Attachment A

Aircraft Maintenance and Operational Contract Statement of Work

Goddard Space Flight Center Wallops Flight Facility
Aircraft Office

Date: May 15, 2014

National Aeronautics and Space Administration
Wallops Flight Facility
Wallops Island, VA 23337

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Preface

During the period of performance of the Aircraft Maintenance and Operations Contract (AMOC), National Aeronautics and Space Administration (NASA) aircraft operations will be in a period of transition. New aircraft missions and vehicles will be brought online into the Goddard Space Flight Center (GSFC) Wallops Flight Facility (WFF) fleet. Unmanned Aircraft Systems (UAS) will be increasing in activity within the Aircraft Office with the opening of the Global Hawk Operation Center - East (GHOC-E) as well as flight operations of small, medium and large class UAS vehicles. This Statement of Work (SOW) contains core requirements that cover scheduled and unscheduled maintenance and associated flight activities for NASA WFF assigned aircraft and GHOC-E. This contract also contains an Indefinite Delivery Indefinite Quantity (IDIQ) mechanism where Task Orders can be issued for additional operational requirements (missions and special projects) for other NASA aircraft and activities. As a whole this contract will support NASA maintenance, engineering, project management, integration and mission support for airborne science research support, cargo airlift support, range surveillance, and a variety of other customer mission needs.

Given the changing climate, it is imperative that the potential Contractor maintain a dynamic and agile workforce (i.e.; possess surge capability and maintains a cost efficient workforce) in order to adapt quickly to the evolving NASA mission.

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1.0 Introduction

1.1 Overview

This SOW describes the work to be performed and the deliverables to be provided by the Contractor under the AMOC. The Contractor shall manage its workforce to ensure that quality products and safe services are provided to NASA, NASA customers, and other entities and governmental agencies as approved by NASA for the life of this contract.

1.2 Contract Structure

The AMOC contract is a cost plus fixed fee (CPFF) contract comprising of core requirements and an IDIQ mechanism. The contract will be divided as follows:

Core Requirements:

1) Scheduled and unscheduled maintenance of all NASA WFF assigned aircraft (see section 6.0);
2) Flight activities associated with scheduled and unscheduled maintenance of all NASA WFF assigned aircraft;
3) All mission management flight activities associated with B-200 King Air operations; and
4) Scheduled and unscheduled maintenance of the –GHOC-E.

IDIQ Requirements (see marked section):

1) Mission support of all NASA WFF assigned aircraft;
2) Other NASA Aircraft Services;
3) Visiting Aircraft Services;
4) Contract Aircraft Services;
5) WFF Airport Operations;
6) P-3 Re-wing Management/Oversight;
7) Facility Instrumentation Support; and
8) Other requirements as requested by NASA.

1.3 Work Supported or Not Supported by Approved Technical Data Definitions

For the purposes of this SOW, the Contractor shall use the following definitions:

1) *Supported by approved technical data* is defined as any maintenance activity where approved technical data exists.
2) *Not supported by approved technical data* is any maintenance activity where:
    a. Approved technical data does not exist;
    b. Technical data prohibits repair in-house; or
    c. The technical data instructs the Contractor to seek additional subject matter expert guidance before the maintenance action can be completed.[1]
3) *Technical data* refers to maintenance program cards, NASA/Department of Defense (DOD) technical orders and work cards, manufacturer's maintenance manuals, Aircraft Office (AO) unique work instructions and manuals, engineering work orders, fleet modification instructions (FMIs), engineering drawings, test procedures – flight research project instructions, Federal Aviation Administration (FAA) - approved original equipment manufacturer (OEM) standards, aircraft change directives (ACDs) (e.g. airworthiness directives, services bulletins, technical directives, etc.) and any other subscription, data, and specifications necessary in order to service, repair, and keep aircraft and their related systems in an airworthy and serviceable condition.
4) *Touch labor* is defined as hands-on labor related directly to maintaining, manufacturing, upgrading, processing, or testing.

1.4 Background

1.4.1 Wallops Flight Facility

Located in Wallops Island, VA, Wallop Flight Facility was opened in 1945 to perform aeronautic testing of early aircraft and missile designs on Wallops Island (7 miles south of the flight facility). In 1958 the Navy turned over the former Chincoteague Naval Air Station to NASA and the NASA Goddard Space Flight Center's Wallops Flight Facility was born. Today WFF continues to perform aircraft testing for the purposes of the NASA Airborne Science Program as well as operation of the NASA Scientific Balloon Program, NASA Sounding Rocket Program and launches of commercial and military satellites to low earth orbit. The airfield at WFF also supports research activities such as water ingestion, airport noise studies, aircraft/UAS flight testing, as well as typical military type training exercises.

1.4.1.1 WFF Assigned Aircraft

Aircraft currently assigned to WFF are shown in Table 1-1.

Table 1-1: WFF Aircraft and Engine Assignments

[1] *For example, an aircraft structural crack has exceeded Technical Orders limits for the repair and engineering must be contacted for disposition.*

Attachment A

Quantity	Type Aircraft	Mission	Type Engine
5[2]	P-3 Orion	Program Support Aircraft	Allison T56-A-14
1	B-200 King Air	Program Support, Mission Management Aircraft	Pratt and Whitney PT6A-42
4[3]	C-23 Sherpa	Program Support Aircraft	Pratt and Whitney PT6A-45-R

[2] *P-3 Orion BUNO 152735 is used for flight operations only. P-3 BUNO 161008 is currently a parts aircraft located at WFF. Buno, 153429, 153433, and 153457 are located in Aerospace Maintenance and Regeneration Group (AMARG) and are parts aircraft only. Aircraft located in AMARG require no scheduled maintenance activity.*

[3] *C-23 Serial Number 88-1864 is used for flight operations only. C-23 Serial Number 88-1861, 88-1862, 88-1867 are parts aircraft only located at WFF. Parts aircraft require no scheduled maintenance activity. One parts C-23 aircraft may be converted to a flyable aircraft at a late date. Conversion would be under a separate IDIQ task.*

2.0 Scope

2.1 Overview

The scope of the AMOC is to provide:

1) Three tier aircraft maintenance (scheduled and unscheduled);
2) Aircraft operational support; and
3) Airborne research and development of instrumentation and aircraft.

2.2 Support Locations

2.2.1 Wallops Flight Facility (WFF) Managed Locations

The Contractor shall provide aircraft maintenance and operational support at the following locations:

1) Wallops Flight Facility, Wallops Island, VA (primary operating site); and
2) Other locations within the contiguous United States (CONUS) and outside the contiguous United States (OCONUS) on as required basis by NASA.

2.3 NASA Center Unique Differences

The format of this SOW reflects WFF as the primary customer. Any unique requirements for work at other NASA centers or FOLs will be accounted for when work at those locations is required. NASA center or FOLs unique requirements shall take precedence over WFF requirements at that center while supporting that center's specific aircraft. GSFC/WFF requirements shall always apply to WFF assigned aircraft regardless of operating location.

2.4 NASA Contact References

Any reference in this SOW to the following NASA contacts shall also apply to that person's duly appointed designee:

1) NASA Contract Officer
2) NASA Contracting Officer Representative (COR)[4] / Chief of Maintenance
3) NASA Alternate Contracting Officer Representative (Alternate COR) / Operations Manager
4) NASA Business Manager
5) NASA Quality Assurance Manager

[4] *The COR and Alternate COR positions may be transferred to other NASA Civil Servant Aircraft Office positions during the life of this contract.*

3.0 References and Applicable Documents

3.1 Order of Precedence

In the event of a conflict between a NASA document cited in this SOW and a non-NASA document cited herein, the NASA document shall take precedence.

3.2 Acronyms

See Appendix A.

3.3 Definitions

See Appendix B.

3.4 Personnel Minimum Qualifications Reference

See Appendix C.

3.5 Applicable Documents

Below is a list of primary documents used for the management and operation of the Wallops Flight Facility Aircraft Office. Contractors shall comply with the current version of each document. Revisions to these documents may be released during the life of this contract. Contractors shall comply with all revisions or interim changes made to each document.

1) NPD 1440.6 NASA Records Management
2) NPD 7900.4 NASA Aircraft Operations Management
3) NPR 4100.1 NASA Materials Inventory Management Manual
4) NPR 8621.1 NASA Procedural Requirements for Close Call Reporting, Investigating, and Recordkeeping
5) NPD 8730.1 Metrology and Calibration
6) NPD 8730.2 NASA Parts Policy
7) NPD 8730.5 NASA Quality Assurance Program Policy
8) NPR 1800.1 NASA Occupational Health Program Procedures
9) NPR 7900.3 Aircraft Operation Management Manual
10) NPR 8735.1 Procedures for Exchanging Parts, Materials, Software, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program (GIDEP) and NASA Advisories
11) NPR 9130.1 NASA Financial Information System
12) GPD 8715.1 Goddard Space Flight Center Safety Policy
13) GPR 1700.1 Occupational Safety Program at Goddard Space Flight Center
14) GPR 7120.4 Risk Management

15) GPR 8715.2 Aviation Safety Program
16) 500-PG-4520.2.1 Electrical, Electronic and Electromechanical (EEE) Counterfeit Parts Avoidance Plan
17) 800-PG-1060.2.2 Airworthiness Process
18) 830-PG-1410.2.1 Aircraft/Unmanned Aerial System (UAS) Engineering and Configuration Management (CM) Process
19) 830-PG-8715.1.3 Aviation Risk Assessment Code Matrix and Guidelines
20) 830-FOM-0001 Flight Operations Manual
21) 830-FOM-0002 UAS Flight Operations Manual
22) 830-GMM-0001 General Maintenance Manual
23) 830-MAMC-0001 Aircraft Office Mission Anomaly and Mishap Contingency Plan
24) NASA-STD-5006 General Fusion Welding Requirements for Aerospace Materials Used in Flight Hardware
25) NASA-STD-5009 Nondestructive Evaluation Requirements for Fracture-Critical Metallic Components
26) NASA-STD-8719.9 Standard for Lifting Devices and Equipment
27) NASA-STD-8719.12 Safety Standard for Explosive, Propellants and Pyrotechnics
28) NASA-STD-8791.17 NASA Requirements for Ground-Based Pressure Vessels and Pressurized Systems (PVS)
29) NASA-STD-8739.4 Crimping, Interconnecting Cables, Harnesses, and Wiring
30) NASA-STD-8739.1 Workmanship for Polymeric Application on Electronic Assemblies
31) NASA-STD-8739.6 Implementation Requirements for NASA Workmanship Standards
32) NASA-SPEC-5004 Welding of Aerospace Ground Support Equipment and Related Nonconventional Facilities
33) AWS D17.1, Specification for Fusion Welding for Aerospace Applications
34) SAE AS9110 Aerospace Requirements for Aircraft Maintenance Organizations
35) ANSI/ESD S20.20 Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)
36) IPC J-STD-001E Joint Industry Standard, Requirements for Soldered Electrical and Electronic Assemblies
37) IPC J-STD-001ES Joint Industry Standard, Space Applications Electronic Hardware Addendum to J-STD-001E Requirements for Soldered Electrical and Electronic Assemblies (Chapter 10 of IPC J-STD-001ES does not apply)
38) GIDEP Requirements Guide S0300-BU-GYD-010
39) Applicable aircraft specific documents
40) Applicable NASA standards

4.0 4.0 Contract Management

4.1 General Requirements

4.1.1 Overview

The Contactor shall retain full responsibility for the performance requirements set forth in this contract.

The Contractor shall:

1) Perform in accordance with all applicable documents listed in SOW Subsection 3.5; and
2) Ensure all work is performed in accordance with approved technical data.

4.1.2 Normal Hours of Operation

The Contractor shall establish operating hours consistent with meeting the mission requirements at each location. The Contractor shall also provide personnel for varied work schedules to meet changing mission requirements.

4.1.2.1 Wallops Flight Facility

Typical hours of base operations for Wallops Flight Facility are:

8:00 AM to 4:30 PM (local time) Mon-Fri

All contractors may be requested by NASA to work outside these hours.

4.1.3 Contractor Information Program

The Contractor shall establish, maintain, and utilize a program to disseminate information to all personnel concerning issues of health, environmental, safety practices, and aircraft safety of flight items. Example items include:

1) Documentation of all items disseminated to Contractor personnel; and
2) Records showing all personnel are aware of the documentation.

4.1.4 Customer Focus

Contractor personnel shall be required to interact with NASA personnel and other NASA customers including Government agencies, commercial entities, and international visitors. The Contractor shall ensure all personnel act in a courtesy and professional manner.

4.2 Contract Maintenance Project Manager

4.2.1 Overview

The Contractor shall provide a full-time Contract Maintenance Project Manager (CMPM) located at WFF to oversee all work performed in this SOW. The Contractor shall provide an alternate CMPM if the primary is unavailable for duty. The CMPM or alternate shall:

1) Serve as the single-point-of-contact for all AMOC contract activities;
2) Have full authority to act for the Contractor on all matters relating to this contract; and
3) Respond to NASA CO and COR requests within a specific period established at the time of request.

The CMPM is the senior onsite representative of the AMOC and reports directly to the NASA Airworthiness and Maintenance Manager. The CMPM is responsible for managing the daily work of assigned contract maintenance personnel, develops contractor missions, projects and task estimates, provides manpower planning and historical data, tracks accrued costs, manages scheduling, and assigns contractor assets and capabilities in the most cost effective manner to enable the Aircraft Office mission. The CMPM is responsible for ensuring all maintenance activities, to include project installations, are conducted in accordance with the General Maintenance Manual, the contract, and any other applicable NASA Procedures and Guidelines. The CMPM will remain on site, though may deploy with an aircraft if necessary. Specifically, the CMPM is responsible for:

1) Administering and ensuring compliance with NASA quality assurance plans and policies as well as the Contractor's specific Quality Assurance Plan. NASA plans and policies shall take precedence over Contractor specifications if a conflict arises;
2) Maintaining sufficient staff to support maintenance and mission operations to include instrument installation support;
3) Administering the Tool Control; Foreign Object Debris Prevention; Inspection, Measuring Test Equipment; Aviation Ground Support Equipment; and training programs;
4) Oversight of all maintenance activities and technicians for assigned aircraft;
5) Ensuring sufficient Aircraft Life Support Equipment is on board the aircraft;
6) Ensuring required aircraft parts are properly procured for assigned aircraft;
7) Ensuring assigned maintenance personnel are properly trained, certified and so designated;
8) Attending regularly scheduled planning meetings with management to ensure required aircraft scheduled and unscheduled maintenance are properly planned for;
9) Arranging for logistics support to include shipping to support experimenters;
10) Ensure the aircraft logs and records are properly maintained;
11) Ensuring NASA Aircraft Management Information System (NAMIS) Maintenance and Logistics is used properly to track all aircraft parts and maintenance activities; and
12) Supporting the Inter-Center Aircraft Operations Panel Reviews when directed.

4.2.2 Availability

The CMPM or alternate shall be available during normal WFF hours of operation (see SOW Subsection 4.1.2) and within one (1) hour after being contacted to meet with NASA personnel. After normal WFF

hours of operation, the CMPM or alternate shall be available within two (2) hours after being contacted by NASA to meet.

4.3 Meetings

4.3.1 Required Meetings

The Contractor shall support the meetings listed below. The Contractor shall attend all meetings prepared to discuss activities or present data related to the contract, airfield activities, missions, maintenance, or other programs. For those meetings marked "Contractor presented" the Contractor shall be prepared to present the agenda (with input from NASA), invite attendees, present the meeting, prepare meeting minutes, and track all action items generated during the meeting. Other meetings may be required by NASA during the life of this contract.

<u>Management</u>

1) Aircraft Office department heads meeting (weekly, CMPM only when presence requested by NASA)
2) Aircraft Office status meetings (weekly);
3) Contract evaluation meetings (quarterly);
4) Scheduling meetings (monthly);
5) Operation meetings (weekly);
6) All-hands meetings (quarterly); and
7) Contract Monthly Status Reviews (monthly – Contractor presented).

<u>Maintenance</u>

1) Daily aircraft status meetings (daily – Contractor presented);
2) Aircraft in-phase/major aircraft inspection briefing (weekly – Contractor presented); and
3) Material logistics reconciliation (monthly).

<u>Safety</u>

1) Aviation safety meetings (quarterly).

4.4 Workforce Requirement

4.4.1 Workforce

4.4.1.1 General Requirements

The Contractor shall provide a qualified Contractor workforce to support this SOW. The Contractor shall:

1) Provide fully trained, qualified, and certified Contractor personnel in sufficient numbers to manage, supervise, and perform work under this contract.; and

2) Ensure no impacts due to position vacancies or personnel qualifications. The Contractor shall preclude staffing that may introduce single point failures. Qualified replacement personnel shall be provided within fifteen (15) days of a vacancy.

4.4.1.2 Security Clearances

The Contractor shall:

1) Provide personnel with security clearances up to SECRET, or who are eligible to obtain a SECRET clearance, based on specific program requirements as required; and
2) When identified by the government, all personnel assigned to support specific payload development, integration, operations, deployments, and other aircraft activities shall have a SECRET clearance in support of the Global Hawk.

4.4.1.3 Surge Requirements

The Contractor shall support surge demands in staffing or workloads dictated by mission, operations, or maintenance. Examples include:

1) Adding multiple shifts;
2) Adjusting shifts; and
3) Part time/temporary personnel.

The Contractor shall utilize existing personnel assigned to core requirement activities, as practical, to support IDIQ activities before implementing surge capabilities.

4.4.1.4 Overtime

The Contractor shall notify the NASA COR and CO of when overtime is required prior to performing the any work associated with overtime.

4.4.2 Physicals

The Contractor shall ensure personnel obtain physical examinations in accordance with 830-FOM-0001 *Flight Operations Manual*, 830-GMM-0001 *General Maintenance Manual*, NPR 7900.3 *Aircraft Operations Management*, and other applicable regulations governing the requirements of this contract.

4.4.3 Training

4.4.3.1 Training – Safety and Health

The Contractor shall provide safety and health training to meet the requirements in 830-GMM-0001 *General Maintenance Manual* for all employees based on job assignment within ninety (90) calendar days or employment and anytime an employee is reassigned to new duties that require additional safety training.

4.4.3.2 Training – Government Provided

NASA will provide job specific training classes, such as NAMIS. The Contractor shall ensure personnel attend these classes. The Contractor shall provide NASA with a list of proposed attendees to attend the each required class. The Government will approve the attendees prior to training.[5]

4.5 Travel

4.5.1 General Travel

The Contractor shall provide travel arrangement services for Contractor personnel.

The Contractor shall:

1) Travel predominately using commercial air unless requested by NASA to travel using Government air or other conventional modes.
2) Travel during normal duty hours to prevent excessive overtime unless pre-approved by NASA.
3) Provide services in accordance with Joint Travel Regulations or Federal Travel Regulations as applicable.

4.5.2 Passports and Visas

The Contractor shall ensure that all personnel supporting OCONUS activities possess official US Government passports and obtain visas under NASA sponsorship when required.

