussion, disposition, coordination and approval. Each WP shall contain testable performance requirements, deliverable items, delivery schedule, and cost. Perform the effort in accordance with the government-approved WP to close the SPR keeping the government cognizant of the status of the effort to achieve its goal of resolution within budget, performance and schedule. Participate in meetings to inform the government as to progress and/or need for approval to change the budget, scope, schedule or deliverables required as the situation may warrant. Deliver materials in compliance with NASIC configuration management, testing, installation practices and guidelines.
   10. Baseline Change Requests. Upon receipt of a Baseline Change Request (BCR) from the government, perform a requirements analysis to define possible and recommended approaches, effort required, relationships to other ongoing effort, advantages and disadvantages of approaches, schedule, risks and cost of alternatives. Present results via a WP to the government for review, discussion, coordination and approval. Each WP shall contain testable performance requirements, deliverable items, delivery schedule, and cost. Perform the effort in accordance with the government-approved WP to develop the baseline change keeping the appropriate government representatives cognizant of the status of the effort towards achieving the objective within budget, performance and schedule. Participate in meetings to inform the government as to progress and/or need for approval to change the budget, scope, schedule or deliverables required as the situation may warrant. Deliver materials in compliance with NASIC configuration management, testing, installation practices and guidelines.
   11. Certification and Fielding. Provide full documentation, functionality, and support to meet all testing, security, documentation and functional elements to transition the new or enhanced NASIC baseline capability to the field with full approval to operate at the NASIC and customer locations. Provide technical support for the installation, familiarization, certification and operation that will be maintained for each baseline and targeted customer. (Ref: Table 7.3 – deliverable 12.)
   12. Perform and support all certification and security activities required to acquire security certification and approval to field. Provide all security and program documentation, support the program security testing, and comply with the NASIC approval processes for fielding the APPOMATTOX baseline(s) within NASIC. Provide familiarization training for system capabilities.
   13. Distribute and install the developed baseline within the user environment, integrate and configure all required components required for site acceptance and operations.

Appendix 2: IMD Software

1. **7.6 Software Development.** All software shall be NASIC SAVANT compliant; therefore, software that is not compatible with the SAVANT KPS/VPS architecture shall not be considered as a viable submission. Software that is intended to extend the general SAVANT capabilities shall be considered on a case by case basis. Software that falls into this category shall require government approval prior to utilization for all software projects.
   1. **7.6.1 Requirements Analysis.** Perform analyses of infrastructure, operational, technical, functional, data and interface requirements. Design, develop, compare and evaluate potential technical solutions, concepts or alternatives to meet requirements. Transform statements of requirements into designs that satisfy NASIC needs in a sound technical and cost effective manner. Assess, determine and document the impacts that such solutions or other emerging technologies may have on NASIC mission.
      1. 7.6.1.1 Provide system architectural designs, ensuring that all the requirements for the software items are allocated, refined and documented to facilitate detailed design. Designs shall elaborate and/or refine software requirements to form a basis for the development and implementation of the capabilities and shall conform to NASIC and government standards, and best practices. Designs shall be consistent with unique user, service, command, agency or community oriented policies and procedures. The design process may include Preliminary, Detailed and Critical Design Reviews (PDRs, DDRs and CDRs).
      2. 7.6.1.2 Perform software requirements analysis and document the software level requirements describing, at a minimum, the functional capability specifications, performance, interfaces, qualifications requirements, security specifications, human factors engineering, data definition and database requirements, installation and acceptance requirements. Document and present the results.
   2. **7.6.2 Use of NDS.** Maintain cognizance of developments in COTS and GOTS software. All development shall maximize the use of such software. Evaluate the planning performed for the use of NDS to ensure that all applicable PWS requirements have been met. Upon acquisition, evaluate the software to determine whether it performs as documented and is adequately documented. Ensure that the software will pass NASIC security and/or information assurance testing (e.g., CTO testing) prior to incorporating it into the software being developed.
      1. **7.6.2.1 NDS software.** For all software/hardware purchased or licensed, arrangements shall be made for licensing and maintenance agreements to transfer to the government upon completion of this effort. All hardware and software must be compliant with NASIC IT architecture and standards.
   3. **7.6.3 Develop/Implement/Code.** Satisfy requirements by building system enhancements and/or new engineering developments. Perform software coding and testing for each software component/item in accordance with the approved SDP.
