

**Performance Work Statement
(PWS)**

for

**MSFC Information Technology Services
(MITS)**

This Draft Performance Work Statement (PWS) replaces the version posted on April 2, 2014, in its entirety. Changes of note are as follows:

- 1. PWS 4.3.5 entitled “Document Repository Operations” is added.**
- 2. PWS 4.3.6 entitled “Customer Unique IT Support Services” is added.**

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1. GENERAL

The Marshall Space Flight Center (MSFC), located in Huntsville, Alabama, is a field center of the National Aeronautics and Space Administration (NASA). The Center resides within the boundaries of the United States Army's Redstone Arsenal and employs approximately 6,000 NASA civil servants and contractors who perform various duties across the MSFC, the National Space Science and Technology Center (NSSTC) and Michoud Assembly Facility (MAF) campuses. The MSFC Information Technology Services (MITS) contract serves as primary critical provider of information technology services at these locations.

1.1 MISSION STATEMENT

NASA's mission is to pioneer the future in space exploration, scientific discovery and aeronautics research. NASA conducts its work in four principle organizations, called mission directorates:

- Aeronautics: Enabling a safer, more secure, efficient, and environmentally friendly air transportation system.
- Human Exploration and Operations: Operating the International Space Station and preparing for human exploration beyond low Earth orbit.
- Science: Exploring the Earth-Sun system, our own solar system and the universe beyond.
- Space Technology: Developing the crosscutting, advanced and pioneering new technologies needed for current and future missions, benefiting the aerospace industry and other agencies, and addressing national needs.

NASA Headquarters, in Washington, D.C., provides overall guidance and direction to the Agency, under the leadership of the NASA Administrator. Ten field centers and a variety of installations conduct the day-to-day work in laboratories, on airfields, in wind tunnels and in control rooms. The Centers (e.g., MSFC), in coordination with NASA Headquarters, determine how the mission directorate programs will be implemented, and execute Agency-wide programs as they are assigned. The nature of NASA's program implementation model requires cross-Center collaboration for the execution of the mission directorate programs. NASA requires a seamless technical infrastructure to ensure interoperability within programs and across Centers.