4.6 Configuration Control

4.6.1 Configuration Management

The Contractor shall provide and maintain configuration management of all aircraft and support equipment. The Contractor shall:

1) Maintain the configuration of all NASA aircraft and support equipment in accordance with all approved drawings, specifications, and other data; and
2) Maintain configuration for type certificated aircraft.[6]

[5] *Class size or job requirements may restrict or limit the number of approved attendees.*
[6] *This would include any supplemental type certificates and field-approved alterations incorporated into the aircraft by NASA approved authorities.*

4.7 Document and Data Management

4.7.1 NASA Aircraft Management Information System (NAMIS)

The Contractor shall:

1) Use the Government provided NASA Aircraft Management Information System (NAMIS)[7] for aircraft operations, maintenance, and logistics support.
2) Use the following NAMIS application modules in accordance with NPR 7900.3 *Aircraft Operations Management*:
    a. Flight Records/Currency;
    b. Flight Data Capture;
    c. Aircraft Maintenance;
    d. Flight Scheduling Application;
    e. Aircraft Logistics Spares Inventory; and
    f. Others as deemed necessary by NASA.

4.7.2 NAMIS Application Administrator

The Contractor shall provide a NAMIS Application Administrator and alternate with expertise on the day-to-day use of the NAMIS system. Example application administrator tasks include:

1) Manage Contractor and NASA personnel access permissions and assigned roles;
2) Create templates for assigned assets; and
3) Establish inspection baseline information including NASA approved deviations.
4) Day to day use of NAMIS to support maintenance and QA functions.

4.8 Information Technology Systems

The Contractor shall:

1) Adhere to NASA policies for the management of information technology (IT) resources;
2) Utilize the Government provided IT systems to accomplish the requirements in this SOW; and[8]
3) Adhere to NASA security procedures for the unauthorized use of Government computer systems.

The Contractor shall also provide any necessary software subscriptions requested by NASA. NASA reserves the right to end subscriptions when they are no longer required. Example subscriptions include:

1) CAMP Systems Aircraft Maintenance Program (Quarterly)

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[7] *NAMIS is an integrated automated database used to capture aircraft operations, maintenance, and logistics information in support of NASA Centers that operate aircraft. NAMIS will track all scheduled inspections (inspections based on calendar, hourly, cycles, or events) and user discrepancies (unscheduled maintenance) "real time" that are reported against aircraft components, equipment, and special tooling.*

[8] *NASA uses Microsoft Office applications for everyday business operations.*

2) CAMP Systems Aircraft Schedule Program (Annually)
3) Four Verizon Broadband Wireless Data Packages
4) Three XM Weather Packages
5) Hawker Beechcraft Maintenance Manuals
6) Pratt and Whitney Maintenance Manuals
7) Trend Group NASA 8 Engine Monitor
8) ForeFlight Flight Map Data
9) Universal Avionics (P-3 Database)
10) Universal Avionics (C-23 Database)
11) Universal Weather (P-3 Database)
12) Jepesen NASA 8 Database Garmin 400/500
13) Jepesen NASA 8 Database GMX200
14) Avantext

4.9 Support Activities

4.9.1 Vehicles and Fuel

The Government will not provide vehicles for this contract. Fuel and maintenance shall be covered by the Contractor for contractor provided vehicles. The Government will provide purpose vehicles such as tugs, air stairs, etc. The contractor shall maintain and fuel any government provided purpose vehicles.

4.10 Reports

4.10.1 Federal Aviation Inter-Active Reporting (FAIRS)

Federal Aviation Inter-Active Reporting (FAIRS): Contractor shall produce a cost report in accordance with the FAIRS required cost categories by individual aircraft tail.

FAIRS reporting procedures will be documented and submitted for review/approval by the Wallops Flight Facility Aircraft Office, due within 30 days of contract award and thereafter at monthly periods from initial contract award due with the 533M submission.

Current applicable FAIRS federal aircraft reporting cost categories (not inclusive):

Fixed Costs
Administrative overhead
Operation Overhead
Flight Crew Costs – Fixed
Maintenance – Fixed
Commercial Aviation Service
Other Fixed Operating Cost
Maintenance – Variable
Fuel, Oil, Lubricants & Gases

Mission Related Costs
Other Variable Operating Cost
Permanent Mods & Upgrades
Aircraft Support Assets (SE, Tools, etc.)

See FAIRS reporting requirements in OMB Circular A-126 *Improving the Management and Use of Government Aircraft*, GSA FMR 102-33 *Management of Government Aircraft*, and NPR 9130.*1NASA Financial Information System*.

Government Quarterly additional reporting requirements: The contractor shall provide a supplemental report for all costs estimated to be accrued through the end of the calendar month ending a government fiscal quarter. Report will include all estimated costs to be accrued including materials and unfilled orders anticipated to be delivered within the fiscal quarter.

4.10.2 Other Reports

NASA reserves the right to requests additional reports (operational, maintenance, business, etc.) during the life of the contract.

5.0 Flight Operations

5.1 Projected Flight Schedule

5.1.1 Projected Aircraft Usage

The Contractor shall support the projected aircraft usage shown in Table 6-1 below. Projected flight hours are assumed to be the minimum required to maintain the aircraft in an airworthy state due to scheduled maintenance and support mission requirements. B-200 King Air projected flight hours cover scheduled maintenance as well as day to day flight operations as a mission management aircraft.

Table 6-1: Annual Flight Hour Projection

Aircraft	Projected Flight Hours/Year of Contract[9]	Minimum Hours Ever Flown in a Year	Maximum Hours Ever Flown in a Year to Date
P-3 Orion	250	20	523.4
B-200 King Air	200	20	300
C-23 Sherpa	300	20	445.3

5.1.2 Flight Operations Support

The Contractor shall provide the following support services for all aircraft:

1) Provide aircraft launch, recovery, and maintenance as required Mon-Sun at Wallop Island, VA, forward operating locations, or any other aircraft destination or deployed location based on flight schedule requirements; and
2) Provide support for CONUS and OCONUS deployments as defined by separate IDIQ task orders.

5.2 Duty Office

5.2.1 Scheduler/Operations Monitor

The Contractor shall create and manage a daily and weekly flight schedule for all aircraft operated by AO. The Contractor shall coordinate the requests generated by NASA managers, flight crews, project managers, and others associated with flight operations to create an efficient use of aircraft assets. The Scheduler/Operations Monitor shall support flight operations by managing the daily flight schedule, answering operational questions, and assist with ground and flight request.

[9] *Hours are an average value and cover approximate yearly flight hours required for scheduled and unscheduled maintenance as well as mission flight operations. Hours associated with the B-200 aircraft are part of the core requirement of this contract unless a non-Mission Management flight operation is conducted which will be covered under an IDIQ task order.*

The Contractor shall utilize the NAMIS software package to create flight schedules and track crew qualification and training needs.

The Contractor shall manage and be the primary point of contact (POC) for B-200 mission management flight requests and process all requests to receive NASA approval via NASA Form 1653, *Mission Management Flight Request* to fly mission management flights. NASA reserves the right to perform this function if the Contract POC is unavailable.

5.3 Flight Crew

5.3.1 General Requirements

The Contractor shall provide flight crew personnel to operate and support AO aircraft. Operational requirements will be provided to the Contractor by the NASA COR. The Contractor shall:

1) Ensure program support (project) aircraft operations are conducted in accordance with WFF/AO approved operational directives and NPR 7900.3, *Aircraft Operations Management*. Aircraft will normally be operated as public use aircraft for this mission;
2) Conduct training in mission management aircraft on a non-interference basis with mission management operations. NASA will use mission management aircraft for some types of recurrent and other required qualification training;
3) Conduct operations in accordance with 14 Code of Federal Regulations Part 91, *General Operating and Flight Rules*, and the 830-FOM-0001 *Flight Operations Manual* when flying mission management aircraft transporting officially approved passengers in response to Government travel requirements. The Contractor aircrew shall operate NASA mission management aircraft as civil aircraft when carrying passengers;
4) Require aircrew to input aircraft discrepancies into the NAMIS database in accordance with NPR 7900.3, *Aircraft Operations Management Manual* and 830-GMM-0001 *General Maintenance Manual*; and
5) Report close calls and complete other flight reporting as required.

5.3.2 Performance Standards

The Contractor flight crew shall:

1) Comply with the provisions set forth in NPR 7900.3, *Aircraft Operations Management*, FAA regulations, original equipment manufacturer (OEM), and other applicable directives, regulations, policies, and instructions; and
2) Maintain performance standards in accordance with 830-GMM-0001 *General Maintenance Manual* and 830-FOM-0001 *Flight Operations Manual*. Examples include:
    a. Safety Precautions: Identified in the applicable aircraft technical data;
    b. Airfield Operations;
    c. Normal Procedures: Identified in the applicable aircraft technical data;
    d. Emergency Procedures: All applicable boldface emergency procedures demonstrated without reference to the checklist;

e. Aircraft Systems: An examiner may randomly select any system(s) for the student to demonstrate adequate skill and knowledge; and
f. System Limitations: Demonstrated without reference to the checklist.

5.3.3 Proficiency, Currency, and Certification

The Contractor shall ensure flight crew personnel maintain proficiency, currency, and annual requirements in accordance with NPR 7900.3, *Aircraft Operations Management*, 830-FOM-0001 *Flight Operations Manual*, and other applicable AO work instructions.

The Contractor shall:

1) Maintain aircrew training records, which shall include: aircrew qualifications, copies of medical and FAA certificates, training status, and experience. The Contractor shall provide copies of these records to NASA; and
2) Operate the designated aircraft in compliance with the current editions of the applicable aircraft flight manuals and other official aircraft documents.

The Government will provide training and qualification checks for Contractor aircrew, including required periodic simulator training. The Contractor shall obtain, from an authorized flight surgeon, flight physicals for aircrew.

The Government may, with appropriate notification to the Contractor, designate the requirement for contract aircrews to operate different aircraft, or the existing aircraft with configuration changes. The Government will provide additional training when aircraft equipment, configuration, model, or type is changed. Mixed Contractor and Government aircrew may be required on an occasional basis to perform aircrew training, functional checks, technical evaluations, or mission operations. The Contractor shall provide contract aircrew to support flight operations of other aircraft not assigned to WFF; this will be accomplished under and IDIQ task order.

5.3.4 Flight Instructors

The Contractor shall provide flight instructor(s) within 15 calendar days following written notification from the COR. Example duties include:

1) Serve as aircrew in accordance with NPR 7900.3, *Aircraft Operations Management* and 830-FOM-0001 *Flight Operations Manual*;
2) Perform ground school instruction in aircraft systems, flight characteristics, checklists, and other subjects related to the aircraft under instruction;
3) Perform preflight, through-flight, and post-flight inspections on NASA aircraft in accordance with the aircraft flight manual or NASA approved flight crew checklists and procedures;
4) Perform aircrew check flights in accordance with the aircraft specific Flight Manual, approved technical data and NASA approved flight instructions;
5) Perform normal and emergency procedures in accordance with the aircraft specific Flight Manual and NASA approved flight crew checklists;

6) Perform functional check flights or operational checks on aircraft in accordance with 830-GMM-0001 *General Maintenance Manual* and applicable aircraft checklists; and
7) Perform/support readiness reviews on aircraft prior to deployment in accordance with 800-PG-1060.2.2 *Airworthiness Review Process*.

5.3.5 Pilots

The Contractor shall provide pilot(s) within 15 calendar days following written notification from the COR. Example duties include:

1) Serve as aircrew in accordance with NPR 7900.3, *Aircraft Operations Management* and 830-FOM-0001 *Flight Operations Manual*;
2) Perform preflight, through-flight, and post-flight inspections on NASA aircraft in accordance with the aircraft specific flight manual or NASA approved flight crew checklists and procedures;
3) Perform normal and emergency procedures in accordance with the aircraft specific Flight Manual and NASA approved flight crew checklists;
4) Perform functional check flights or operational checks on aircraft in accordance with 830-GMM-0001 *General Maintenance Manual*, and applicable aircraft checklists;
5) Perform/support readiness reviews on aircraft prior to deployment in accordance with 800-PG-1060.2.2 *Airworthiness Review Process*; and
6) Support mission planning activities as required by NASA.

5.3.6 Flight Engineers

The Contractor shall provide Flight Engineer(s) within 15 calendar days following written notification from the COR. Example duties include:

1) Serve as aircrew in accordance with NPR 7900.3, *Aircraft Operations Management* and 830-FOM-0001 *Flight Operations Manual*;
2) Perform preflight, through-flight, and post-flight inspections on NASA aircraft in accordance with the aircraft flight manual or NASA approved flight crew checklists and procedures;
3) Perform normal and emergency procedures in accordance with the aircraft specific Flight Manual and NASA approved flight crew checklists;
4) Perform functional check flights or operational checks on aircraft in accordance with 830-GMM-001 *General Maintenance Manual* and applicable aircraft checklists;
5) Perform/support readiness reviews on aircraft prior to deployment in accordance with 800-PG-1060.2.2 *Airworthiness Review Process*;
6) Review and determine that aircraft weight and center of gravity are within limits for flight in accordance with NPR 7900.3, *Aircraft Operations Management* and aircraft specifications and ensure copy of weight and balance data is carried aboard aircraft;
7) Perform ground engine runs when requested by maintenance personnel. Flight engineers who perform ground engine runs shall be certified in accordance with 830-GMM-0001 *General Maintenance Manual*;
8) Assist in trouble-shooting aircraft systems if requested by maintenance personnel;
9) Participate in flight operations training and dress rehearsals scenarios;

10) Perform instructor or examiner flight engineer duties, if designated, in accordance with applicable directives;
11) Perform pre-mission and post-mission planning activities that are required to ensure that all cargo and payloads operations meet all flight safety requirements;
12) Initiate pre-mission activities prior to arrival of other mission personnel. Pre-mission activities include cargo load planning, cargo preparation, material handling equipment preparations and positioning, cargo-loading procedures, customer coordination, and cargo aircraft center-of-gravity requirements as required;
13) Operate cargo loaders used to support cargo transport operations and other required aircraft loading and offloading equipment;
14) Plan, coordinate, and execute transportation of cargo and mission payloads, and associated support equipment to ensure that all cargo and payloads meet required flight schedules and are delivered safely to the required destination; and
15) Perform maintenance functions on assigned aircraft.

5.3.7 Aft Observers

The Contractor shall provide Aft Observers within 15 calendar days following written notification from the COR. Example duties include:

16) Serve as aircrew in accordance with NPR 7900.3, *Aircraft Operations Management* and 830-FOM-0001 *Flight Operations Manual*;
17) Perform preflight, through-flight, and post-flight inspections on NASA aircraft in accordance with the aircraft flight manual or NASA approved flight crew checklists and procedures;
18) Perform normal and emergency procedures in accordance with the aircraft specific Flight Manual and NASA approved flight crew checklists;
19) Perform functional check flights or operational checks on aircraft in accordance with 830-GMM-001 *General Maintenance Manual* and applicable aircraft checklists;
20) Perform/support readiness reviews on aircraft prior to deployment in accordance with 800-PG-1060.2.2 *Airworthiness Review Process*;
21) Assist in trouble-shooting aircraft systems if requested by maintenance personnel;
22) Participate in flight operations training and dress rehearsals scenarios;
23) Perform instructor or examiner Aft Observer duties, if designated, in accordance with applicable directives; and
24) Perform maintenance functions on assigned aircraft.

6.0 Maintenance

6.1 General Requirements

6.1.1 Overview

The Contractor shall provide for three-tier (organizational, intermediate, and depot level) aircraft maintenance support for NASA aircraft and support equipment (airframes, engines, appliances, and other equipment).[10] WFF does not have facilities or infrastructure to support depot level maintenance on site.

6.1.2 Aircraft Maintenance Program

The objective of the three-tier maintenance program, as described in Section 6.3, is to maintain aircraft and equipment while optimizing the use of personnel, facilities, material, and funds to achieve mission success. The Contractor shall:

1) Implement aircraft/equipment maintenance programs in accordance with 830-GMM-0001 *General Maintenance Manual* and approved technical data;
2) Ensure aircraft released for flight are airworthy (safe and operable) and properly configured to meet mission requirements as defined in the 830-GMM-0001 *General Maintenance Manual* and 830-FOM-0001 *Flight Operations Manual*;
3) Be responsible for planning, scheduling, managing, costs monitoring, forecasting, and execution of the maintenance program;
4) Ensure that planning provides the most effective and efficient use of human capital, facilities, and equipment, while reducing unscheduled maintenance, and allowing for aircraft and equipment to be returned to a flyable/usable condition with the least impact on mission success; and

6.1.3 NASA Airworthiness and Maintenance Manager

The NASA Airworthiness and Maintenance Manager (also performs the function or COR and known as the Chief of Maintenance) is the Government's point of contact for all matters associated with the three-tier maintenance program and oversees the Contractor's overall maintenance effort. The Contractor shall keep the NASA Airworthiness and Maintenance Manager (A&MM) informed on aircraft/equipment status as it applies to scheduled and unscheduled maintenance and other activities as requested. The A&MM provides the necessary oversight/insight, authority to proceed, and related technical coordination on behalf of the Government. The A&MM is not responsible for the scheduling, planning, forecasting or execution of the Contractor's maintenance efforts.

[10] *The Government reserves the right to perform occasional aircraft maintenance and mission support activities on Government owned aircraft, engines, accessories, and other support equipment. The Government will coordinate this activity with the Contractor.*

6.1.4 Maintenance Discipline

The Contractor shall:

1) Not perform any work on aircraft/equipment without approved technical data;
2) Comply with all technical data to ensure required repairs, inspections, and documentation are completed in a safe and effective manner;
3) Notify the A&MM of any safety-of-flight anomalies discovered during maintenance activities;
4) Adhere to approved technical data to maintain aircraft and equipment in accordance with Society of Automotive Engineers (SAE) standards;
5) Ensure technical data is in the immediate work area and is open to the appropriate section for quick reference throughout the period of maintenance; and
6) Ensure personnel follow all approved technical data to make certain all warnings and cautions are adhered to and, upon completion of the maintenance task, reviewed again to ensure all requirements have been accomplished.

6.1.5 Global Hawk Operations Center – East (GHOC-E) Operations

WFF operates and maintains a Global Hawk ground station (Global Hawk Operations Center- East (GHOC-E)) in support of NASA Global Hawk operations.

The Contractor shall operate and maintain (mechanically, electrically, IT, avionics, RF, satellite communication, etc.) this ground station. The contractor shall be responsible for both the scheduled and unscheduled maintenance of the GHOC-E.

6.1.6 Aircraft Change Directive Compliance

The Contractor shall comply with all aircraft change directives (ACDs) approved by NASA (e.g. fleet modification instructions, one time inspections, one time replacements, service changes, customer bulletins, engine bulletins, airframe changes received from aircraft or component manufacturers, the FAA or the DoD).