   4. **7.6.4 Modification of existing software and documentation.** All software to be developed or enhanced shall utilize the design and coding standards of the existing software. All modifications to existing software shall be documented as updates to the existing documentation. All software and database development must adhere to NASIC-33-108 (NASIC IT Management CONOPS) and its successors and/or addendums. NASIC/SC shall determine which components of NASIC-33-108 will be tailored out on a case-by-case basis. Anticipated documentation includes:
      1. Functional Description
      2. Data Base Specification
      3. User Manual
      4. Computer Operation Manual
      5. Maintenance Manual
      6. System/Subsystem Specification
      7. Data Requirements Document
      8. Software Unit Specification
      9. Implementation Procedures
      10. Training Material
   5. **7.6.5 System Documentation.** Software documentation produced shall be delivered in electronic format compatible with Microsoft Office products. Typical documentation shall provide instruction on how to startup, shutdown and troubleshoot the system and lists of hardware and software used and physical and logical interface diagrams. Software delivered in support of Tech ELINT Opana Frameworks shall be placed into the NASIC Integrated SIGINT Lab (ISL) Infocenter on G-FORGE. Where applicable, documentation shall address:
      1. Startup/shutdown procedures (to include reboots from unscheduled shutdowns)
      2. Key system processes & how to monitor/fix/restart any failed processes or process components
      3. Dependencies on other systems and resources
      4. Location of all log files pertinent to system resources and applications
      5. Rebuild procedures for a failed system including any procedures to rebuild storage or optional peripheral equipment
      6. Rack elevations
      7. Hardware list
      8. Software list with versions
      9. System interconnection diagrams
   6. **7.6.6 Integration.** Increase the functional capability of the NASIC SAVANT baseline through system engineering process to fully integrate into the software, documentation and programmatic baseline.
      1. **7.6.6.1** Perform system integration with other systems. Test the aggregates as they are developed, against their requirements. Perform software integration and testing. Integrate the software units and software components and test as the aggregates are developed. Ensure the requirements for the software are met.
      2. **7.6.6.2** Perform system and software integration and testing.
      3. **7.6.6.3** Perform software integration and testing. Integrate the software units and software components and test as the aggregates are developed. Ensure the requirements for the software are met.
      4. **7.6.6.4** Perform software qualification testing for each software item.
      5. **7.6.6.5** Conduct in-plant testing in accordance with the government-approved test plans. The approved test plans shall include properly formatted documentation necessary to obtain a CTO and other security and/or information assurance approvals. Document the results in the Test Report.
      6. **7.6.6.6** Upon successful completion of in-plant testing, install and test at NASIC in accordance with government-approved test plans. Prior to installation into the NASIC production environment, all approvals for installation and all CTO/security and/or information assurance approvals must have been granted by the government. Document the results in the Test Report.
   7. **7.6.7 Configuration Management.** Manage a CM and software maintenance process for assigned NASIC systems, activities, applications, databases and infrastructures; prepare and/or analyze BCRs and SPRs; provide implementation strategies in the form of Work Plans (WPs) for effort directed at single or multiple BCRs and/or SPRs or combinations of BCRs and SPRs as identified by the government; and implement software changes associated with BCRs and SPRs. Submit initial WPs and submit updates to WPs as requested by the government due to scheduling, requirements, or other changes.
   8. **7.6.8 Software Problem Reports.** Upon receipt of a Software Problem Report (SPR) from the government, investigate the problem to determine probable causes, potential resolutions, effort required, characterizations of various approaches, advantages and disadvantages of approaches, schedule, risks and cost of alternative courses of action to resolve, work around or mitigate the effects of the problem. Present results to the government via a WP for review, discussion, disposition, coordination and approval. Each WP shall contain testable performance requirements, deliverable items, delivery schedule, and cost. Perform the effort in accordance with the government-approved WP to close the SPR keeping the government cognizant of the status of the effort to achieve its goal of resolution within budget, performance and schedule. Participate in meetings to inform the government as to progress and/or need for approval to change the budget, scope, schedule or deliverables required as the situation may warrant. Deliver materials in compliance with NASIC configuration management, testing, installation practices and guidelines.
   9. **7.6.9 Baseline Change Requests.** Upon receipt of a Baseline Change Request (BCR) from the government, perform a requirements analysis to define possible and recommended approaches, effort required, relationships to other ongoing effort, advantages and disadvantages of approaches, schedule, risks and cost of alternatives. Present results via a WP to the government for review, discussion, coordination and approval. Each WP shall contain testable performance requirements, deliverable items, delivery schedule, and cost. Perform the effort in accordance with the government-approved WP to develop the baseline change keeping the appropriate government representatives cognizant of the status of the effort towards achieving the objective within budget, performance and schedule. Participate in meetings to inform the government as to progress and/or need for approval to change the budget, scope, schedule or deliverables required as the situation may warrant. Deliver materials in compliance with NASIC configuration management, testing, installation practices and guidelines.
   10. **7.6.10 Certification and Fielding.** Provide full documentation, functionality, and support to meet all testing, security, documentation and functional elements to transition the new or enhanced NASIC baseline capability to the field with full approval to operate at the NASIC and customer locations. Provide technical support for the installation, familiarization, certification and operation that will be maintained for each baseline and targeted customer.
       1. **7.6.10.1** Perform and support all certification and security activities required to acquire security certification and approval to field. Provide all security and program documentation, support the program security testing, and comply with the NASIC approval processes for fielding the SAVANT baseline(s) within NASIC. Provide familiarization training for system capabilities.
   11. **7.6.11** Distribute and install the developed baseline within the user environment, integrate and configure all required components required for site acceptance and operations.