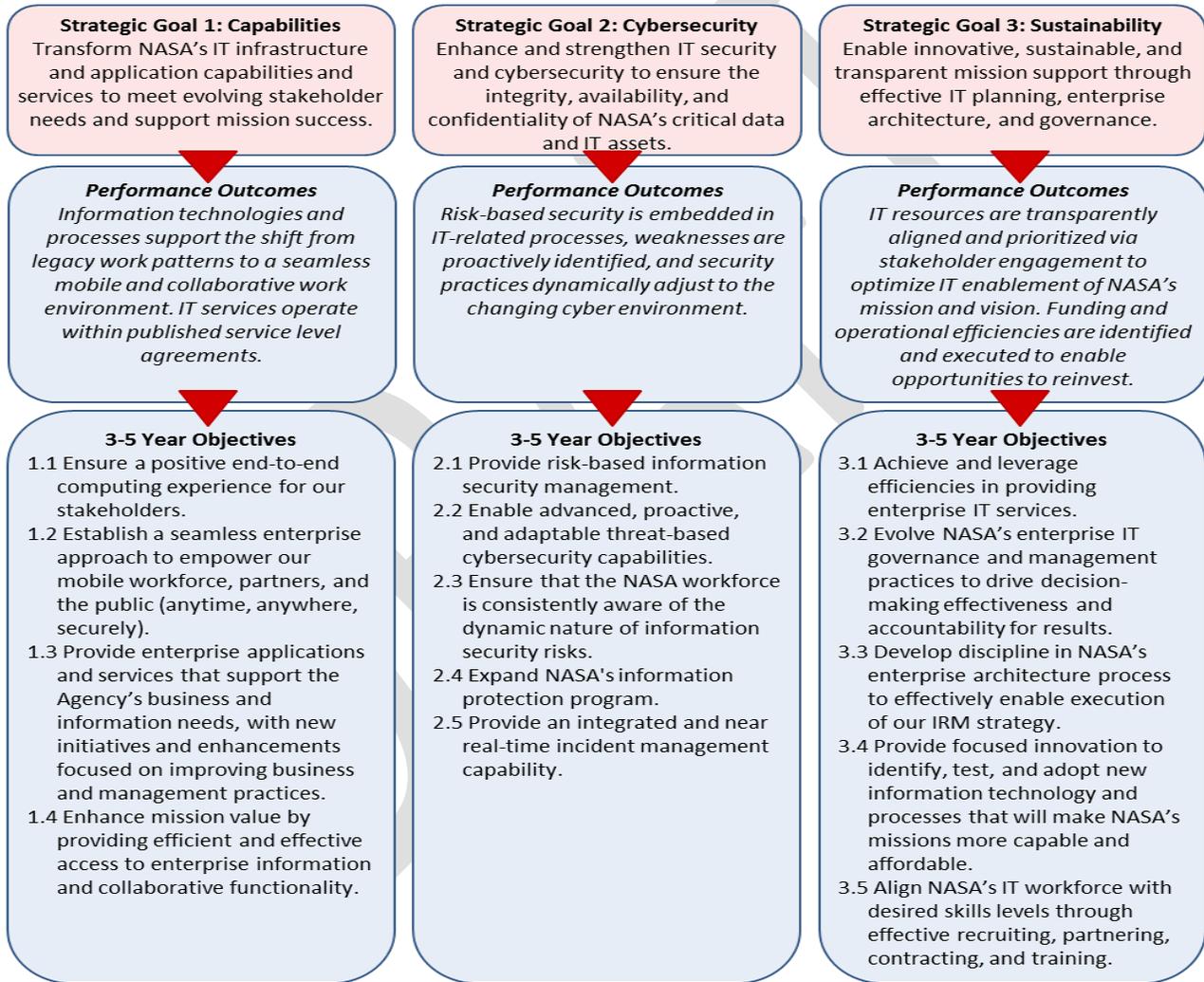
Agency-wide NASA corporate initiatives (e.g., Human Exploration) and resulting MSFC-hosted programs (e.g., Space Launch System) are the primary drivers that define MSFC's IT requirements. MSFC-hosted programs range from self-contained, mature operations requiring basic commodity support to new, increasingly complex startup programs requiring collaborative engineering environments across NASA Centers and beyond. Additionally, MSFC Office of the Chief Information Officer (OCIO) customers include, but are not limited to, managers, engineers, scientists, operators, business and facilities personnel. The Agency's business model is transitioning from one based on autonomous Centers to a more tightly coupled organization with business processes executed across Center and organizational boundaries. NASA is aligning all support services to mission programs (e.g., shared infrastructure services model) and will need to drive cost savings through consolidated support services and other opportunities for increased efficiencies.

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1.2 GOALS, PERFORMANCE OUTCOMES AND OBJECTIVES

As part of the section 3506(b)(2) of title 44 of the United States Code and the Clinger-Cohen Act of 1996, the Office of the Chief Information Officer is directed to develop and maintain a strategic information resources management (IRM) plan. The purpose of NASA’s IRM Strategic Plan is to guide the direction, focus, mission alignment, principles, investments, and accountability of the NASA Information Technology organization and to maximize the value of IT to NASA’s programs, partners, stakeholders and the American public.

More specifically, the OCIO’s IRM Strategic Plan has established the following goals, performance outcomes, and objectives:



To enable the strategic goals, performance outcomes, and objectives stated above, MSFC’s IT service providers must function as IT partners with OCIO customers who are increasingly recognizing the criticality and value of IT to their programs. As a Center support organization, the MSFC OCIO is constantly challenged to provide existing services more efficiently. Therefore, the OCIO is looking for an IT service provider contract partner who possesses the following requisite capabilities:

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- Highly motivated and cross-trained personnel that constitute a small, agile team capable of maximizing workforce efficiencies
- Innovative approaches to information technology assessment and infusion/adoption
- Process improvement efficiencies and ideas that create quicker and possibly cheaper ways of performing tasks
- A willingness for and ease of working across contractual lines/barriers to create optimal solutions for the OCIO IT customers

The MSFC OCIO desires partnerships with IT contractors that will provide a suite of IT services in accordance with established standards and metrics while minimizing costs. It is also the desire of the OCIO to use any cost and schedule efficiencies to enable future investments in MSFC's IT infrastructure that support critical Agency and Center missions.