6.2 Maintenance Control

The Contractor shall establish a Maintenance Control and staff appropriately to serve as the centralized control point for all scheduled and unscheduled maintenance activities. The Contractor shall:

1) Plan, schedule, forecast, and execute a sound maintenance program for maintenance identified in SOW Subsection 6.1.2;
2) Staff maintenance control when maintenance, servicing, and flight operations are being conducted;
3) Conduct aircrew debriefs at the termination of each sortie/mission or when a sortie/mission is aborted;
4) Serve as the single point-of-contact, communicating between the NASA A&MM, NASA Quality Assurance Manager, and NASA Operations Manager on all matters affecting aircraft status,

availability, and initial notification of close call and mishap reporting. This includes prompt reporting with justification of estimated time in commission (ETIC) changes after initial notification, changes in established priorities, plans and schedules;

5) Coordinate all aircraft engine runs and all aircraft ground movements conducted by maintenance personnel;
6) Be proficient in the use of the NAMIS automated database (refer to SOW Subsection 4.7.1 of this SOW);
7) Review and approve all NASA Form 1671A, *Aircraft Maintenance Packet*, inputs generated in NAMIS;
8) Perform documentation and system reviews using NAMIS prior to generating a NASA Form 1673A, *Flight Preparedness Report*, to certify and release an aircraft for flight;
9) Ensure aircraft that are scheduled for cross-country flights or CONUS/OCONUS missions will not have a scheduled maintenance event come due while the aircraft is off-site. If maintenance does come due during a deployed mission due to mission length then coordinate with NASA how to accomplish the required maintenance off-site;
10) Keep the NASA A&MM informed of intentions to dispatch personnel for aircraft off-station repair actions in accordance with 830-GMM-0001 *General Maintenance Manual*;
11) Update the flight schedule as changes occur to schedules, aircraft configuration, and aircraft status that impact aircraft flight scheduling activities;
12) Initiate, approve, track, and report all cannibalizations actions, regardless of location, using 830-GMM-0001 *General Maintenance Manual*. The Contractor shall not cannibalize any NASA aircraft that is in storage without prior approval of the NASA A&MM;
13) Adhere to the Functional Check Flight (FCF) process in accordance with 830-GMM-0001 *General Maintenance Manual* and 830-FOM-0001 *Flight Operations Manual*. Ensure all documentation and aircrew briefs required to support this program are fully supported;
14) Conduct pre-dock and de-dock meetings for planned major aircraft inspections and aircraft being inducted into depot level maintenance in accordance with 830-GMM-0001 *General Maintenance Manual*;
15) Adhere to the notification policy and documentation requirements for reporting aircraft ground aborts, air aborts, and maintenance delays in accordance with 830-GMM-0001 *General Maintenance Manual* and 830-FOM-0001 *Flight Operations Manual*;
16) Support Airworthiness and Flight Safety Review Board (AFSRB) and Readiness Reviews in accordance with 800-PG-1060.2.2 *Airworthiness Review Process*; and
17) Adhere to the processes outlined in 830-GMM-0001 *General Maintenance Manual*, to downgrade or make symbol changes on NASA Form 1671A, *Aircraft Maintenance Packet*.

6.2.1 Aircraft Release Authority

NASA will release and retain aircraft release authority via the NASA Quality Assurance Manager or designated NASA Civil Servant. If a Contractor is given release authority by NASA then the Contractor shall:

1) Ensure that personnel performing maintenance release of aircraft and aircraft components are qualified and certified in accordance with SAE AS9110 *Aerospace Requirements for Aircraft Maintenance Organizations* standards;

2) Provide the NASA A&MM with a list of personnel who are trained and authorized to certify an aircraft is "airworthy." This list shall include those personnel authorized to utilize this authority at satellite maintenance controls (e.g. FOLs) at the NASA locations specified within this SOW; and
3) Include processes that will be utilized for personnel authorized to release aircraft for flight at deployed sites away from locations specified within this SOW.

6.3 Maintenance Activities

6.3.1 Aircraft Maintenance

The Contractor shall perform scheduled and unscheduled three-tier aircraft maintenance (organizational, intermediate, and depot level) in accordance with approved technical data.

6.3.2 Powered, Non-Powered, and Calibrated Support Equipment

The Contractor shall perform all scheduled and unscheduled maintenance for powered, non-powered, and calibrated support equipment.

6.3.3 Off-Site Maintenance

The Contractor shall:

1) Follow the requirements outlined in 830-GMM-0001 *General Maintenance Manual* for coordinating off-site maintenance actions;
2) Obtain approval to dispatch Contractor personnel from the NASA A&MM to troubleshoot/repair off-site aircraft; and
3) Coordinate the shipping/receiving of parts and equipment required for off-site repairs/maintenance.

6.4 Production Control

The Contractor shall establish a Production Control point of contact to serve as the centralized control point for all scheduled and unscheduled maintenance activities as they relate to intermediate and depot level (I-D) maintenance conducted at the AO. The Contractor shall:

1) Plan, schedule, forecast, and execute a sound maintenance program;
2) Serve as the single point-of-contact for overhaul, repair, check, test, certification, modification, or manufacturing processes accomplished in the I-D support shops;
3) Ensure priorities for repairs, upgrades, manufacturing, and logistics are set based on requirements to support NASA missions;
4) Be proficient in the use of the NAMIS automated database (refer to SOW Subsection 4.7.1 of this SOW);

5) Review and approve all NASA Form 1671A, *Aircraft Maintenance Packet* inputs generated in NAMIS to support I-D support shops;
6) Initiate, approve, track, and report all cannibalizations actions in accordance with 830-GMM-0001 *General Maintenance Manual*;
7) Conduct assessment of the I-D maintenance activities for each month by conducting trend analysis, reviewing "cannot duplicate" discrepancy rates, reviewing and making recommendations to improve adverse trends and improve overall I-D level turn-around times for component repairs;
8) Ensure supply stock levels do not fall below approved levels for items repairable onsite;
9) Ensure strict accountability and control of all components, assets, and equipment that enter the support areas for repair or other maintenance related function;
10) Maintain an up-to-date a listing and readily identify those repairable assets that "are not repairable on station" at AO. The Contractor shall review this listing every thirty (30) days and submit changes in accordance with 830-GMM-0001 *General Maintenance Manual* if required;
11) Maintain an up-to-date a listing and readily identify those repairable assets that "are repairable on station" at WFF. The Contractor shall review this every thirty (30) days and submit changes in accordance with 830-GMM-0001 *General Maintenance Manual* if required;
12) Coordinate the dispatching of personnel with Maintenance Control to support on-aircraft maintenance requirements; and
13) Adhere to the processes outlined in 830-GMM-0001 *General Maintenance Manual*, to downgrade or make symbol changes on the NASA Form 1671A, *Aircraft Maintenance Packet*.

6.5 Aircraft Support Capabilities

6.5.1 General

The Contractor shall provide support services for scheduled and unscheduled maintenance to include the repair, alteration, fabrication, test and check, reclamation, rebuild and overhaul of parts, assemblies, sub-assemblies and end-items in accordance with approved technical data. Maintenance services include:

1) Electrical Systems;
2) Avionics;
3) Communications and Navigation (COM/NAV) Systems;
4) Pneudraulics Systems and Components;
5) Mechanical Accessories;
6) Sheet Metal and Composites;
7) Welding;
8) Battery;
9) Paint and Corrosion Prevention and Treatment;
10) Wheel and Tire Assembly/Disassembly;
11) Manufacturing;
12) Machining;
13) Modification of End-Items;
14) Test and Check Capabilities;

15) Rework, Repair, and Inspect Powered and Non-Powered Support Equipment; and
16) "I" level Calibration of Designated Equipment

6.5.2 Equipment Repair Listing

The Contractor shall troubleshoot, check, test, and repair all items (equipment, parts, engines, propellers, etc.) in house or off-site.

6.5.3 Special Equipment and Tooling

The Contractor shall:

1) Ensure all special equipment and tooling is serviceable; and
2) Maintain the equipment in the proper hardware and software configurations to test all assigned assets. The Contractor shall coordinate equipment needs with the COR to ensure government furnished equipment is utilized when available.

6.5.4 Aviation Liquid Oxygen Storage and Operation

The Contractor shall:

1) Maintain the storage tank(s) and liquid oxygen cart(s);
2) Ensure a sufficient supply of liquid oxygen remains in the storage tank(s) at all times; and
3) Provide a certified operator, properly trained and maintains currency, of the assets capable of servicing the storage equipment and any aircraft requiring liquid oxygen.

The Contractor shall operate and maintain the tank(s) and cart(s) in accordance with 830-GMM-0001 *General Maintenance Manual*.

6.5.5 Aviation Life Support Equipment (ALSE) Shop

The Contractor shall operate and maintain the ALSE shop as delineated in 830-GMM-0001 *General Maintenance Manual*. Example tasks include:

1) Maintain records for each individual requiring flight gear. The Contractor may elect to use Aircraft Operations (AO) forms, or develop other means, to account for in-flight personal equipment;
2) Maintain logs/records for flight gear where required by 830-FOM-0001 *Flight Operations Manual* or FAA/DOD regulations not assigned to individuals;
3) Provide assistance to aircrew to ensure personal flight equipment fits properly;
4) Clean and maintain flight gear in accordance with approved technical data;
5) Fabricate and repair soft goods, both aircraft related and non-aircraft related. Pattern making and sewing skills are required to manufacture items, such as seat cushion covers, flight clothing bags, aircraft intake covers, equipment covers, aircraft forms bags, aircraft interior panel/seat covers, flight gear repairs, any items per engineering or end user drawings, and applicable technical data;
6) Fabricate/acquire labels, signs, and nametags;
7) Procure/acquire flight gear (flight suits, boots, gloves, helmets, etc.) as needed for personnel;

8) Maintain, inspect, and replenish first aid kits;
9) Handle, store, and forecast explosive devices utilized to support in-flight clothing and personal equipment in accordance with NASA-STD-8719.12 *Safety Standard for Explosive, Propellants and Pyrotechnics*;
10) Maintain, inspect and set up night vision goggles in accordance with OEM instructions;
11) Inspect, test, build-up, repair, and assemble smoke masks in accordance with approved technical data;
12) Maintain flight crew oxygen masks in accordance with approved technical data;
13) Maintain storage noted below:
    a. Bonded Storage Area: Maintain bonded storage areas for personal parachute assemblies (PPAs) and their components; and
    b. Pyrotechnic Storage Locker: Maintain a pyrotechnic storage locker for PPA bonded pyrotechnic devices and a locker for flares and pyrotechnics for automatic release devices in accordance with NASA-STD-8719.12 *Safety Standard for Explosive, Propellants and Pyrotechnics*.
14) Maintain, inspect, and replenish survival kits;
15) Maintain and inspect parachutes;
16) Maintain and inspect drogue parachute;
17) Maintain and inspect Radios/Beacons
    a. Inspect, test, and change limited life items for radios and beacons in accordance with the manufacturer's instructions; and
18) Maintain, inspect, and replenish other survival items as requested by NASA. This will be accomplished under an IDIQ task order.
19) Provide monthly explosive devices inventory.

6.5.6 Power Plant Support

The Contractor shall provide power plant (engine/component) support to include:

1) Perform on/off-equipment I-D scheduled and unscheduled maintenance, modifications, preservation, depreservation, borescoping, blade blending, and configuration upgrades/control on engines/components in accordance with approved technical data; and
2) Maintain engine maintenance and transportation trailers and other support equipment utilized to support engine/component maintenance.

6.5.7 Welding Support

The Contractor shall ensure welding procedures are qualified and welding is performed in accordance with AWS D17.1, *Specification for Fusion Welding for Aerospace Applications*, NASA-STD-5006 *General Fusion Welding Requirements for Aerospace Materials Used in Flight Hardware* or NASA-SPEC-5004A *Welding of Aerospace Ground Support Equipment and Related Nonconventional Facilities* as applicable.

6.5.8 Electrical and Avionics Support

The Contractor shall provide the necessary support services to maintain all aircraft electrical and avionics systems in accordance with 830-GMM-00001 *General Maintenance Manual*.

6.5.9 Machining and Sheet Metal Support

The Contractor shall provide the necessary support services to maintain and operate the on-site machine and sheet metal fabrication area in accordance with 830-GMM-00001 *General Maintenance Manual*.

6.5.10 Non-Destructive Inspection (NDI) Support

The Contractor shall:

1) Manage NDI support and ensure personnel are certified in all aspects of NDI (e.g. optical, dye-penetrate, magnetic particle, ultrasonic, eddy current, and radiographic) to support on-site and off-site equipment inspections on all aircraft and support equipment assigned to NASA;
2) Perform non-destructive inspection;
3) Ensure NDI personnel utilize USAF T.O. 33B-1-1, *Non-Destructive Inspection Methods, Basic Theory* as well as the guidelines stipulated in AFI21-101, *Aircraft and Equipment Management, Paragraph 5.9.4* and NASA-STD-5009 *Nondestructive Evaluation Requirements for Fracture Critical Metallic Components* during all aspects of NDI accomplishment. This technical data may be supplemented by other process and procedures when made available by the OEM, DOD and other NASA approved sources; and
4) Ensure all discrepancies noted during any of the above methods of inspecting shall be documented in NAMIS using NASA Form 1671A, *Aircraft Maintenance Packet*.

6.5.11 Lifting Devices and Support

The Contractor shall ensure all lifting devices and lifts performed comply with NASA-STD-8719.9 *Standard for Lifting Devices and Equipment* or applicable military/FAA specification.

6.5.12 Ground Based Pressure Vessels and Pressurized Systems

The Contractor shall ensure all ground based pressure vessels and pressurized systems (ex: N2 cart, 02 cart, LOX equipment, etc.) comply with NASA-STD-8719.17 *NASA Requirements for Ground –Based Pressure Vessels and Pressurized Systems (PVS)* or applicable military /FAA specification.

6.6 Forward Operating Locations (FOLs)

6.6.1 Aircraft Launch, Recovery and General Maintenance

The Contractor shall provide aircraft launch, recovery, and maintenance support for aircraft at WFF and deployed in CONOUS or OCONUS. The Contractor will be notified in writing if NASA decides to perform any of these functions itself at WFF or other locations for a given mission or flight.

6.6.2 Aircraft Storage and Preservation

The Contractor shall ensure all aircraft are properly stored and preservation services provided in a climate that minimizes aircraft corrosion whenever possible at WFF and off site.

7.0 Aircraft Logistics

7.1 General Requirements

The Contractor shall provide logistics support services for the locations listed in SOW Subsection 2.2. The Contractor shall utilize the NAMIS in accordance with SOW Subsection 4.7.1 for all functional areas and processes required to support logistics. The Contractor shall provide logistical support for all WFF aircraft/UAS that are FAA and Public Use certificated.

7.2 Logistics Services

The Contractor shall provide the logistics services listed below (Section 7.3 includes descriptions of various services listed below, additional information can be found in 830-FOM-0001 and 830-GMM-0001):

1) Inventory Management
    a. Material warehousing;
    b. Stock control/replenishment;
    c. Reverse posting of supply asset deliveries;
    d. Stock rotation;
    e. Supply issue points;
    f. Physical inventories;
    g. Wall-to-wall inventories;
    h. Contract transition inventories;
    i. Inquiries;
    j. Material issue processing to include parts issue counter;
    k. Bench stock management and processing;
    l. Shop stock management and processing;
    m. Shelf-life management;
    n. Material/asset turn-in processing (DIFM);
    o. Kitting;
        i. Project kits;
        ii. Flyaway (deployment) kits; and
        iii. Aircraft change directive kits; and
    p. Excess and Disposal.
2) Property Control
3) Cataloging
    a. Classification of parts;
    b. Categorizing parts;
    c. Tagging and labeling parts;
    d. Grouping parts; and
    e. Environmental control requirements.
4) Acquisition

a. Subcontracts; and
b. Purchasing.
c. Requisition
    i. Public use aircraft parts;
    ii. Certificated aircraft parts; and
    iii. NASA configuration items.
d. Warranty Program
e. Material Receipt Processing
    i. Material receiving;
    ii. Pilferable item security;
    iii. Verification of Purchased Products using the Supply Discrepancy Reporting (SDR) Program;
        a. DoD Parts; and
        b. Commercial Parts.
    iv. Functional checks;
    v. Hazardous materials;
        1. Chemicals; and
        2. Explosives.

5) Pyrotechnics Logistics Management
6) Shipping and Receiving
    a. Special handling requirements;
        i. Over-size deliveries;
        ii. Rigging and heavy hauling support;
        iii. Escorts;
        iv. Premium transportation services; and
        v. NASA aircraft transportation.
7) Deployment Support

7.3 Logistics Service Details

7.3.1 Inventory Management

7.3.1.1 Inquiries

The Contractor shall respond to inquiries for information such as part number verification, asset availability, inventory count of an individual item, part number/serial number searches, Government Industry Data Exchange Program (GIDEP) alert research, and requests to physically view material within two (2) hours from initial request during normal work hours listed in SOW Subsection 4.1.2.

7.3.1.2 Awaiting Parts (AWP) Disposition

The Contractor shall accomplish the following tasks if a DoD unserviceable end-item has been in an AWP status for sixty (60) days.

1) Contact the appropriate DoD Logistics Item Manager responsible for the piece parts or serviceable repairable unit (SRU) to get the most current status on the open requisition(s); and
2) If delivery of the piece parts or SRU cannot be guaranteed within thirty (30) days, the Logistics Specialist shall contact the NASA A&MM and request disposition of the end-item.

7.3.1.3 Excess and Disposal

7.3.1.3.1 Excess and Disposal of Government Property

The Contractor shall:

1) Utilize the DoD Customer Asset Report and Reply to Customer Asset Report processes contained in NAMIS to report DoD excess supply stock and equipment requiring disposal prior to utilizing NASA procedures contained in 830-GMM-0001 *General Maintenance Manual*; and
2) Ensure products dispositioned for scrap are conspicuously and permanently marked, or positively controlled, until physically rendered unusable in accordance with SAE AS9110 *Aerospace Requirements for Aircraft Maintenance Organizations* standards.

7.3.2 Property Control

7.3.2.1 Government Property

The Contractor shall manage, inventory, control, use, preserve, protect, repair, and maintain Government property in its possession in accordance with Federal Acquisition Regulation (FAR) Clause 52.245-1, *Government Property* and NPR 4100.1, *NASA Inventory Management Manual*. The Contractor shall prepare NASA Form 598, *Property Survey Report*, for any lost, damaged, destroyed, or stolen Government property in accordance with NPR 4200.1; *NASA Equipment Management Procedural Requirements.*

7.3.2.2 Repairable Parts Center (RPC)

The Contractor shall establish a repairable parts center to:

1) Track repairable assets;
2) Maintain a due-in from maintenance (DIFM) system to include a repair processing center which shall track all repairable assets from issue to return to supply; and
3) Verify document and serial numbers, when applicable, for issued assets, transportation, and tracking of assets while in the repair cycle.

7.3.3 Cataloging

The Contractor shall catalog all parts and hardware in accordance with 830-GMM-0001 *General Maintenance Manual*.

7.3.4 Acquisition

7.3.4.1 General

The Contractor shall provide procurement/subcontracting acquisition services for materials, hardware, parts, and other items to meet the SOW requirements. The Contractor shall procure when possible through the NASA, Federal, or DoD, or commercial supply system.

7.3.4.2 DoD Requisitions

The Contractor shall:

1) Ensure funding is available for DoD Requisitions;
2) Transmit requirements to the Defense Automated Message Exchange System (DAMES) on a daily basis;
3) Ensure that NAMIS purchase order amounts are updated based on DAMES response showing the unit price for items that have been shipped;
4) Ensure retro-grade carcasses are returned within 30-days for each Expendability, Recoverability, Reparability Category (ERRC) "T" item requisitioned;
5) Reconcile DoD invoices, Military Standard Billing System (MILSBILLS) with actual orders and receipts in NAMIS;
6) Provide a five-year requirements data exchange list (RDEL) for all ERRC "T" items in accordance with applicable DOD standards; and
7) Input Requirement Data Exchanges via the Defense Automatic Addressing System (DAAS) in accordance with applicable DOD standards.

7.3.4.3 Warranty Program

The Contractor shall:

1) Provide any benefits to NASA that would accrue or be due from commercial warranties received with the purchase and repair of materials, parts, and equipment under this contract;
2) Ensure all subcontracts/purchase orders contain warranties covering design and manufacturing requirements, defects in materials and workmanship, and essential performance requirements; and
3) Contact the NASA COR for waiver approval if a warranty cannot be obtained.

7.3.4.4 Verification of Purchased Products

The Contractor shall establish and implement the verification or other activities necessary for ensuring that purchased products meet specified purchase requirements in accordance with SAE AS9110 *Aerospace Requirements for Aircraft Maintenance Organizations* standards.

7.3.4.5 Supply Discrepancy Reporting (SDR) Program

The Contractor shall report parts received from DoD and Commercial sources that are identified as defective or suspect as follows:

For DoD parts the Contractor shall:

1) Report any part received from DoD that is identified as defective or suspect via the DoD Defense Automatic Addressing System Center (DAASC), WEBbased Supply Discrepancy Reporting System (WEBSDR)[11]
2) Segregate parts reported under the WEBSDR from normal stock pending disposition from DoD sources.
3) Conduct follow-up action on any SDR within thirty (30) calendar days from initial report submission.

For Commercial Parts The Contractor shall:

1) Report defective or suspect parts under the Suspect Unapproved Parts (SUP) Program using FAA Form 8120-11, Sup Report.

7.3.4.6 Material Processing Timelines

The Contractor shall:

1) Process material requests for items in stock within two (2) hours of initial request;
2) Process material requests for items not in stock by close of business the day after the item is received in supply, unless the material falls under the priority receipt definition in which case process the same day;
3) Process priority receipts on the same day the item is received. Priority receipts are defined as
    a. Hazardous Materials;
    b. Communications Security (COMSEC);
    c. Work stoppage items; and
    d. Receipts requiring special handling; and
4) Process routine receipts (items that do not meet priority receipt definition) no later than the second (2nd) work day after receipt of item.

7.3.5 Pyrotechnics Logistics Management

The Contractor shall:

1) Follow the provisions outlined in 830-GMM-0001 *General Maintenance Manual*. Example tasks include:
    a. Pick-up, control, store, issue, document, transport and dispose of WFF pyrotechnics in support of AO activities and crew survival pyrotechnics up to Class 1.3C;
    b. Establish and implement inventory controls to provide identification, traceability, and reporting of pyrotechnics; and
    c. Maintain all records associated with explosive devices to meet all reporting requirements required by law and regulations. These records shall be made available within two (2) hours from initial request to the Government during surveillance audits and during the annual explosive handling certifications conducted by NASA personnel in accordance with 830-GMM-0001 *General Maintenance Manual*.

[11] *Access to WEBSDR may be obtained by completing an online system access request (SAR) from the DAASC website: https://www.daas.dla.mil.*

2) Forecast pyrotechnic device replacement requirements for cartridge actuated devices (CAD) and propellant actuated devices (PAD) and place them on order to optimize quantity cost vs. shelf life.
3) Dispose of explosive devices in accordance with 830-GMM-0001 *General Maintenance Manual*

If service lives are to expire prior to replacement part delivery, then to preclude an aircraft/equipment being placed in a not mission capable (NMC) status pending receipt of a replacement item, the Contractor shall:

1) Determine if a service life extension is available via normal logistic support functions. If so, present proposed service life extension (SLE) and support data to the NASA Chief of Maintenance for review and approval.
2) Coordinate SLE's for pyrotechnic devices that are not readily available via normal logistic support functions with NASA.

7.3.6 Shipping and Receiving

7.3.6.1 Export Compliance

The Contractor shall ship material OCONUS in accordance with all applicable laws and regulations to include International Traffic in Arms Regulation (ITAR) export control and in accordance with 830-GMM-0001 *General Maintenance Manual*.

7.3.6.2 Packing, Handling, and Transportation for Aeronautical Equipment, and Associated Components

The Contractor shall:

1) Use reusable containers when practical for all items that require periodic shipment to and return from repair activities and where adequate provisions to control the containers make reuse economical in accordance with NPR 6000.1, Paragraph 2.9, *Requirements for Packing, Handling, and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components*; and
2) Reuse packaging material to the maximum extent practicable in accordance with NPR 6000.1, Paragraph 2.9, *Requirements for Packing, Handling, and Transportation for Aeronautical and Space Systems, Equipment, and Associated Components*.

7.3.6.3 Hazardous Material Shipments

The Contractor shall ensure that all shipments containing hazardous materials are packaged, packed, marked, labeled, and documented as appropriate, in accordance with applicable processes contained in:

1) Department of Transportation (DOT) Hazardous Materials Regulation contained in CFR Title 49;
2) International Civil Aviation Organizations (ICAO) Technical Instruction for the Safe Transportation of Dangerous Goods;
3) International Maritime Organizations (IMO) Dangerous Goods Code; and
4) International Air Transport Association (IATA) Dangerous Goods Regulation.

7.3.6.4 Reporting and Adjusting Discrepancies in Government Shipments

The Contractor shall ensure shipping discrepancies are resolved and freight claims are processed in accordance with CFR Title 41, Volume 3, Ch.-Part-Section 102-117-190, *Reporting and Adjusting Discrepancies in Government Shipments*.

7.3.6.5 Shipments on NASA Aircraft

All cargo movements' onboard NASA aircraft shall be coordinated in advance with NASA to ensure cargo meets all Federal requirements, particularly in the transportation of hazardous materials. Hazardous cargo as defined in 49 CFR 171.8, *General Information, Regulations and Definitions*, shall not be transported on NASA mission management aircraft.

7.3.7 Deployment Support

When requested by NASA, the Contractor shall provide logistics personnel at deployed locations per SOW Subsection 2.2.

8.0 Quality Control

8.1 General Requirements

8.1.1 Quality Management System (QMS)

The Contractor shall provide quality control services. The Contractor's quality management system (QMS) shall be certified to all application sections of AS9110, *Aerospace Requirements for Aircraft Maintenance Organizations* within one year of contract award. If the contractor is not certified at the time of award a Quality Management System implementation plan shall be provided to NASA QAM until AS9110 certification is achieved.

The Contractor's quality management system shall, as a minimum, meet the following requirements:

1) Federal Acquisition Regulations (FAR) and NASA FAR Supplement;
2) GPR 1280.1 *GSFC Quality Manual* as applicable.

The Contractor Quality Control point of contact shall be required to sign off on all NASA Form 1671A *Aircraft Maintenance Packet* and anomalies that meet the conditions in 830-GMM-0001 *General Maintenance Manual*. The Contractor, with NASA approval, may add to these requirements as deemed appropriate based on risk and criticality.

8.1.2 Government Access

The Contractor shall allow Government representatives access to work areas, data, provide support, and not interfere with the Quality Assurance Evaluators (QAE's), State, Federal, and other designated personnel in the performance of their official duties.

8.1.3 NASA Quality Assurance Evaluators (QAE)

NASA QAE personnel are assigned to the Aircraft Office. These personnel provide monitoring and surveillance of the Contractor using the elements outlined in the SOW and Contractor's Management Plan.

8.1.4 Non-Conformances

The Contractor shall take corrective action for all non-conformances (not meeting contract requirements) identified during Government/Contractor surveillance/audits and provide corrective actions to the NASA CO and COR in accordance with NASA quality assurance plans and policies as well as the Contractors specific Quality Assurance Plan. NASA plans and policies shall take precedence over Contractor specifications if a conflict arise.

8.1.5 Corrective and Preventive Action

The Contractor shall ensure that corrective and preventive actions include a corrective and preventive action plan that addresses why the performance threshold was not met to include root cause analysis, how performance will be returned to an acceptable level(s), and how recurrence will be prevented in the future.

8.1.6 Outsourced Processes

The Contractor shall ensure controls of outsourced (e.g. subcontracted) processes and products are identified within the scope of the Contractor's QMS, in accordance with SAE AS9110 *Aerospace Requirements for Aircraft Maintenance Organizations* standards.

8.1.6.1 Requirements Flow Down

The Contractor shall apply the requirements in this document to subcontractors and suppliers to the extent necessary to ensure that the delivered product and/or service meets performance requirements. At a minimum, the applicable requirements of NPD 8730.5, Attachment A shall be flowed to subcontractors.

8.1.7 Government-Industry Data Exchange Program (GIDEP)

The Contractor shall participate in the Government-Industry Data Exchange Program (GIDEP) in accordance with the requirements of the *GIDEP Operations Manual* (GIDEP SO300-BT-PRO-010) and the *GIDEP Requirements Guide* (SO300-BU-GYD-010). The Contractor shall review all GIDEP Notices and designated NASA Advisories to determine if they affect the Contractor's maintenance operations, maintenance products, and/or other product or services provided to the Government. The Contractor shall respond by stating, in writing, whether or not each GIDEP Notice and NASA Advisory affects the Contractor's products and services provided to the Government. The contractor is responsible for stating whether or not each GIDEP Notice and NASA Advisories affects the subcontractor's products and services provided to the Government. For GIDEP Notices and NASA Advisories that affect the Contractor's products and services provided to the Government, the Contractor shall take action to eliminate or mitigate any negative effect and inform the Government of such actions to ensure GIDEP Notices and NASA Advisories adhere to close-loop reporting.

The Contractor shall generate applicable GIDEP Alerts in accordance with the requirements of GIDEP SO300-BT-PRO-010 and SO300-BU-GYD-010 whenever failed or nonconforming items, available to other buyers, are discovered during the course of the Contract.

If suspect/counterfeit parts are furnished or identified under this contract, the contractor shall impound such items. If the contractor purchased the product, the Seller shall promptly replace such items with items acceptable to NASA QAM and the Seller shall be liable for all costs relating to impoundment, removal, and replacement. NASA QAM may turn such items over to NASA Office of Inspector General, FBI, etc., for investigation and reserves the right to withhold payment for the suspect counterfeit items pending the results of the investigation. If the product was purchase through NASA, the contractor will notify NASA QAM within 48 hours.

Contractors shall provide GIDEP Notice and NASA Advisory disposition documentation to NASA up to the time that process closed-loop reporting is no longer required.

8.1.8 Metrology and Calibration

The contractor shall comply with ANSI/NCSL Z540.3 *Requirements for the Calibration of Measuring and Test Equipment* for the calibration of measuring and test equipment if they are responsible for or are sending tools to be calibrated.

In addition, the contractor shall ensure the following information is available in Calibration Certificates of Compliance:

- "As Is" Measuring and Test Equipment Condition (the condition the measuring and test equipment was delivered in)
- Compliance requirements (e.g., tolerance requirements, pass/no pass thresholds, etc.)
- Results of calibration including associated data used to determine Measurement and Test Equipment compliance.

8.1.9 Waivers and Deviations

Contractor requested waivers and deviations shall be processes via the requirements in 830-FOM-0001 *Flight Operations Manual* for flight operation waivers/deviations and 830-GMM-*0001General Maintenance Manual* for maintenance waivers/deviations.

9.0 Safety

9.1 General Requirements

9.1.1 Safety and Health Program

The Contractor shall develop, maintain, and execute a safety and health program in accordance with NPR 7900.3 *Aircraft Operations Management*, GPD 8715.1 *Goddard Space Flight Center Safety Policy*, GPR 1700.1 *Occupational Safety Program at Goddard Space Flight Cente*r, and GPR 8715.2 *Aviation Safety Program*.

9.1.2 Workplace Safety and Health

The Contractor shall:

1) Comply with Occupational Safety and Health Administration (OSHA) (Public Law 91-596) Guidance, and other DoD, NASA and aircraft manufacturers prescribed processes/procedures to ensure the safety of their personnel; and
2) Resolve safety and health issues as they arise.

9.2 Hazards

9.2.1 Job Hazard Analysis (JHA)

When written directives do not identify hazards for requirements being performed, the Contractor, with assistance from NASA and Contractor's safety representatives, shall complete a Job Hazard Analysis (JHA). Procedures for JHAs are outlined in GPR 1700.1 *Occupational Safety Program at Goddard Space Flight Center*.

9.2.2 Hazard Analysis

The Contractor shall perform hazard analysis in accordance with GPR 7120.4 *Risk Management*.

9.3 Safety Programs

9.3.1 Voluntary Protection Program (VPP)

The Contractor shall comply with the four main VPP program elements identified below:

1) Management Commitment and Employee Involvement;
2) Workplace Analysis;
3) Hazard Prevention and Control; and

4) Safety and Health Training.

9.4 Mishap and Incident Response

9.4.1 Aircraft Mishap Interim Response Program

The Contractor shall:

1) Develop an interim response program to support NASA in responding to aircraft mishaps, injuries, fuel spills, environmental contamination, and weather damage to support NPR 8621.1 *NASA Procedural Requirements for Close Call Reporting, Investigating, and Recordkeeping*, GPR 8715.2 *Aviation Safety Program* and the 830-MAMC-0001*Aircraft Office Mission Anomaly and Mishap Contingency Plan*; and
2) Provide the NASA COR with an up-to-date list of qualified response team members.

9.4.2 Mishap and Close Call Reporting

The Contractor shall:

1) Report mishaps and close calls (flight and ground) in accordance with NPR 8621.1 *NASA Procedural Requirements for Close Call Reporting, Investigating, and Recordkeeping*, GPR 8715.2 *Aviation Safety Program*, 830-MAMC-0001 *Aircraft Office Mission Anomaly and Mishap Contingency Plan*, and NPR 7900.3, *Aircraft Operations Management Manual*;
2) Immediately notify the NASA Aviation Safety Officer of mishaps regardless of date and time;
3) Notify the Contracting Officer of mishaps within 48 hours;
4) Coordinate close call reporting with the NASA Safety Office; and
5) Ensure all equipment (aircraft, engines, and support equipment) involved in the close call or mishap is impounded in accordance with AO 830-GMM-0001 *General Maintenance Manual* and 830-MAMC-0001 *Aircraft Office Mission Anomaly and Mishap Contingency Plan* to ensure a thorough investigation into the root and causal factors can be conducted without altering the mishap scene.

9.4.3 Mishap Interim Response

The Contractor shall support mishap interim responses in accordance with NPR 8621.1 *NASA Procedural Requirements for Close Call Reporting, Investigating, and Recordkeeping*, GPR 8715.2 *Aviation Safety Program* and 830-MAMC-0001 *Aircraft Office Mission Anomaly and Mishap Contingency Plan*.

IDIQ Support Functions

(The following sections are part of the IDIQ portion of this contract)

10.0 Program and Project Support

10.1 General Requirements

The Contractor shall provide program and project support to NASA. Projects may include NASA aircraft missions, maintenance activities, reimbursable programs, internal development projects, and new business opportunities generated as a result of shifting budgets and mission priorities. Example of support services include:

1) Research, development, acquisition, and sustainment efforts across a broad spectrum of functional disciplines in order to effectively assist in the implementation of Government objectives; and
2) Development of Quick-Reaction Capabilities (QRC), streamlined acquisition and development processes, Advanced Concepts and Technology Demonstrations (ACTD), use Concept of Operations (CONOPS), technical assessments, and system development that will support near-term and long-term operational requirements for NASA and other Government agencies.

10.2 Project Management

The Contractor, shall provide project management, project control, and schedule support services for NASA projects. Project managers shall be responsible for managing and executing projects with matrix support from other contract elements in this SOW or NASA. Project management support includes tasks such as planning, organizing, technical analysis and recommendations, scheduling, and reporting. Example project management tasks include:

1) Task Management and Control: The Contractor shall develop and present to NASA task management plans describing the technical approach, organizational resources, and management controls to meet the cost, performance and schedule requirements of NASA aircraft activities and projects;
2) Schedule Monitoring and Control: The Contractor shall develop and present to NASA project schedules. The Contractor shall monitor project progress, and update schedules as required;
3) Cost Monitoring: The Contractor shall provide cost monitoring in support of project and program activities and monitor costs for control and reporting; and
4) Risk Management Plans: The Contractor shall develop and administer risk management plans in support of project activities.
5) Project Management Plans: Develop project documentation required by NASA to execute aircraft projects.

10.2.1 Reports and Briefings

The Contractor shall develop reports, briefings, briefing materials, presentation packages, informational brochures, photographs, and test/demonstration/feasibility portfolios including draft and final versions.

10.3 ~~Project Support Services~~ Project Support Services

10.3.1 General Support

The Contractor shall:

1) Attend project design reviews, technical interchange meetings, user conferences, program status reviews, management and design reviews, flight readiness reviews, and other reviews per NASA request for projects and programs.
2) Present briefings, record and distribute minutes, and complete assigned action items or specific assignments resulting from these meeting as requested by NASA.

10.3.2 Data Collection

The Contractor shall conduct data gathering and perform site surveys required to support the conduct of technical studies and analyses, exercises and demonstrations, contingencies, quick reaction tasks, mission planning, and other requirements. The Contractor may be required to attend and monitor operations at both on and off-site locations.

10.3.3 Acquisition Support

The Contractor shall provide acquisition support services for projects. Example tasks include:

1) Review and prepare technical specifications and support documentation; and
2) Provide support between program/project management and logistics for procurement.

10.3.4 Technical Support

The Contractor shall provide technical support services for projects. Example tasks include:

1) Support research, development, and production;
2) Research candidate technologies and plan for upgrades and improvements to aircraft, equipment, facilities, processes, and programs. The Contractor shall provide to NASA recommendations with written rationale on methods to better integrate new technologies;
3) Support aircraft and equipment maintenance issues;
4) Support developing systems, subsystems, equipment, and components; and
5) Safety issues.

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10.4 Aircraft and Payload Integration

The Contractor shall provide integration (and oversight of integration if subcontracted) of payloads, sensors, aircraft upgrades, experiments, and instrumentation. Example tasks include:

1) Coordinate use and aircraft availability schedules;
2) Provide existing data on aircraft to potential users of the aircraft;
3) Coordinate and assist in the assembly, checkout, installation, and troubleshooting of payloads and other equipment;
4) Coordinate payload integration requirements and configurations with appropriate customer organizations;
5) Support development and review of payload data packages for each new system integration;
6) Support test and evaluation (T&E) and validation and verification (V&V) activities.
7) Develop payload integration timelines;
8) Provide payload operations and development guidance to the customer for unique aircraft operating conditions;
9) Participate in sensor operations training and dress rehearsal scenarios as it relates to the NASA aircraft projects; and
10) Store and maintain customer hardware housed by NASA.

10.5 Mission Planning and Development

The Contractor shall provide mission planning and development support services. Example tasks include:

1) Identify aircraft to meet mission needs;
2) Recommend sensor suite optimizations/upgrades to enhance mission capabilities;
3) Develop tasking, collection, processing, exploitation, and dissemination requirements;
4) Develop mission cost estimates;
5) Prepare memorandums of understanding/agreement (MOU/MOA);
6) Prepare Project Implementation Plans (PIP); and
7) Prepare mission related documents:
    a. Proposals;
    b. Concept of Operations (CONOPS);
    c. Aircraft and Personnel Automated Clearance System (APACS);
    d. Letters of authorization (LOA);
    e. Mission partner coordination; and
    f. Other documents as required by NASA.