1.3 RESPONSIBILITIES

1.3.1 Government Responsibilities

The OCIO is the principle MSFC organization responsible for all MSFC IT related functions, including the development of Center IT strategies, IT architecture, IT investment management and tracking, and IT customer relationship management. The OCIO utilizes a process-oriented methodology of governance to effectively manage the acquisition, provisioning, use, and oversight of IT resources.

The Government will retain a set of key authorities that encompass the overall strategy and design related to IT service delivery. The roles and responsibilities described below are MSFC OCIO-specific retained authorities:

IT Security Services

The Government will also retain the authority for the overall guidance and approval of the IT security architecture. This architecture will be designed, engineered and developed through collaboration between the Government and Contractor. The Government will retain overall authority for maintaining an integrated strategic roadmap for evolving the architecture while maintaining appropriate security levels.

Center Information Security Officer (CISO)

The Government, through the Center Information Security Officer (CISO), will retain authority for the oversight of MSFC's information security operations, governance, architecture, and engineering to ensure all personnel, information, and information systems that are resident at MSFC, managed from MSFC or associate with a contract, grant, purchase order, or cooperative agreement managed at MSFC are compliant with federal and NASA information security requirements.

Assessment and Authorizing Official (AAO)

The Government, through the MSFC Assessment and Authorizing Official (AAO), will retain authority for implementing and maintaining the Information System Security Assessment (ISSA) program at MSFC with support from the Risk Management Team.

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Incident Response Manager (IRM)

The Government, through the Incident Response Manager (IRM), will retain authority for the oversight of incident response policies, procedures, investigations, and reporting of Center incidents.

IT Policy

The Government will retain authority for defining and documenting policies, procedures, processes, standards, and guidelines related to IT investments throughout the IT investment lifecycle. Applicable policies, procedures, standards, and guidelines include the management, use, availability, accessibility, integrity, privacy, disclosure, and preservation and disposal of records, information and information systems.

IT Governance

The Government will retain authority for defining, overseeing and executing all aspects of the MSFC IT Governance process to ensure that IT strategy, investment planning, implementation, and operations decisions are integrated with Planning, Programming, Budgeting, and Execution (PPBE) decisions and processes. This involves, but is not limited to, coordination with the stakeholders, scheduling of the governance boards, and approving items for presentation at these boards. All decision authority at each IT governing board/body rests solely with the Government.

IT Strategy

The Government will retain authority for defining and managing the overall IT Strategy at the MSFC. This authority covers the work under this contract and its intersection/relationship with other center and Agency IT contracts (e.g., NASA Integrated Communications Services (NICS), Agency Consolidated End-user Services (ACES), and Enterprise Applications Service Technologies (EAST)). The Government will retain authority for developing and maintaining information resource management plans, standards, models, and guidance that define current IT environment, future environment, and transition plans.

MSFC Directives Manager

The Government retains authority for assignment of the MSFC Directives Manager and for developing and managing the overall directives management policy, processes, and functions for MSFC.

MSFC Records Manager

The Government retains authority for assignment of the MSFC Records Manager and for developing and managing overall records management policy, processes, and functions for MSFC.

MSFC Forms Manager

The Government retains authority for assignment of the MSFC Forms Manager Position and for developing and managing overall forms management policy, processes, and functions for MSFC.

MSFC Scientific and Technical Publications Manager

The Government retains authority for assignment of the MSFC Scientific and Technical Publications Manager and for developing and managing overall STI policy, processes and functions for MSFC.

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Management of the MITS contract will be carried out by the Contracting Officer (CO) and Contracting Officer's Representative (COR). In support of the COR's responsibilities, Technical Monitors (TMs) may be appointed to provide contract oversight where required.

1.3.2 Contractor Responsibilities

The MITS PWS describes the full range of services required for the Contractor to fulfill the mission requirements for the Program Management, IT Security Services, IT Planning, Policy, and Service Integration & Delivery, IT Infrastructure Services, and Audio Visual Information Services areas. It is expected that the Contractor will comply with the regulations, procedures, and agreements as defined in Attachment J-8, *Applicable Regulations and Procedures* in delivery of these services.

In addition to the services provided within the scope of the MITS contract, the Contractor will be required to work in a collaborative manner with other Center and Agency IT service providers in order to insure that all OCIO products and services are delivered in the most productive and efficient manner possible. These collaborations /interfaces will be defined in Operating Agreements, Memorandums of Understanding (MOU), Memorandums of Agreement (MOA), Interface Control Documents (ICD), NASA policies, Associate Contractor Agreements (ACA), and other written agreements.