10.6 Mission Coordination, Implementation, and Execution

The Contractor shall provide mission coordination, implementation, and execution services for CONUS and OCONUS operations. Example tasks include:

1) Coordinate military airlift request;
2) Provide advance teams for CONUS and OCONUS missions;
3) Develop, provide, and execute logistics plans;
4) Provide data collection management support;
5) Develop mission execution timelines;
6) Support execution of flight operations; and
7) Support specialized equipment maintenance, training, and operations.

10.7 Deployment Support

The Contractor shall support aircraft deployments both within the contiguous United States (CONUS) and outside the contiguous United States (OCONUS). When aircraft are performing missions based locally from WFF it will be considered as if the aircraft is deployed in CONUS with the exception of associated travel costs (per diem). The Contractor shall:

1) Provide personnel in appropriate disciplines to support deployed operations[12];
2) Perform similar tasks at the deployed location as if the personnel were at their home location;
3) Ensure that deployed personnel have all of the resources necessary to perform their work at the deployed location including essential tools, hardware, and safety related equipment;
4) Provide deployment support. Example tasks include:
    a. Perform duties identified in NPR 7900.3, *Aircraft Operations Management* and 830-FOM-0001 *Flight Operations Manual*;
    b. Perform preflight, through-flight, and post-flight inspections on NASA aircraft in accordance with the aircraft specific Flight Manual or NASA approved flight crew checklists;
    c. Perform normal and emergency procedures in accordance with the aircraft specific Flight Manual and NASA approved flight crew checklists;
    d. Support Readiness Reviews on aircraft prior to deployment in accordance with AO 800-PG-1060.2.2 *Airworthiness Review Process*;
    e. Provide/augment NASA deployment management support;
    f. Coordinate mission partner assistance when necessary;
    g. Collate various customer needs into a single cohesive data collection plan;
    h. Develop deployment cost estimates and track mission costs during deployment;
    i. Develop and maintain mission schedules;
    j. Generate mission briefings;
    k. Submit daily flight reports;
    l. Support deployment location logistical needs;
    m. Provide daily flight schedule inputs;
    n. Develop/provide/execute logistics plans in support of deployed operations; and
5) Conduct data gathering and perform site surveys required to support the conduct of deployed flight operations.

[12] *NASA reserves the right to establish the number and type of crewmembers required for each flight in order to ensure an adequate level of safety and efficiency in accordance with 830-FOM—0001 Flight Operations Manual.*

11.0 Engineering

11.1 General Requirements

11.1.1 Overview

The Contractor shall provide engineering support services for aircraft, payload, and support equipment development, repairs, and upgrades. The Contractor shall work with NASA engineers as required to support mission requirements. The engineering support shall cover both public use and FAA certificated aircraft. Support shall be provided in a timely manner to maximize aircraft or equipment availability. Example engineering support services include:

1) Aircraft maintenance support;
2) Aircraft sustainment (e.g. locating supportable parts or generating repair procedures);
3) Aircraft upgrades;
4) Aircraft troubleshooting;
5) Aircraft ground and flight testing;
6) Aircraft Service Changes, Service Bulletins, and Airworthiness Directives evaluation;
7) Ground support equipment design, troubleshooting, and testing;
8) Payload design and analysis;
9) Payload integration and testing;
10) Payload shipping fixture design;
11) Technical specifications and supporting documentation for procurements; and
12) Technical interface with other Government agencies and commercial companies.

The Contractor shall provide support surge in engineering workload or provide supplementary support for projects requiring unique engineering specialties. The Contractor shall:

1) Coordinate a meeting with NASA within three (3) work days following task assignment for initial discussions;
2) Commence work on the assigned task within fifteen (15) work days following NASA request or per mutually agreed schedule at time of task assignment;
3) Deliver all reports, computer models, and electronic files generated by the contractor to NASA; and
4) Provide all data to NASA in the native file format of the originating system. For example, a finite element analysis model created using MSC NASTRAN, shall be delivered to NASA in the original MSC NASTRAN format.

11.1.2 Engineering Schedule

The Contractor shall provide a schedule for all assigned engineering tasks. The Contractor shall work with NASA to develop the schedule content. The Contractor shall:

1) Provide schedule support for all assigned tasks. Example schedule items include:

a. Resource allocation;
b. Design completion;
c. Analysis completion;
d. Drawing release;
e. Design reviews;
f. Airworthiness reviews;
g. Logistics and manufacturing;
h. Flight, test, & readiness reviews ;
i. Test schedules; and
j. Engineering work order release schedule.

2) Provide weekly schedule updates to NASA management;
3) Notify and receive approval for any schedule adjustments to NASA management as required; and
4) Maintain baseline schedules to track schedule variance.

11.1.3 Engineering Cost Estimates

The Contractor shall supply engineering cost estimates (e.g. labor hours, material costs, subcontract costs) when requested by NASA. Example cost estimates include:

1) Aircraft/component repair costs;
2) Aircraft /component upgrade costs;
3) Aircraft/component troubleshooting and testing costs; and
4) Aircraft/component payload integration costs.

11.1.4 Engineering Reviews

11.1.4.1 Airworthiness Reviews

The Contractor shall support or present engineering airworthiness reviews per 800-PG-1060.2.2 *Airworthiness Review Process*.

11.2 Systems Engineering

The Contractor shall institute a systems engineering process, tailored to the given tasks, for all engineering tasks to support aircraft, payload, and ground support equipment development, repairs, or upgrades. The Contractor shall reference NASA/SP-2007-6105, *NASA Systems Engineering Handbook* for guidance. The goal of the systems engineering process is to provide optimal designs with an emphasis on increasing standardization, decreasing maintenance, and reducing technical risk. Example systems engineering tasks include:

1) Develop system architectures;
2) Define and allocate requirements;
3) Define and assess interfaces;
4) Define, assess, and mitigate risks;
5) Evaluate design tradeoffs to facilitate optimal designs based on cost, schedule, and technical risk;

6) Define verification and validation requirements;
7) Support technical document development and reviews; and
8) Communicate system design goals across engineering and maintenance teams.

11.3 Design

11.3.1 General Requirements

The Contractor shall:

1) Conduct design and development activities in accordance with 800-PG-1060.2.2 *Airworthiness Review Process* and 830-PG-1410.2.1 *Aircraft/Unmanned Aerial System (UAS) Engineering and Configuration Management (CM) Process*; and
2) Conduct technical peer reviews using NASA reviewers for all engineering documentation, designs, and drawings prior to release. Example peer review tasks include:
    a. Review documentation/drawings to minimize errors;
    b. Review documentation/drawings to ensure design suitability; and
    c. Review documentation/drawings to ensure fabrication feasibility.

11.3.2 Drafting and Computer Aided Design (CAD) [13]

11.3.2.1 Drawing Generation

The Contractor shall provide drafting and Computer Aided Design (CAD) services to support aircraft, payload, and ground support equipment development, repairs, or upgrades. The CAD systems (AutoCAD and Inventor) shall be NASA furnished and shall be NASA installed and maintained but Contractor operated. The Contractor shall:

1) Provide drafting and CAD support. Example tasks include:
    a. Electrical schematic generation;
    b. Printed circuit board design drawings;
    c. Wire list generation;
    d. Mechanical design drawings;
    e. Sheet metal design drawings;
    f. Structural design drawings;
    g. System level drawing generation;
    h. Aircraft configuration drawings;
    i. Drawing trees; and
    j. Generating and maintaining CAD standards.
2) Create all designs and drawings using the AutoCAD or Inventor CAD systems;

[13] *NASA may change the current Computer Aided Design software package during the life of the contract. If NASA does make this change, the Contractor shall support the migration to the new system.*

3) Create and maintain all drawings in accordance with 800-PG-1060.2.2 Airworthiness Review Process and 830-PG-1410.2.1 *Aircraft/Unmanned Aerial System (UAS) Engineering and Configuration Management (CM) Process*;
4) Place a priority on using Inventor for mechanical/structural design tasks;
5) Receive approval for all changes or upgrades to the CAD system software or drawing standards by the AO Airworthiness Engineer;
6) Scan or convert all drawings into Portable Document Format (PDF); and
7) Provide access to all newly created or modified engineering drawings in both Portable Document Format (PDF) and native file formats. One PDF file shall contain all of the drawing sheets and Drawing Change Notices (DCNs) for one drawing/document number.

11.3.2.2 Drawing Reviews

The Contractor shall ensure that all drawings are reviewed per 800-PG 1060.2.2 *Airworthiness Review Process* prior to release to minimize drawing and design errors and ensure drawings meet 830-PG-1410.2.1 *Aircraft/Unmanned Aerial System (UAS) Engineering and Configuration Management (CM) Process*.

11.3.2.3 Scanning and Duplication

The Contractor shall provide scanning and duplication support services.

11.3.3 Electrical Engineering

The Contractor shall provide electrical engineering services to support aircraft, payload, and ground support equipment development, repairs, or upgrades. Example electrical engineering tasks include:

1) Avionics integration (Aeronautical Radio Incorporated (ARINC) and MIL-STD data buses);
2) Line Replaceable Unit (LRU) design and integration;
3) Circuit design (analog and digital);
4) Wire harness design;
5) Payload electrical interface design;
6) Data recorder programming and data post-processing; and
7) Troubleshooting using electrical and avionics test equipment (e.g. multimeters, oscilloscopes, avionics test equipment, bus analyzers, aircraft ground support equipment)

11.3.4 Mechanical/Aerospace Engineering

The Contractor shall provide mechanical/aerospace engineering services to support aircraft, payload, or ground support equipment development, repairs, or upgrades. Example mechanical/aerospace engineering tasks include:

1) Repairs to aircraft or equipment that are beyond the scope of DoD Technical Orders, manufacturer's repair manuals, or routine aircraft maintenance manuals;
2) Sheet metal design;
3) Machined component design;
4) Welded component design;

5) Composite design;
6) Pneumatic and hydraulic system design; and
7) Payload installation design.

11.3.5 Quality Engineering

The Contractor shall provide quality engineering services to support aircraft, payload, and ground support equipment development, repairs, and upgrades. Example quality engineering tasks include:

1) Ensure, design, fabrication, modification/integration instructions, and inspection processes satisfy NASA, FAA, and other statutory requirements as applicable;
2) Review drawings to ensure proper process callouts (e.g. heat treat, weld inspection, coatings, plating, electrical fabrication requirements, etc.);
3) Identify critical components and corresponding inspection requirements;
4) Perform root cause analysis and develop corrective actions;
5) Perform Failure Modes and Effects Analysis (FMEA);
6) Perform trend analysis;
7) Coordinate quality and inspection processes for components fabricated via subcontract (e.g. dimensional inspection, weld inspection); and
8) Provides inspection skill training.

11.3.6 Software Engineering

The Contractor shall provide software engineering services to support aircraft, payload, and ground support equipment development, repairs, and upgrades. When requested by NASA, the Contractor shall follow NPR 7150.2A *NASA Software Engineering Requirements.* Example software engineering tasks include:

1) Data recorder programming and data post-processing;
2) Line Replaceable Unit (LRU) software development or modification;
3) Avionics special test equipment software development or modification ;
4) Software programming support. Example programming languages may include: C++, Java, SQL, and Microsoft .NET framework;
5) Simulation software applications (e.g. Spice, MATLAB, Mathematica, Simulink); and
6) Macro generation for Microsoft products.

Any software required to execute software engineering services shall be contractor furnished and shall be Contractor installed, operated, and maintained.

11.4 Analysis

11.4.1 Structural Analysis

The Contractor shall provide structural analysis services to substantiate aircraft, payload, or ground support equipment development, repairs, or upgrades. Structural analyses shall be prepared and

documented per 800-PG-1060.2.2 *Airworthiness Review Process* and 830-PG-1410.2.1 *Aircraft/Unmanned Aerial System (UAS) Engineering and Configuration Management (CM) Process*. Example tasks include:

1) Handbook calculations and finite element analyses of airframe structures, payload structures, ground support equipment, and aircraft repairs;
2) Weight and balance calculations;
3) Non-linear analysis (e.g. buckling/stability);
4) Vibration analysis;
5) Composites analysis;
6) Pressure vessel analysis; and
7) Other analysis as requested by NASA.

11.4.2 Aerodynamic Analysis

The Contractor shall provide aerodynamic analysis services to support aircraft and payload development, repairs, or upgrades. Example aerodynamic analysis tasks include:

1) Perform assessments of the aeronautical impacts of aircraft alterations on aircraft stability, control, and performance;
2) Perform assessments of aerodynamic loading on aircraft structures and flight controls;
3) Perform aerodynamic assessment of payload installations;
4) Perform flutter analysis; and
5) Other analysis as requested by NASA.

11.4.3 Electrical Analysis

The Contractor shall provide electrical analysis services to substantiate aircraft, payload, or ground support equipment development, repairs, or upgrades. Example tasks include:

1) Electrical loads analysis;
2) Circuit analysis;
3) Radio Frequency (RF) analysis including antenna pattern analysis, interference, and usage;
4) Bus analysis;
5) Timing analysis;
6) Electromagnetic Interference (EMI) or Radio Frequency Interference (RFI) analysis; and
7) Other analysis as requested by NASA.

11.4.4 Failure Mode Effects and Criticality Analysis (FMECA)

The Contractor shall perform Failure Mode Effects and Criticality Analysis. The FMECA shall meet the intent of MIL-STD-1629, *Procedures for Performing a Failure Mode, Effects and Criticality Analysis* and NASA/SP-2007-6105, *NASA Systems Engineering Handbook*.

11.4.5 Hazard Analysis

The Contractor shall perform hazard analysis. Hazard analysis for aircraft, payloads, and support equipment shall be in accordance with GPR 7120.4 *Risk Management*.

11.5 Engineering Troubleshooting & Testing

11.5.1 Engineering Troubleshooting

The Contractor shall provide engineering troubleshooting services to assist maintenance personnel in resolving aircraft, payload, and ground support equipment issues. The goal shall be to resolve issues quickly to minimize aircraft downtime. Example engineering troubleshooting tasks include:

1) Diagnosing and resolving aircraft equipment failures; and
2) Diagnosing and resolving electrical or mechanical interface issues between NASA aircraft and customer payloads.

11.5.2 Engineering Testing

The Contractor shall provide engineering test services for aircraft, payloads, and ground support equipment. Example testing tasks include:

1) Develop ground and flight test plans to verify airworthiness of installations and modifications;
2) Verify and validate the operation and safety of new designs, upgrades, and repairs;
3) Flight Testing – Select instrumentation, perform data collection, and analyze data to evaluate aircraft system performance and identify flight anomalies. A Engineering Flight Test Plan shall be created for each required flight test;
4) Ground Testing – Select instrumentation, perform data collection, and analyze data for aircraft and payload systems to evaluate system performance and identify anomalies;
5) Bench Testing – Perform integration and testing of new or modified systems to verify operation and identify anomalies;
6) Perform troubleshooting using schematics and diagnostic equipment to support maintenance personnel;
7) Perform propulsion system performance assessments; and
8) Generate test reports.

11.5.3 Engineering Test Equipment

The Contractor shall maintain inventory and provide check-in and check-out services for engineering test equipment. Example test equipment includes:

1) Multi meters;
2) Flight test data recorders;
3) Test cables, connectors, probes;
4) Data bus analyzers;
5) Computer equipment; and

6) Cameras.

11.5.4 Materials Engineering & Testing

The Contractor shall provide materials engineering and testing services. Example materials engineering and testing tasks include:

1) Root cause analysis of component failures due to fatigue, corrosion, wear, overloading, or other failure modes;
2) Recommendations for materials selection based on aircraft or ground support equipment design or repairs; and
3) Mechanical testing. Test lab shall be accredited by the American Association for Laboratory Accreditation (A2LA) for testing aerospace grade materials.

11.6 FAA Designated Engineering Representative Support

The Contractor shall provide FAA appointed Designated Engineering Representative (DER) services in the appropriate engineering discipline when required for repairs or alterations on FAA type-certificated aircraft or per NASA request.

11.7 Manufacturing/Fabrication/Assembly Support

The Contractor shall provide manufacturing/fabrication/assembly support of items requested by NASA. Examples tasks include:

1) Manufacturing/fabrication/assembly of customer hardware (window probes, racks, custom covers, cables, wire harnesses, etc.);
2) Manufacturing/fabrication/assembly of components associated with aircraft modifications and upgrades (doublers, wire harnesses, aircraft cutouts, etc.)
3) Manufacturing/fabrication/assembly of items using designs/drawings provided by NASA Engineering; and
4) Assembly of items purchased by NASA.

12.0 Aircraft/UAS Mission and Special Project Support

12.1 General Requirements

The Contractor shall provide mission support and special project activities for NASA WFF assigned aircraft and the WFF Aircraft Office. Mission and special projects may occur in CONUS or OCONUS. Example missions and activities include:

1) P-3 Orion Operation Ice Bridge – Greenland;
2) P-3 Orion Operation Ice Bridge – Antarctica;
3) P-3 Orion DISCOVER-AQ – Houston, TX;
4) C-23 Sherpa CARVE – Fairbanks, Alaska;
5) UH-1 Huey Range Surveillance Activities – WFF;
6) C-130 Hercules Cargo logistical support flights – CONUS/OCONUS;
7) B-200 King Air Aerial Photo Support – WFF; and
8) Site visits to new deployment locations

A statement of work specific to each mission/project will be created detailing the specifics of each mission/project (description, dates, locations, flight hours, etc.) as well as types of personnel required for each mission/project. All missions/projects shall utilize existing contract personnel assigned to the core functions of this contract prior to acquiring surge personnel.

12.1.1 Deployment Travel

When required by NASA, the Contractor shall provide personnel at deployed aircraft locations both within the contiguous United States (CONUS) and outside the contiguous United States (OCONUS). The Contractor shall:

1) Coordinate with and receive NASA management approval to determine which technical disciplines and staffing levels will be required to support each deployment.
2) Ensure all support personnel have security clearances, if required, by NASA based on mission.
3) Ensure personnel meet all health, passport, visa, air carrier, and security requirements when traveling.
4) Identify deployment personnel at least sixty (60) days in advance of OCONUS deployments in order to support Visa application and travel order requirements. NASA may require more than sixty (60) days' notice for deployment to some locations.
5) Identify deployment personnel at least thrity (30) days in advance of CONUS deployments in order to support travel order requirements. NASA may require more than thrity (30) days' notice for deployment to some locations.
6) Provide medical insurance including medical evacuation insurance for OCONUS deployed personnel.
7) Comply with Joint Federal Travel regulations and travel within approved per diem rates.

13.0 Other NASA Aircraft/UAS Support

13.1 General Requirements

The Contractor shall provide aircraft maintenance (scheduled and unscheduled) and support services for other NASA aircraft including aircraft located/operated at other facilities and locations. Example aircraft may include additional training, program support or mission management aircraft. The aircraft type, model, and series will be determined at a future date.

14.0 Scheduled and Unscheduled Maintenance Overtime and Surge Capability

14.1 General Requirements

The Contractor shall provide overtime and/or surge capability for scheduled and unscheduled maintenance tasks that cannot be completed during the core hours of operations as defined in Section 4.1.2.1.

15.0 Visiting Aircraft/UAS Support

15.1 General Requirements

Visiting aircraft are defined as aircraft (government or commercially owned) that are not WFF Aircraft Office assigned aircraft but operate from WFF and are engaged in temporary flight operations out of the WFF airport, or potentially in aid of an aircraft with a malfunction/emergency that requires assistance.

The Contractor shall provide maintenance to visiting aircraft as requested by NASA. The Contractor shall provide support for visiting aircrew needs such as badging and base escort, and coordinating the use of government equipment and spaces, to include administrative services.

16.0 Contract Aircraft/UAS Support

16.1 General Requirements

There are times when the requirements of NASA missions exceed the scheduled capacity of the NASA-owned aircraft/UAS at WFF or within the Agency as a whole. Part of this requirement may include cargo transport and/or range surveillance, as well as other requirements as deemed necessary by the appropriate NASA Manager.

In order to provide airborne support as determined by a NASA Manager, the Contractor shall provide access on an as-needed basis to the following aircraft/UAS types:

1.) Single and multi-engine propeller type aircraft/UAS;
2.) Single and multi-engine jet type aircraft/UAS;
3.) Single and multi-engine rotorcraft/UAS;
4.) Electric powered aircraft/rotorcraft/UAS;
5.) Fuel cell based aircraft/rotorcraft/UAS;
6.) Lighter than air aerial vehicles;
7.) Glider type aircraft/UAS; and
8.) Rocket powered (solid, liquid, and/or hybrid) aerial vehicles.

17.0 WFF Airport Operations

17.1 General Requirements

The WFF Aircraft Office does not currently own or operate the WFF airport but the potential exists during the life of this contract for the WFF Aircraft Office to gain management and operational control of the WFF airport including the UAS runway(s) and helicopter pad on Wallops Island. The WFF airport provides routine typical airport functions (Air Traffic Control, fueling, ground handling, etc.) as well as research support (noise studies, aircraft water ingestion, runway incursion studies, runway friction studies, etc.)

The Contractor shall support the following tasks (individually or as a group):

1.) Airport management support;
2.) Air Traffic Control support;
3.) Airport project support;
4.) Airport maintenance support; and
5.) Aircraft/UAS fuel support.

The Contractor shall be capable of procuring items needed for the airfield repair, improvements, and projects: Examples include:

1.) Lighting;
2.) Asphalt;
3.) Concrete;
4.) Water ingestion pit material;
5.) Arresting gear;
6.) Signage (per FAA regulations);
7.) Paint (per FAA regulations); and
8.) Aircraft fuel.

The Contractor shall operate the WFF airport/airfield and its associated services in accordance with 840-AFOH-0001 *Airport Facility Operations Handbook* and applicable FAA and industry standards and requirements.

18.0 P-3 Re-Wing Management/Oversight

18.1 General Requirements

The NASA P-3 (Buno 152735) is scheduled for re-wing beginning August 2014. The Contractor shall provide project management and oversight support for the re-wing effort until the re-wing effort is completed. NASA will retain airworthiness authority for the P-3 aircraft during the re-wing effort. Examples of items required include:

1) Project management oversight of the re-wing effort (management schedule, costs, etc.);
2) On-site oversight support at the re-wing vendor's facility to handle over and aboves (O&A), discrepancy reports and corrective actions;
3) Engineering review of modifications to the P-3 with NASA providing the final approval of modifications;
4) Review of the US Navy contract to see how it applies to the NASA P-3 aircraft and what issues may arise using the US Navy contract in regards to the existing configuration of the NASA P-3 aircraft.
5) Draft a Memorandum of Agreement between the re-wing vendor and NASA to cover O&As, who has approval authority, types of items that should or should not be documented as O&As, who negotiates discrepancy reports, etc. NASA shall have final approval authority of this memo prior to NASA signing and entering into an agreement with the re-wing vendor.
6) Provide NASA with weekly status updates (schedule and financial) concerning the re-wing effort.

19.0 Facility Instrumentation Support

19.1 General Requirement

The WFF Aircraft Office owns several facility instruments that can be loaned to various experimenters and organizations to support scientific efforts around the world. Currently the Aircraft Office owns:

1. Two Appalanix 610's;
2. One Appalanix 410;
3. One Sigma Space lidar;
4. One Riegl lidar;
5. One Digital Camera System;
6. P-3 Orion University of North Dakota Data System; and
7. P-3 Orion Flight Test Data System.

The Contractor shall be capable of providing maintenance support (scheduled and unscheduled) of each instrument/system as well as field support to include mechanical and electrical installation on an aircraft/UAS, operation of instruments/systems and post-flight data analysis. Instruments may be added to or removed from the AO inventory in the future.

20.0 Miscellaneous Contract Support Activities

20.1 Training - Specialty

The Contractor shall provide training identified by NASA as specialty training to Contractor and NASA identified personnel. Personnel trained to accomplish critical tasks shall be recertified on an annual basis or as stipulated in applicable DOD, NASA, and OEM documents.[14] The Contractor shall provide training materials and additional training classes (cold weather survival, jungle survival, etc.) per NASA requests.

20.2 Conferences

The Contractor may be required to:

1) Attend conferences; and
2) Receive concurrence from the COR and approval from the NASA CO prior to attending any Contractor requested conferences.

20.3 Special Events

The Contractor shall provide coordination, setup, and teardown support for special events as required. Examples include:

1) AO all hands meetings;
2) Airshows;
3) Public relation events;
4) Crew return activities; and
5) Visitor support.

20.4 Aircraft Acceptance, Transfer and Disassembly

The Contractor shall:

1) Perform aircraft and equipment acceptance and transfer actions in accordance with 830-GMM-0001 *General Maintenance Manual*, while continuing to support flying operations; and
2) Work with the Government to identify aircraft for continued support of the NASA mission versus retirement. Any drawdown and transfer timeline plans will be prepared by NASA and delivered to the Contractor.

[14] *In the event of a conflict between recertification training frequencies cited in this statement of work and those stipulated in other documents, the more frequent recertification training requirement shall apply.*

3) Disassemble any aircraft deemed by NASA to be a parts aircraft after the aircraft has been struck from the NASA inventory. Properly inventory all parts for future use or repair. NASA will provide the proper processes to disassemble an aircraft when an aircraft disassembly is required.

20.5 Courier Services

The Contractor shall supply courier services to pick up and deliver customer hardware and other government property. Typically courier services are required for transport of items to the NASA Goddard Space Flight Center Greenbelt, MD and/or NASA Langley Research Center Hampton, VA.

20.6 Support Outside Normal Work Hours

The Contractor shall:

1) Assign an on-call support person(s) in accordance with CFR Title 5 Section 551.431 outside the normal work hours listed in SOW Subsection 4.1.2 to provide assistance to meet any of the services identified in this SOW; and
2) Support person(s) shall arrive at WFF within 2 hours of initial request for assistance.

20.7 Mishap and Close Call Investigation

The Contractor shall:

1) Support mishap investigations when requested by NASA;
2) Ensure mishap investigation support is in accordance with GPR 8715.2 *Aviation Safety Program*, 830-MAMC-0001 *Aircraft Office Mission Anomaly and Mishap Contingency Plan*, and NPR 7900.3, *Aircraft Operations Management Manual*; and
3) Ensure personnel assigned to investigate mishaps are trained.

20.8 Facility Disaster Recovery and Restoration

The Contractor shall assist the Government in disaster recovery and restoration of facilities.

20.9 Support Locations

NASA may add or remove other NASA centers or forward operating locations (FOL) during the contract period of performance to meet NASA mission demands.

20.10 Expedited Sub-Contracting

The Contractor shall obtain services or property on an expedited basis that requires the placement of a sub-contract/purchase order. The Contractor shall notify NASA on the status of the request within three (3) work days. Special attention should be paid to obtaining the appropriate Rights in Data, when requested by NASA. Refer to SOW Subsection 7.3.4.3 for warranty information on sub-contracts.

Appendix A – Acronyms

Acronym	Definition
A2LA	American Association of Laboratory Accreditation
ABO	Aviators Breathing Oxygen
ACD	Aircraft Change Directives
ACTD	Advanced Concepts and Technology Demonstrations
ADAS	Advanced Digital Avionics System (STA)
AFE	Aircrew Flight Equipment
AFI	Air Force Instructions
AFMAN	Air Force Manual
AFOH	Airport Facility Operations Handbook
AFOSHSTD	Air Force Occupational Safety and Health Standard
AFS	Agency Filing Scheme
AFTO	Air Force Technical Order
AGSE	Aircraft Ground Support Equipment
ALSS	Aviation Life Support System
AMOS	Aircraft Maintenance and Operational Support contract
AO	Aircraft Office
APACS	Aircraft and Personnel Automated Clearance System
APU	Auxiliary Power Unit
ARINC	Aeronautical Radio, Incorporated
AWBS	Automated Weight and Balance System
AWP	Awaiting Parts
BCM	Beyond the Capability of Maintenance
CAD	Computer Aided Design or Cartridge Activated Device
CBL	Commercial Bill of Lading
CBPO	Combined Preflight and Basic Post Flight
CCP	Configuration Control Panel
CCPD	Configuration Control Panel Directives
CDMS	Center Directives Management System
CFR	Code of Federal Regulation
CO	Contracting Officer
COM	Communications
COM/NAV	Communications and Navigation
COMSEC	Communications Security
CONOPS	Concept of Operations
CONUS	Contiguous United States
COR	Contracting Officer's Representative
CRL	Component Repair Listing
DAASO	Defense Automatic Addressing System Office
DAMES	Defense Automatic Addressing System Office (DAASO) Automated Message Entry System

Acronym	Definition
DER	Designated Engineering Representative
DCN	Drawing Change Notice
DIFM	Due in from Maintenance
DME	Distance Measuring Equipment
DLC	Direct Lift Control
DOD	Department of Defense
DOT	Department of Transportation
DR	Deficiency Report
DRD	Data Requirement Description
DRL	Data Requirements List
EDM	Engineering Data Management
EMI	Electromagnetic Interference
ERRC	Expendability, Reparability, Recoverability Category
ESWR	Experiment Software Work Order
ETIC	Estimated Time-in-Commission
ESD	Electrostatic Discharge
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation or Federal Acquisition Regulation
FBO	Fixed Base Operator
FCE	Flight Crew Equipment
FCF	Functional Check Flight
FMC	Full Mission Capable
FMEA	Failure Mode and Effects Analysis
FMECA	Failure Mode Effects and Criticality Analysis
FMI	Fleet Modification Instruction
FOD	Foreign Object Damage/Debris
FOE	Foreign Object Elimination
FOL	Forward Operating Location
FOM	Flight Operations Manual
FRR	Flight Readiness Review
FSA	Flight Scheduling Application
FTE	Customer Asset Report
FTR	Reply to Customer Asset Report
FP	Fixed Price
FY	Fiscal Year
GA	General Aviation
GBL	Government Bill of Lading
GHOC-E	Global Hawk Operations Center - East
GIDEP	Government Industry Data Exchange Program
GPS	Global Positioning System
GSA	General Services Administration
GSFC	Goddard Space Flight Center

Acronym	Definition
GMM	General Maintenance Manual
HAZMAT	Hazardous Material
I-D	Intermediate and Depot
IT	Information Technology
IATA	International Air Transport Association
ICAO	International Civil Aviation Organizations
IDIQ	Indefinite Delivery/Indefinite Quantity
IFR	Instrument Flight Rules
ILS	Instrument Landing System
IMO	International Maritime Organizations
JDRS	Joint Deficiency Reporting System
JHA	Job Hazard Analysis
LaRC	Langley Research Center
LOA	Letter of Authorization
LRU	Line Replaceable Unit
MC	Mission Capable
MILSBILLS	Military Standard Billing List
MMA	Mission Management Aircraft
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAMIS	NASA Aircraft Management Information System
NASA	National Aeronautics and Space Administration
NDI	Non-Destructive Inspection
NMC	Not Mission Capable
NMCD	Not Mission Capable Decision
NMCE	Not Mission Capable Engineering
NMCEP	Not Mission Capable Engineering Project
NMCFS	Not Mission Capable Storage
NMCI	Not Mission Capable Investigation
NMCM	Not Mission Capable Maintenance
NMCO	Not Mission Capable Operations
NMCR	Not Mission Capable Retirement
NMCS	Not Mission Capable Supply
NPR	NASA Procedural Requirements
OCONUS	Outside the Contiguous United States
OEM	Original Equipment Manufacturer
ORM	Operational Risk Management
ORR	Operational Readiness Review
OSHA	Occupational Safety & Health Administration
OTI	One Time Inspection
OTR	One Time Replacement
PAD	Propellant Activated Device

Acronym	Definition
PDF	Portable Document Format
PDP	Payload Data Package
PG	Procedure and Guideline
PIC	Pilot-In-Command
PIP	Program Implementation Plan
QA	Quality Assurance (NASA)
QAE	Quality Assurance Evaluator
QC	Quality Control (Contractor)
QMS	Quality Management System
QRC	Quick Reaction Capability
RDEL	Requirements Data Exchange List
RF	Radio Frequency
RFI	Radio Frequency Interference
RPC	Repair Processing Center
SAAM	Special Assignment Airlift Mission
SAE	SAE International (formerly Society of Automotive Engineers)
SATERN	System for Administration, Training and Education Resources for NASA
SCI	Sensitive Compartmented Information
SDR	Supply Discrepancy Report
SE	Support Equipment
SEO	Sensor Equipment Operator
SIC	Second-In-Command (pilot)
SLE	Service Life Extension
SOW	Statement of Work
SP	Spare
SPOT	Synchronized Pre-deployment and Operational Tracker
SRU	Serviceable Repairable Unit
STIC	Science and Technology Information Center
STD	Standard
SUP	Suspected Unapproved Parts
T&E	Test and Evaluation
TCPED	Tasking, Collection, Processing, Exploitation, and Dissemination
T.O.	Technical Order
TTE	Task Transmittal Engineering
UAS	Unmanned Aircraft Systems
USAF	United States Air Force
V&V	Validation and Verification
VFR	Visual Flight Rules
VOR	VHF Omni-directional Range
VPP	Voluntary Protection Program (OSHA)
WEBSDR	Web Based Supply Discrepancy Report
WFF	Wallop Flight Facility

Attachment A

Acronym	Definition
WI	Work Instruction

Appendix B – Definitions

Word	Definition
Acceptance Inspection	Inspection performed at the time an aircraft changes physical or reporting custody. Includes as a minimum, logs and records review, NAMIS baseline data entry, configuration verification to include any one-time inspections/replacements issued by NASA, and the equivalent of a preflight inspection. NASA may elect to increase inspection depth if the aircraft material condition or record examination indicates such actions are warranted.
Accessory	A self-contained unit mounted on a higher assembly or is installed in a weapon system or end item of equipment. It is designed to perform a specific function; such as, generating electrical power, producing hydraulic or oil pressure or to apply these sources of power for actuating doors, mechanisms, and flight control surfaces.
Accumulated Work Hours	Hours that are expended against a job/task by individuals assigned to the same task (refer to man-hours).
Air Abort	Any discrepancy discovered in flight that results in an aircrew aborting his/her planned mission to safely land the aircraft before the mission objectives are completed.
Aircraft Change Directive	Aircraft change directives (ACD) apply to all AO aircraft and aircraft-related systems. An ACD refers to airworthiness directives, service changes, customer bulletins, service bulletins, engine bulletins, airframe bulletins, and airframe changes that are received from aircraft or component manufacturers, the FAA, and the DOD and to NASA locally-generated one-time inspections and one-time replacements.
Aircraft Ground Support Equipment	Powered or Non-Powered Support Equipment used to support maintenance in the servicing, repair, operation, removal/installation of equipment or test of aircraft and its related systems. Ground support equipment also includes all calibrated tools, test sets and other calibrated equipment that involves the use of approved instrument calibration procedures.
Aircraft Logbook	A detailed service record maintained for each individual aircraft.
Aviation Life Support Equipment (ALSE)	Individual items worn by, attached to, used by, or provided for aircrew and passengers to maintain life, health, function, and safety during flight and to provide for escape, descent, survival and recovery. ALSE includes life sustaining equipment such as oxygen regulators, pressurization components, egress or jettison system components, etc., installed on an aerospace vehicle.
Alteration	A change that does not affect the basic character or structure of the end item it is applied to. It limits, qualifies or restricts an end item to a new purpose or end.
Audit	A periodic evaluation of detailed plans, policies, procedures, products, and data.
Avionics	Includes electronic, electrical, instruments, communication and navigation equipment and their subsystems taken either as independent equipment, or integrated systems to accomplish the mission.
Awaiting Maintenance	Time when an aircraft or end item is not mission capable or partial mission capable and no maintenance is being accomplished on these end items that caused the not mission capable or partial mission capable status.
Awaiting Parts	The condition that exists when materials are required to complete the maintenance action and these materials are not readily available; work cannot be performed on the item being repaired due to lack of ordered parts.

Word	Definition
Bench Check	A physical inspection or functional test of an end item removed for an alleged malfunction to determine if the part or item is serviceable or repairable. It also includes any off-equipment action by maintenance in determining the condition status of an item or a determination of the extent of maintenance, repair, or possible overhaul required to return it to a serviceable status. Bench check includes repair actions when the repair is accomplished concurrently with the bench check.
Beyond the Capability of Maintenance	A term/code used by the intermediate and/or depot level support shops when a repair is not authorized at that level or when an maintenance activity is not capable of being accomplished due to lack of equipment, facilities, technical skills, technical data, or parts.
Bits and Pieces	Items that are normally treated as one piece of hardware, or are physically constructed of two or more pieces joined together in a way that prevents disassembly without destruction or impairment of the designed use. Examples of such items are nuts, screws, gaskets, seals, bearings, brushes, gears, fuses, light bulbs, tubes, capacitors, and resistors.
Cannibalization or Cannibalize	The removal of a component from an aircraft, engine or other end item that is not available from normal supply sources to make a second piece of equipment functional.
Certificated Aircraft	An aircraft certified for flight by the FAA, not a public use aircraft. Also see Type Certificated.
Close-Loop Reporting	A term which means providing a written response of no impact, no usage or impact with rationale at program milestone and readiness reviews or according to contract or other specified reporting times/events for each GIDEP Notice and NASA Advisory.
Combined, Preflight and Post-Flight Inspection	An inspection that encompasses the full scope of a pre-flight and post-flight inspection and is accomplished at the same time to satisfy both requirements.
Conditional Inspection	An inspection conducted as a result of a specific over-limit condition, or as a result of circumstances or events which create an administrative requirement for an inspection. Examples include hard landing, overstress/over “G”, over-temperature, lightning strike, overweight landing or take-off. Examples of administrative actions include one-time inspections imposed by NASA.
Configuration	The functional and/or physical characteristics of hardware and software as set forth in technical documentation and achieved in a product.
Configuration Control	The procedures necessary to control the form, fit, and function of components, sub-systems, and systems.
Configuration Item	The term can be applied to anything designated for the elements of configuration management and treated as a single entity in the configuration management system. The entity must be uniquely identified so that it can be distinguished from all other configuration items.
Configuration Management System	A unique identification, controlled storage, change control, and status reporting of selected intermediate work products, product components, and products during the life of a system. The objective of this system is to avoid the introduction of errors related to incompatibilities with other configuration items.
Configuration Control Board	A group of knowledgeable representatives that represent a cross-section of the organization (management, engineering, operations, safety, maintenance and quality) established to review and approve or disapprove configuration changes in the baseline configuration of an aircraft or asset.