The Contractor is designated "Systems Manager" for OCIO managed systems and responsibilities to include long-range planning, requirements definition, alternative analysis, design, acquisition or development, integration, testing, implementation, operations, maintenance, and administration of both hardware and system software.

In performing the requirements of this contract, the Contractor clearly and consistently characterizes the various services as separate and distinct. This characterization is essential in delineating the different funding and approval procedures associated with each service, and in ensuring accuracy of cost reporting in accordance with the *Work Breakdown Structure (WBS)*, prepared in accordance with DRD 1497MA-004.

The Contractor reports and documents this work and fulfills the requirements of associated Data Requirement Descriptions (DRDs) as outlined in *Data Procurement Document (DPD) 1497* (Attachment J-2). The Contractor determines the data restriction that applies to each data deliverable and marks or transmits the data restriction in accordance with section 2.3.3 of the DPD.

The Contractor complies with the latest version of all documents delineated within this PWS.

The Contractor's obligation may include resolution of unusual or emergency situations. The Contractor may be required to assist NASA, within the general scope of work, but in currently unidentified ways, in preparation for, or in response to emergencies. Obligations under this requirement shall only arise when one or more of the criteria at FAR 18.001, enabling NASA to utilize "Emergency Acquisition Flexibilities", are met. If the emergency preparedness and response requirements result in changes to the contract, all contract adjustments will be processed in accordance with the *Changes* clause of this contract.

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2. PROGRAM MANAGEMENT

The Contractor shall provide all resources necessary to accomplish the mission defined in this PWS. The Contractor shall provide project management, financial management, contract administration, procurement, property management, security, safety, facilities management, quality management, continuity of operations plan (COOP) and disaster recovery (DR) plan, customer service requests, and phase-out to accomplish the mission. The Contractor shall provide, implement, and maintain the requisite organization, employee value system, disciplines, and systems necessary to manage the resources required for performance of these functions. In performance of program management functions, the Contractor shall:

- a. Ensure the implementation of management practices to proactively pursue innovation and technology advancement to enhance customer satisfaction and service delivery.
- b. Ensure the implementation of effective engineering, business management, and other quality practices to deliver the services in an efficient and integrated manner, and at a sustained high level of success.
- c. Implement practices to ensure effective communication of management, technical, quality, costs, and customer satisfaction issues that may arise in the performance of this contract.
- d. Prepare, implement, and maintain the MITS *Management Plan* in accordance with DRD 1497MA-001. The plan shall provide a strategy blueprint for the next year as well as implementing guidance for realizing the stated goals and objectives of the OCIO.
- e. Implement and maintain a process to collect MSFC-wide IT systems/services information to support the IT integration function of the OCIO.
- f. Support the execution of the Center's established IT governance model, processes, and policies to ensure well-informed strategy, policy, architecture, standards, and investment decisions.
- g. Provide training for the Contractor's personnel to perform the services and functions described in this PWS.
- h. Provide technical information concerning any invention, discovery, improvement, or innovation made by the Contractor in the performance of work under this PWS. *Technology Reports* shall be prepared and submitted in accordance with DRD 1497CD-001.
- i. Provide systems, applications, and products associated with the following six covered Electronic and Information Technology Accessibility product groups as applicable. All systems, applications, and products associated with these groups shall comply with the applicable standards contained with the Federal Acquisition Circular 97-27, Electronic and Information Technology (EIT) Accessibility, Section 508 of the Rehabilitation Act of 1973 by implementing the applicable Technical Standards (Subpart B) including:
 - Software Applications and Operating Systems (1194.21)
 - Web-based Intranet and Internet Information and Applications (1194.22)
 - Telecommunications Products (1194.23)
 - Video or Multimedia Products (1194.24)
 - Self-Contained Closed Products (1194.25)
 - Desktop and Portable Computers (1194.26)

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2.1 PROJECT MANAGEMENT

The Contractor shall provide cost, schedule, risk, and technical management of all MITS services, functions, and tasks in accordance with NASA Interim Directive (NID) 7120.99, *NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements*, until such time as NASA Procedural Requirements (NPR) 7120.7, same title, is approved and serves to govern this function. In performance of these functions, the Contractor shall: Prepare and submit monthly reports of project plans, status, resources and schedules in accordance with DRD 1497MA-007, *Reports*.