Word	Definition
Consumable Item	Any item or substance which, upon installation, loses its identity and is normally consumed in use or cannot be economically repaired.
Contracting Officer	A person with the authority to enter into (purchase), administer or terminate contracts and make related determinations and findings.
Contracting Officer's Representative	A representative designated by the CO who performs primarily technical functions such as providing technical direction, inspection, approval of drawings, testing, and other functions or a technical or administrative nature not involving a change in the scope, price, terms or conditions of the contract.
Controlled Equipment	All non-sensitive equipment with an acquisition cost of $5,000 or more and an estimated service life with two years or more, which will not be consumed or expended in an experiment. Also selected items of property with an acquisition cost less than $5,000 that are designated and identified as sensitive, by the holding Center, such as weapons and certain types of hazardous devices.
Customer-Supplied Product	Products, such as payloads and flight equipment, owned by NASA or another contractor for the purpose of flight processing, testing, storage, analysis, modification, and/or fabrication.
De-Dock/Post Dock Meeting	A formal meeting between NASA representatives and the Contractor for the purpose of identifying all maintenance requirements that were accomplished during the phase/major calendar/hourly inspection or depot work. Refer to AOD WI 34100 for additional information on these type meetings.
Delayed Discrepancy	A malfunction or a discrepancy that does not create a not-mission capable status and is not immediately corrected.
Deployment	The temporary relocation of an aircraft, support personnel, and/or equipment from WFF to other CONUS or OCONUS locations in support of AO missions or requirements.
Depot	The facility where depot level maintenance is accomplished.
Depot Level Maintenance ("D" Level)	Maintenance accomplished on aircraft or equipment requiring major rework or a complete rebuild of parts, assemblies, sub-assemblies and end items, including manufacture, alteration, testing and reclamation of parts as required. D-level maintenance is normally accomplished by personnel of higher technical skills and in facilities with more extensive shop facilities and equipment than available at the O and I level maintenance activities.
Discrepancy	A non-standard condition that is noted when operating or maintaining an aircraft/equipment that requires corrective action to restore the aircraft/equipment to normal operating conditions/parameters contained in approved technical data.
Due in for Maintenance	A system to track the status and location of repairable aircraft assets to be returned from repair/overhaul either at field level or depot level maintenance activities.
Engineering Project	A defined, bounded activity requiring engineering support.
Estimated Time-In Commission	Estimated date/time aircraft scheduled or unscheduled maintenance actions will be completed to restore the aircraft or end item to a full mission capable status.
Familiar	Having a working knowledge for the area identified. Familiarization is normally achieved from prior military/commercial experience, formal class-room or on-the-job-training.
Fleet Modification Instructions	A document describing a modification to be incorporated on an entire aircraft fleet, group of aircraft, or a major system.

Word	Definition
Flight Readiness Review	A thorough, impartial review by NASA Management and the support contractor to certify an aircraft is safe to fly its intended mission following completion of major structure repairs, modifications and/or alterations. Refer to 800-PG-1060.2.2 Airworthiness Review Process for additional information concerning Flight Readiness Reviews.
Forward Operating Location	A location other than WFF, overseen by NASA, where maintenance and operations of NASA aircraft are performed.
Full Mission Capable	The material condition of an aircraft indicating it can perform its assigned mission. A Full Mission Capable aircraft has completed a Basic Pre-flight or Thru-Flight inspection and is ready in all respects to be released "safe for flight".
Functional Check	The functional check and operation of an end-item on the aircraft or in the support shops, using equipment, procedures, and limits in approved technical data. NASA components requiring Functional Checks are contained in work cards.
Functional Check Flight	A flight to determine whether the airframe, power plants, accessories and equipment are functioning per predetermined standards while subjected to the intended operating environment.
Functionally Controlled Equipment	Equipment under $5,000 which is controlled by an on-site functional manager and is not considered sensitive. Functional managers are required to approve purchases and excess actions for equipment in their functional areas.
GIDEP Notices	The term "GIDEP Notices" means "GIDEP Alerts, GIDEP Safe-Alerts, GIDEP Problem Advisories, and GIDEP Agency Action Notices.
Ground Abort	For those one of a kind aircraft that cannot be spared for a mission, a ground abort is defined as any time an aircrew walks to an aircraft scheduled to fly and the aircraft is not subsequently launched due to a detected malfunction and the malfunction cannot be repaired within one hour from the time of discovery (refer to Maintenance Delay).
Ground Functional Check	Accomplished when the maintenance action on an aircraft involves only the removal and reinstallation of connecting hardware without a change in adjustment or alignment to flight control systems. This ground functional check is used to determine airworthiness of an aircraft in lieu of a functional check or operational check flight.
Hand Tool	A tool commonly used on aircraft such as screwdrivers, wrenches, sockets, which may be easily purchased from a local vendor.
Hazard	Any real or potential condition that can cause injury or death to personnel, or damage to, or loss of equipment or property. This hazard may be a result of personnel error, environment, design characteristics, procedural differences, or sub-systems or component failure or malfunction.
Human Factors	Recognition that personnel performing tasks are affected by physical fitness, physiological characteristics, personality, stress, fatigue, distraction, communication and attitude.
Inspection	The examination and testing of aircraft, engines, supplies and services, including raw materials, components, and intermediate assemblies, to determine whether they conform to specified requirements.

Word	Definition
Intermediate Maintenance (“I” Level)	Maintenance which is the responsibility of, and is performed by designated maintenance activities for direct support of organizational maintenance activities. It includes, but is not limited to calibration, repair or replacement of damaged or unserviceable parts, components or assemblies, and the local fabrication of non-available parts.
Key Characteristics	The features of a material, process, or part whose variation has a significant influence of product fit, performance, service life or manufacturability.
Life-Limited Component	Any component for which mandatory replacements limit (calendar, hourly, cycles or events) are specified in the type design, the Instructions for Continued Airworthiness, or approved maintenance manual.
Life Status	The accumulated calendar days, hours, cycles or events on mandatory life-limited components.
Maintenance	The function of retaining material in, or restoring it to, a serviceable condition. It includes servicing, inspecting, replacement, alterations, or defect rectification of an aircraft or an aircraft component that is performed after completion of manufacturing.
Maintenance Delay	Any mission that is delayed due to a detected or suspected maintenance malfunction discovered by an aircrew and/or maintenance personnel on an assigned aircraft that can be corrected by the maintenance contractor within 1 hour from the received time of the reported malfunction.
Major Engine Inspection	A comprehensive inspection performed to determine the material condition of an engine. This inspection is performed when the engine is removed from the aircraft.
Mission Capable	The material condition of an aircraft indicating it can perform its assigned missions. A Basic Preflight or Thru-flight Inspection has not been performed and the aircraft is not ready to be released “safe for flight”.
Mission Effectiveness	The launching of one or more aircraft to achieve a mission and the mission results are reported by an aircrew as “successfully completed” following the mission. Refer to definition of Air Abort.
Mission Management Aircraft	Those administrative aircraft certified by the Federal Aviation Administration and used primarily for passenger transport. These include aircraft used to transport management and staff personnel on official travel for the purpose of satisfying mission requirements or other travel for the conduct of agency business.
NASA Aircraft	Aircraft that are bought, borrowed, chartered, rented, or otherwise procured or acquired--including aircraft produced with the aid of NASA funding--regardless of cost, from any source for the purpose of conducting NASA science, research, or other missions, and which are operated by NASA or whose operation is managed by NASA. Unmanned aircraft are defined as “aircraft” by the FAA and are included in the definition of NASA aircraft, unless specified otherwise. See NPR 7900.3 Aircraft Operations Management Manual for specific definitions of each type listed here.
Non-conformance	A condition of product or service in which any characteristics do not conform to specifications required and/or stated. This may include failures, deficiencies, defects, malfunctions and the like.
Non-Labor Resources	Resources provided by the contractor other than labor to include materials, equipment, training, travel, and other direct costs.

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Word	Definition
Not Mission Capable	The material condition of an aircraft indicating it is not capable of performing any of its assigned missions (refer to Not Mission Capable Maintenance or Supply).
Not Mission Capable Decision	The material condition of an aircraft pending final disposition by NASA Management that may include picking an aircraft up that had cross-county maintenance completed, retirement, storage and the like.
Not Mission Capable Engineering	The material condition of an aircraft indicating work to be accomplished to correct a material anomaly is beyond the capability of approved technical data and the disposition to restore the aircraft to the equivalent or improved material condition it had before the discrepancy was sustained or noted comes directly from Aircraft Office Engineering (NASA or Contractor). The use of this aircraft status indicates Maintenance is at a complete work stoppage for Engineering.
Not Mission Capable Engineering Project	The material condition of an aircraft indicating the aircraft is not mission capable due to an engineering project.
Not Mission Capable Storage	The material condition of an aircraft indicating a not-mission-capable decision has been made to place the aircraft in a flyable or long-term storage.
Not Mission Capable Impoundment	The material condition of an aircraft indicating the aircraft has been impounded by NASA.
Not Mission Capable Maintenance	The material condition of an aircraft or component indicating it is not capable of performing its assigned mission due to a “downing” discrepancy for scheduled or unscheduled maintenance in the NASA provided automated database.
Not Mission Capable Operations	The material condition of an aircraft indicating it is ready to be picked up and returned to WFF or other FOL site pending aircrew availability.
Not Mission Capable Retirement	The material condition of an aircraft indicating a not-mission-capable-decision has been made to retire the aircraft.
Not Mission Capable Supply	The material condition of an aircraft indicating it is not capable of performing its mission due to a “downing” discrepancy for scheduled or unscheduled maintenance that cannot be accomplished due to supply shortage. Aircraft in this category are at a complete work stoppage for supply.
Operational Check Flight	An in-flight check of lesser severity than a functional check flight that is flown to determine whether selected aircraft systems operate per predetermined standards while subjected to the intended operating environment. Refer to AOD WI 34100 for aircraft specific maintenance actions that generate OPS Check Flight requirements.
Organizational Maintenance (“O” Level)	Maintenance (scheduled or unscheduled which is the responsibility of, and is performed by, a using organization on its assigned equipment. It includes, but is not limited to inspecting (conditional, special, phase, calendar, cyclic, before/after flight, acceptance or transfer) servicing, lubricating, adjusting, replacing line replaceable units, mechanical accessories, electrical/hydraulic and minor assemblies and sub-assemblies.
Phase Inspection	A series of related inspections performed sequentially at specific intervals. These inspections are the result of dividing the maintenance requirements into small packages containing approximately the same workload.
Post-Flight Inspection	An inspection conducted after each flight to detect degradation or damage that may have occurred during the flight and to determine the need for servicing.

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Word	Definition
Pre-Dock Meeting	A formal meeting between NASA and the support contractor prior to the input of an aircraft into scheduled phase/major calendar/hourly inspections or depot work to identify all maintenance requirements that will be accomplished during these type inspections.
Preflight Inspection	The final inspection conducted prior to the first flight of each flight day to ensure the aircraft is safe for flight and to verify proper servicing.
Preventive Maintenance	Systematic inspection, detection, correction, and prevention of early failures, before they become actual or major failures.
Program Support Aircraft	Aircraft used to support programs and mission operations. This includes, but is not limited to, astronaut training, safety chase, photo chase, cargo transport, flight training, range surveillance, launch security, and command and control.
Project Aircraft	An aircraft with a problem that cannot be solved with normal maintenance technical data, requiring engineering assistance. Specific anomalies will also cause an aircraft to become a project.
Project Engine	An engine with a problem that cannot be solved with normal maintenance technical data, requiring engineering assistance. Specific anomalies will also cause an engine to become a project.
Property, Plant and Equipment System	An agency-wide tool/system used throughout the agency to identify, control and account for Government-owned equipment acquired by or in use by NASA and its Contractors.
Public Use Aircraft	An aircraft operated by or on behalf of the Government.
Qualifications	Training or competencies, which provide an individual the necessary skills, knowledge, or credentials to perform a specific function. These qualifications are normally achieved from prior military/commercial experience, formal class-room or on-the-job-training.
Quality Management System (QMS)	A system by which an organization aims to reduce and eventually eliminate non-conformances to specifications, standards, and customer expectations in the most effective and efficient manner.
Receiving Inspection	An inspection to verify that purchased products conform to specified purchase requirements. Verification activities may include obtaining objective evidence of the quality of the product from suppliers to include accompanying documentation, certificate of conformity, test reports, statistical records and establishment of process controls to ensure key characteristics have been met.
Recurring Discrepancy	When an aircrew member reports the identical discrepancy on an aircraft within ten flight hours of original occurrence.
Repeat Discrepancy	When an aircrew member reports the identical discrepancy on an aircraft within five flight hours of original occurrence.
Scheduled Maintenance	Known or predictable maintenance requirements based on calendar, hourly, events, or cycles, that can be planned or programmed for accomplishment on short and long-range schedules. This includes accomplishing recurring scheduled maintenance inspection and servicing, complying with configuration items, accomplishing scheduled time change item replacements, and correcting delayed or deferred discrepancies. It also includes modification and renovation projects that are programmed for depot.
Service Bulletin	A document which directs a one-time inspection of an in-service aircraft, system, sub-assemblies, components or piece of support equipment. These documents are normally issued by Federal Aviation Authority (FAA) or DoD.

Word	Definition
Service Change	A document which directs and provides instructions for the accomplishment of a change, modification, repositioning or alteration of material in an in-service aircraft, system, sub-assemblies, components or piece of support equipment from its original design. These documents are normally issued by Federal Aviation Authority (FAA) or DoD.
Sensitive Equipment and Parts	An item of equipment that, due to its pilferable nature or the possibility of it being a hazard, requires a stringent degree of control. A sensitive item can be capital or non-capital. Generally, sensitive items are controlled at an acquisition cost of $500 or more.
Serviceable Condition	The condition of an item that is capable of performing its purpose and function to the requirements for which it is originally intended.
Servicing	The replenishing of all fluids, fuel, oil, water methanol, as well as cleaning the aircraft exterior and interior, cleaning food dispensing equipment, ice chests, coffee pots, hot cups, chemical toilets, as required. This may also include storage of meals on the aircraft.
Sortie	A completed flight; equivalent to 1 takeoff and 1 full stop landing.
Special Inspection	A scheduled inspection with a prescribed interval other than preflight, phase, major engine or standard depot level maintenance. These intervals are specified in the applicable planned maintenance system publication and are based on elapsed calendar time, flight hours, operating hours, or number of cycles or events. Examples include 50 hour, 225 hour, 45-day, and 90-day inspections.
Special Upkeep	Work accomplished to an aircraft, without regards to flying hours or special events, to improve, change or restore and/or enhance the material condition. For example, corrosion control program, major paint touch-ups.
Time Change Technical Order	A document issued by the DOD to provide technical information necessary to properly and systematically inspect or alter the configuration of aircraft, engines, systems or components. This includes all types of changes and bulletins and consists of information that is not normally disseminated by revisions to technical manuals.
Technical Data	Data that is necessary to ensure that the aircraft and related systems can be maintained in a condition such that serviceability and airworthiness of the aircraft and related operational and emergency equipment, is assured. This data includes maintenance cards, NASA/Department of Defense (DoD) technical orders and work cards, manufacturer's maintenance manuals, Aircraft Office (AO) unique work instructions (WIs), fleet modification instructions (FMIs), engineering drawings, test procedure – flight test plans, Federal Aviation Authority (FAA)-approved original equipment manufacturer (OEM) standards, aircraft change directives (ACDs) (e.g. airworthiness directives, service bulletins, etc) and any other subscriptions, data, and specifications.
Test Procedure-Flight Research Project	An approved, repetitive inspection or test on NASA aircraft, components or ground support equipment.
Through-Flight Inspection	An inspection conducted on an aircraft between flights flown on the same day to ensure the integrity of the aircraft for flight, verify proper servicing, and to detect any degradation that may have occurred during the previous flight.
Training	The process of providing knowledge and skills to individuals to better enable them to perform their current duties or future duties. Training may include job-specific training such as a series of instructions or proficiency demonstrations leading to a qualification.

Word	Definition
Transfer Inspection	Inspection performed at the time an aircraft changes physical or reporting custody. Includes as a minimum, logs and records review, NAMIS data storage, and the equivalent of a preflight inspection. NASA may elect to increase inspection depth if the aircraft material condition or record examination indicates such actions are warranted.
Troubleshooting	The logical, analytical, and where applicable, an approved technical order prescribed procedure followed in isolating aircraft/equipment malfunctions.
Turn-around Time	This includes wheels in the well for the first flight to wheels in the well for the second flight and any maintenance time required to repair, inspect, service and prepare the aircraft "safe for flight".
Type Certificated	Aircraft with FAA airworthiness certificates.
Unmanned Aircraft System	A UAS is any airborne vehicle system without a pilot onboard that is controlled autonomously by an onboard control and guidance system or is controlled from a monitoring station outside of or remote from the UAS vehicle. A UAS is defined as an aircraft by the FAA. UASs also can be operated via a remotely located, manually operated flight control system or ground control system.
Unscheduled Maintenance	Unpredictable maintenance requirements, maintenance not previously planned or programmed, maintenance requiring prompt attention and must be added to, integrated with, or substituted for previously scheduled workloads. This includes, but is not limited to, compliance with immediate action aircraft change directives, correction of discrepancies discovered during flight or operation of equipment, and performance of repairs as a result of accidents or incidents.
Weather Abort	Any scheduled mission that is not completed due to inclement weather.
Work Instruction	A document that describes how to accomplish specific job activities needed to ensure consistent working methods and achieve the required quality standard.

Appendix C – Personnel Requirements

Position Name	Job Description Guidelines
Accountant I	Prepares balance sheets, profit and loss statements, and other financial reports. Responsibilities also include analyzing trends, costs, revenues, financial commitments, and obligations incurred to predict future revenues and expenses. Reports organization's finances to management, and offers suggestions about resource utilization, tax strategies, and assumptions underlying budget forecasts. May require a Bachelor's of Science (BS) degree in area of specialty and 0-2 years of experience in the field or in a related area. Has knowledge of commonly-used concepts, practices, and procedures within a particular field. Relies on instructions and pre-established guidelines to perform the functions of the job. Works under immediate supervision. Primary job functions do not typically require exercising independent judgment. Typically reports to a supervisor or manager.
Accountant II	Prepares balance sheets, profit and loss statements, and other financial reports. Responsibilities also include analyzing trends, costs, revenues, financial commitments, and obligations incurred to predict future revenues and expenses. Reports organization's finances to management, and offers suggestions about resource utilization, tax strategies, and assumptions underlying budget forecasts. May require a BS degree in area of specialty and 2-4 years of experience in the field or in a related area. Familiar with standard concepts, practices, and procedures within a particular field. Relies on experience and judgment to plan and accomplish goals. Performs a variety of tasks. Works under general supervision. A certain degree of creativity and latitude is required. Typically reports to a supervisor or manager.
Accountant III	Prepares balance sheets, profit and loss statements, and other financial reports. Responsibilities also include analyzing trends, costs, revenues, financial commitments, and obligations incurred to predict future revenues and expenses. Reports organization's finances to management, and offers suggestions about resource utilization, tax strategies, and assumptions underlying budget forecasts. Requires a BS degree in area of specialty, and 4-6 years of experience in the field or in a related area. Familiar with a variety of the field's concepts, practices, and procedures. Relies on experience and judgment to plan and accomplish goals. Performs a variety of complicated tasks. May lead and direct the work of others. A wide degree of creativity and latitude is expected. Typically reports to a manager or head of a unit/department.
Accountant IV	Prepares balance sheets, profit and loss statements, and other financial reports. Responsibilities also include analyzing trends, costs, revenues, financial commitments, and obligations incurred to predict future revenues and expenses. Reports organization's finances to management, and offers suggestions about resource utilization, tax strategies, and assumptions underlying budget forecasts. Requires a BS degree in area of specialty and 6-8 years of experience in the field or in a related area. Familiar with a variety of the field's concepts, practices, and procedures. Relies on extensive experience and judgment to plan and accomplish goals. Performs a variety of tasks. May lead and direct the work of others. A wide

Position Name	Job Description Guidelines
	degree of creativity and latitude is expected. Typically reports to a manager or head of a unit/department.
Administrative Support I	Typically responsible for performing daily office tasks such as filing, recording, maintaining records, copying, posting, and other similar duties, using a computer terminal, typewriter, and other word processors. Plans, coordinates, and edits content of material for publication. May review proposals and drafts for possible publication. Proficient with Microsoft Word, Excel, PowerPoint, and Adobe Acrobat. Organizational, coordination, and customer service skills. Follows organization and department procedures to complete tasks Follows organization and department procedures to complete tasks in a timely manner. Familiar with standard concepts, practices, and procedures within a particular field. Performs a variety of additional office-work tasks. Works under general supervision. Typically reports to a more senior administrative specialist, professional, supervisor or manager. Typically requires a high school diploma or its equivalent. Typically requires 0-2 years of work experience.
Administrative Support II	Typically responsible for performing daily office tasks such as filing, recording, maintaining records, copying, posting, and other similar duties, using a computer terminal, typewriter, and other word processors. Plans, coordinates, and edits content of material for publication. May review proposals and drafts for possible publication. Proficient with Microsoft Word, Excel, PowerPoint, and Adobe Acrobat. Organizational, coordination, and customer service skills. Follows organization and department procedures to complete tasks in a highly skilled and timely manner. Familiar with standard concepts, practices, and procedures within a particular field. Relies on experience and judgment to plan and accomplish goals. Performs a variety of additional office-work and support tasks. Typically reports to a more senior Administrative Specialist, supervisor or a manager. May direct the efforts of others. Typically requires a high school diploma or its equivalent. Typically requires 2-4 years of experience.
Administrative Support III	Typically responsible for performing daily office tasks such as filing, recording, maintaining records, copying, posting, and other similar duties, using a computer terminal, typewriter, and other word processors. Follows organization and department procedures to complete tasks in a highly skilled and timely manner. Familiar with standard concepts, practices, and procedures within a particular field. Relies on experience and judgment to plan and accomplish goals. Performs a wide variety of additional management support functions and other duties as assigned. May serve as facility manager/coordinator. May direct, guide, and coordinate the activities of a team of administrative personnel. Typically reports to a supervisor, manager or program manager. Typically requires an Associate's Degree and 5 years of experience. Perform project coordination duties including calendar control, customer and expense reports.
Aft Observer	Flight operations duty position. Maintain proficiency, currency, and annual requirements required by NASA per 830-FOM-0001 Flight Operations Manual.
Aircraft Ground Support Equipment Maintainer	A fully qualified journeyman qualified to perform maintenance on aircraft ground support equipment (AGSE) only.
Aircraft Mechanic I	A fully qualified journeyman qualified to perform maintenance on

Position Name	Job Description Guidelines
	aircraft or aircraft ground support equipment (AGSE).
Aircraft Mechanic II	Oversees and coordinates the maintenance of aircraft or aircraft components. Individual should be a fully qualified aircraft journeyman and have the ability to direct others in the completion of aircraft related maintenance tasks. Possesses Federal Aviation Administration (FAA) Airplane and Powerplant certification.
Aircraft Mechanic III/Flight Engineer	Oversees and coordinates the maintenance of aircraft or aircraft components. Individual should be a fully qualified aircraft journeyman and have the ability to direct others in the completion of aircraft related maintenance tasks. Possesses Federal Aviation Administration (FAA) Airplane and Powerplant certification or special certification defined in the SOW (e.g. NDI, Welder). Flight operations duty position as Flight Engineer for those that possess an Airplane and Powerplant certification and designated so by NASA. Those individuals designed as Flight Engineers shall maintain proficiency, currency, and annual requirements required by NASA.
Airport Manager	Responsible for the coordination and managing of activities associated with the WFF airport/airfield. Oversees all aspects of assigned projects and airport operations including budgetary, operational and maintenance needs of the airport. Sets deadlines, assigns responsibilities, and monitors and summarizes progress of the airport and assigned projects. May require a BS degree and 4-7 years of experience in the field or in a related area. Familiar with a variety of airport concepts, practices, and procedures. Relies on extensive experience and judgment to plan and accomplish goals. Performs a variety of tasks. Leads and directs the work of others. A wide degree of creativity and latitude is expected. Typically reports to a manager or head of a unit/department.
Aviation Life Support Equipment Maintainer	A fully qualified journeyman qualified to perform maintenance and support of aviation life support equipment (ALSE). May required 4-7 years' experience in the field or related area.
Avionics Technician	Oversee and coordinates the maintenance of aircraft avionics equipment. Individual should be a fully qualified aircraft journeyman and have the ability to direct others in the completion of avionics related tasks. Individual must possess an Avionics Technician certification and have 4-7 years' experience in the field or related area.
Control Tower Operator	A fully qualified person who possesses an FAA Control Tower Operator Certificate with 4-7 years' experience.
Designer	Design or create engineering drawings using CAD systems with reference to engineering specifications.
Documentation Specialist I	Types technical material with reference to rough drafts and corrected copy using a word processor, computer or typewriter. Performs basic editing and suggests grammatical and punctuation corrections to technical personnel. Intermediate knowledge of Microsoft Word, Excel, and Adobe Acrobat.
Documentation Specialist II	Types technical material with reference to rough drafts and corrected copy using a word processor, computer or typewriter. Performs advanced editing. Proficient with Microsoft Word, Excel, PowerPoint, and Adobe Acrobat.
Engineer I	Typically responsible for design, development, test, implementation, and analysis of technical products and systems. May develop a range of products. Familiar with commonly-used concepts, practices, and procedures within a particular field. Typically reports to a more

Position Name	Job Description Guidelines
	senior Engineer, supervisor or a manager. Typically requires a BS degree in engineering. May direct the efforts of others. Typically requires 2 years of experience in the field or in a related area.
Engineer II	Typically responsible for design, development, test, implementation, and analysis of technical products and systems. May develop a range of products. Familiar with commonly used concepts, practices, and procedures within a particular field. Typically reports to a more senior Engineer, supervisor or a manager. May direct the efforts of others. Typically requires a BS degree in engineering. Typically requires 5 years of experience in the field or in a related area.
Engineer III	Typically responsible for design, development, test, implementation, and analysis. Recognized as technical leader and resource. Proficient with a variety of the field's concepts, practices, and procedures. Relies on extensive experience and judgment to plan and accomplish goals. Responsible for the solution of complex total system problems. May direct, guide, and coordinate the activities of a team of technical personnel performing complex engineering activities. Typically reports to a manager or program manager. Typically requires a BS degree in engineering. Typically requires 10 years of related experience. License and certification may be required.
Flight Engineer	Flight operations duty position. Maintain proficiency, currency, and annual requirements required by NASA per 830-FOM-0001 Flight Operations Manual.
Fuel Handler	Organizes the facility's fuel supply by monitoring how much fuel the airport receives and stores. Capable of fueling aircraft requiring fuel. Has knowledge of commonly-used concepts, practices, and procedures within a particular field. Relies on instructions and pre-established guidelines to perform the functions of this job. May require a high school diploma or its equivalent and 0-2 years of related experience. Works under immediate supervision. Typically reports to a supervisor or manager.
Graphics Specialist	Designs or creates graphics for technical material following Air Transport Association technical documentation standards. Technical illustration skills. Proficient with Adobe Photoshop and Corel Designer. Knowledge of AutoCAD, Adobe Acrobat, Microsoft Word, and Excel.
Helper	Entry-level mechanic with no aviation related experience.
Loadmaster	Flight operations duty position. Maintain proficiency, currency, and annual requirements required by NASA. Must have attended a military service or FAA approved related school in the methods of loading and the weight and balance of cargo aircraft with 3-5 years of experience.
Logistics Specialist I	Performs purchasing, shipping, stocking, receiving, issuing, inventory of materials. Evaluates vendor quotes and services to determine most desirable suppliers. Enhances product workflow by analyzing and developing logistics plans that affect production, distribution, and inventory. Creates and reviews procedures for distribution and inventory management to maximize customer satisfaction and minimize cost. Has knowledge of commonly-used concepts, practices, and procedures within a particular field. Relies on instructions and pre-established guidelines to perform the functions of the job. Works under immediate supervision. Primary job functions do not typically require exercising independent judgment. Typically

Position Name	Job Description Guidelines
	reports to a supervisor or manager. May require a high school diploma or its equivalent or 0-2 years of related experience.
Logistics Specialist II	Performs purchasing, shipping, stocking, receiving, issuing, inventory of materials. Evaluates vendor quotes and services to determine most desirable suppliers. Enhances product workflow by analyzing and developing logistics plans that affect production, distribution, and inventory. Creates and reviews procedures for distribution and inventory management to maximize customer satisfaction and minimize cost. May require an associate's degree or equivalent or 2-4 years of experience in the field or in a related area. Familiar with standard concepts, practices, and procedures within a particular field. Relies on limited experience and judgment to plan and accomplish goals. Performs a variety of tasks. Works under general supervision; typically reports to a supervisor or manager. A certain degree of creativity and latitude is required.
Logistics Specialist III	Performs purchasing, shipping, stocking, receiving, issuing, inventory of materials. Evaluates vendor quotes and services to determine most desirable suppliers. Enhances product workflow by analyzing and developing logistics plans that affect production, distribution, and inventory. Creates and reviews procedures for distribution and inventory management to maximize customer satisfaction and minimize cost. May require an associate's degree or equivalent or 4-6 years of experience in the field or in a related area. Familiar with a variety of the field's concepts, practices, and procedures. Relies on experience and judgment to plan and accomplish goals. Performs a variety of complicated tasks. May report to an executive or a manager. A wide degree of creativity and latitude is expected.
Logistics Specialist IV	Performs purchasing, shipping, stocking, receiving, issuing, inventory of materials. Evaluates vendor quotes and services to determine most desirable suppliers. Enhances product workflow by analyzing and developing logistics plans that affect production, distribution, and inventory. Creates and reviews procedures for distribution and inventory management to maximize customer satisfaction and minimize cost. May require an associate's degree or its equivalent or 6-8 years of experience in the field or in a related area. Familiar with a variety of the field's concepts, practices, and procedures. Relies on extensive experience and judgment to plan and accomplish goals. Performs a variety of tasks. Leads and directs the work of others. A wide degree of creativity and latitude is expected. May report to an executive or a manager.
NAMIS Application Administrator	Responsible for all aspects of NAMIS administration and ensuring compliance with NAMIS requirements and inputs/outputs. Must be familiar with the NAMIS system or military/industry equivalent. Shall have related experience in maintaining a master technical library comprised of aircraft manufacturers, Federal Aviation, Department of Defense, and NASA library technical publications, forms, and other related technical documentation that is supplemented by unique Aircraft Office change processes and procedures to support a wide-variety of aircraft and ancillary equipment. May require an Associate's Degree or equivalent or 4-7 years of experience in the field or in a related area.
Pilot (PIC)	Flight operations duty position. Maintain proficiency, currency, and annual requirements required by NASA per 830-FOM-0001 Flight Operations Manual.

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Position Name	Job Description Guidelines
Pilot (SIC)	Flight operations duty position. Maintain proficiency, currency, and annual requirements required by NASA per 830-FOM-0001 Flight Operations Manual.
Program Manager I	Manages all functions of the Aircraft Maintenance Operations Support contract. The Contract Maintenance Project Manager shall be the point of contact for NASA. Qualifications for this position shall be a minimum of 5 years in the aviation field in a management position. Individual shall have experience leading a diversified team in an aerospace environment, possess strong interpersonal and team building skills, with a proven ability to attract, hire and motivate a strong team. Excellent written and verbal communications skills. Individual shall hold a BS degree in an aviation related or management discipline or equivalent military experience.
Program Manager II	Manages all functions of the Aircraft Maintenance Operations Support contract. The Contract Maintenance Manager shall be the point of contact for NASA. Qualifications for this position shall be a minimum of 8 years in the aviation field in a management position. Individual shall have experience leading a diversified team in an aerospace environment, possess strong interpersonal and team building skills, with a proven ability to attract, hire and motivate a strong management team. Excellent written and verbal communications skills. Individual shall hold a BS degree in an aviation related or management discipline.
Program Manager III	Manages all functions of the Aircraft Maintenance Operations Support contract. The Contract Maintenance Manager shall be the point of contact for NASA. Qualifications for this position shall be a minimum of 10 years in the aviation field in a management position. Individual shall have experience leading a diversified team in an aerospace environment, possess strong interpersonal and team building skills, with a proven ability to attract, hire and motivate a strong management team. Excellent written and verbal communications skills. Individual shall hold a BS degree in an aviation related or management discipline.
Project Manager I	Responsible for the coordination and completion of projects. Oversees all aspects of projects. Sets deadlines, assigns responsibilities, and monitors and summarizes progress of project. Prepares reports for upper management regarding status of project. May require a BS degree and 2-4 years of experience in the field or in a related area. Familiar with a variety of the field's concepts, practices, and procedures. Relies on limited experience and judgment to plan and accomplish goals. Performs a variety of tasks. Leads and directs the work of others. A wide degree of creativity and latitude is expected. Typically reports to a manager or head of a unit/department.
Project Manager II	Responsible for the coordination and completion of projects. Oversees all aspects of projects. Sets deadlines, assigns responsibilities, and monitors and summarizes progress of project. Prepares reports for upper management regarding status of project. May require a BS degree and 4-7 years of experience in the field or in a related area. Familiar with a variety of the field's concepts, practices, and procedures. Relies on extensive experience and judgment to plan and accomplish goals. Performs a variety of tasks. Leads and directs the work of others. A wide degree of creativity and latitude is expected. Typically reports to a manager or head of a

Position Name	Job Description Guidelines
	unit/department.
Project Manager III	Responsible for the coordination and completion of projects. Oversees all aspects of projects. Sets deadlines, assigns responsibilities, and monitors and summarizes progress of project. Prepares reports for upper management regarding status of project. May require a BS degree and at least 5-7 years of experience in the field or in a related area. Familiar with a variety of the field's concepts, practices, and procedures. Relies on extensive experience and judgment to plan and accomplish goals. Performs a variety of tasks. Leads and directs the work of others. A wide degree of creativity and latitude is expected. Must have demonstrated experience managing projects. Strong interpersonal and team building skills. Excellent written and verbal communication skills. Proven track record of completing projects on schedule, within budget, with satisfied customers. Typically reports to a manager or head of a unit/department.
Quality Manager	Provides management of all quality functions of the Aircraft Maintenance Operations Support contract. Must have demonstrated experience managing a diversified team. Strong interpersonal and team building skills. Excellent written and verbal communication skills. Proven track record of completing projects on schedule, within budget, with satisfied customers. May require a BS degree and at least 5-7 years of experience in the field or in a related area
Quality Assurance Representative (QAR)	Shall have a minimum of three years' experience on airframes, avionics, electrical, egress, aviator's life support equipment of NDI, coupled with familiarity with the tools, concepts and methodologies of quality management. Have knowledge of Aerospace Standard SAE AS9110 and be able to conduct audits, surveillance and monitoring to assess compliance with stated requirements. Have experience in root cause analysis and corrective/preventative actions and be able to develop and initiate corrective action plans while ensuring focus on organizational continuous improvement.
Scheduler/Dispatcher	Coordinate with flight crew and maintenance to plan and aircraft flight schedules and support flight operations. May require an associate's degree or equivalent or 2-3 years of experience in the field or in a related area.
Sensor Equipment Operator	Provide ground and in-flight support of sensor equipment used on aircraft. Responsible for maintaining and operating assigned equipment. May require a BS degree or equivalent or 3-4 years of experience in the field or in a related area. Shall maintain qualification as a qualified non-crewmember when assigned to manned aircraft.
Technical Editor I	Plans, coordinates, and edits content of material for publication. May review proposals and drafts for possible publication. Proficient with Microsoft Word and Adobe Acrobat. Organizational, coordination, and customer service skills. Typically requires a high school diploma or its equivalent. Typically requires 0-2 years of work experience.
Technical Editor II	Plans, coordinates, and edits content of material for publication. May review proposals and drafts for possible publication. May possess advanced degree. Technical writing and editing expertise. Proficient with Microsoft Word, Excel, PowerPoint, and Adobe Acrobat. Excellent organizational, coordination, and customer service skills. Typically requires an Associate's Degree and 5 years of experience.
Technical Writer	Develops, writes, and edits technical materials, such as equipment

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	manuals instruction books, and related technical publications to include operating and maintenance instructions. The writer interprets blueprints, sketches, parts lists, specifications, mockups and product samples to integrate and delineate technology, operating, and production procedures in accordance with established standards. Possess technical writing skills, organizational, coordination and customer service skills, and knowledge of Microsoft Word and Excel. Typically requires an Associate's Degree and 5 years of experience.
Training Specialist I	Designs and conducts company training programs. Monitors and reports the effectiveness of training on employees during the orientation period and for career development. May be involved in initial plan design and existing plan enhancements. Requires a BS degree in a related area and 0-2 years of experience in the field or in a related area. Has knowledge of commonly-used concepts, practices, and procedures within a particular field. Relies on instructions and pre-established guidelines to perform the functions of the job. Works under immediate supervision. Primary job functions do not typically require exercising independent judgment. Typically reports to a manager.
Training Specialist II	Designs and conducts company training programs. Monitors and reports the effectiveness of training on employees during the orientation period and for career development. Involved in initial plan design and existing plan enhancements. Requires a BS degree in a related area and 2-5 years of experience in the field or in a related area. Familiar with standard concepts, practices and procedures within a particular field. Relies on experience and judgment to plan and accomplish goals. Performs a variety of tasks. Works under general supervision. A certain degree of creativity and latitude is required. Typically reports to a manager.
Training Specialist III	Designs and conducts company training programs. Monitors and reports the effectiveness of training on employees during the orientation period and for career development. May be involved in initial plan design and existing plan enhancements. Requires a BS degree in a related area and 5-8 years of experience in the field or in a related area. Familiar with a variety of the field's concepts, practices, and procedures. Relies on experience and judgment to plan and accomplish goals. Performs a variety of complicated tasks. May lead and direct the work of others. May report directly to an executive or head of a unit/department. A wide degree of creativity and latitude is expected.