- a. Prepare and conduct monthly program management reviews including presentation and discussion of program priorities, project statuses, significant accomplishments, risk management, and problem areas.
- b. Track official communications with the COR such as technical direction, requests for information, and transmittals, and provide status concerning all such communications in accordance with DRD 1497MA-007.
- c. Track monthly export control activities and prepare and submit the *Export Control Plan and Reports* in accordance with DRD 1497MA-006.

2.2 FINANCIAL MANAGEMENT

The Contractor shall plan, track, accumulate, and report contract costs and provide other financial support required to meet the budgeting, cost reporting, billing, and disclosure requirements of the contract. In performance of this function, the Contractor shall:

- a. Maintain and utilize the current cost functions of the Management Information Control System (MICS).
- b. Prepare and submit *Cost Reports* in accordance with DRD 1497MA-009.
- c. Prepare and submit the *Financial Management Report (533M)* in accordance with DRD 1497MA-008.
- d. Provide input data to the NASA PPBE process. This data shall incorporate annual requirements projections in the form of Spend plans that match the PPBE horizon of the next Execution Year plus 5 years as Budget Year (BY), BY+1, BY+2, BY+3 and BY+4.
- e. Uniquely identify each Capital Asset acquired by its unique WBS on the NASA Form (NF) 533M submittal in accordance with NASA Policy Directive (NPD) 9250.1, *Capital Asset Identification and Treatment*.

2.3 CONTRACT ADMINISTRATION

In performance of contract administration functions, the Contractor shall:

- a. Provide a single point of contact (POC) with contractual obligation authority for all contract administration functions and activities required in performance of this contract. This point of contact shall have access to all contract administration data and information related to performance of this contract.
- b. Submit contract administration information and data deliverables to the MSFC electronic documentation repository or as further directed by the Contracting Officer.
- c. Provide labor data including contract totals by department, location, and WBS elements in accordance with DRD 1497MA-007.

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- d. Generate, edit, merge, maintain, and distribute documentation related to the performance of this contract in accordance with DRD 1497MA-002, *Documentation*, including electronic documentation.
- e. Maintain an initial set of documentation and drawings that was generated under previous contracts related to the work described in this PWS in accordance with DRD 1497MA-002.
- f. Prepare and maintain a *Documentation Tree* that categorizes, lists, and describes all such documentation in accordance with DRD 1497MA-002.
- g. Prepare and submit documents for OCIO-sponsored user meetings and committees, and provide support for follow-up documentation for these meetings.
- h. Prepare and submit an *On-Site Employee Location Listing* in accordance with DRD 1497CD-002. This list is required to provide the Contracting Officer with the current information on each on-site employee on the contract and enables verification of audit records.
- i. Prepare and submit an *Organizational Conflict of Interest (OCI) Plan* in accordance with DRD 1497MA-011.

2.4 PROCUREMENT

In performance of contract procurement functions, the Contractor shall:

- a. Utilize the Government-provided procurement information and document generation system (i.e., MICS) in accordance with DRD 1497MA-007.
- b. Provide, implement, and maintain procurement controls including Contractor policies and procedures governing standards of conduct, procurement processes and practices, and prevention of waste, fraud, and mismanagement.
- c. Provide all supplies, materials, and services (not otherwise furnished by the Government) required to perform the services and functions specified in the PWS and to accomplish the MITS mission.
- d. Provide replacement and spare parts or equipment, temporary labor services, vendor maintenance agreements, software subscription services, hardware engineering changes or updates, IT-related supplies and special general-purpose software packages necessary to perform the operations and maintenance functions of this contract.
- e. Provide hardware upgrades; systems and applications software licenses, renewals, and enhancements; services and maintenance, including utilizing Agency-wide or Government-wide contracts or site software license agreements, for the systems for which the Contractor is designated Systems Manager.
- f. Provide IT equipment and software necessary to fulfill MSFC requirements, within the guidance of the Federal Acquisition Regulation (FAR), including utilizing Government-wide (e.g., Solutions for Enterprise-Wide Procurements (SEWP)) and NASA/MSFC contracts or site software license agreements.

2.5 PROPERTY MANAGEMENT

The Contractor shall implement and maintain a Property Management System in accordance with NASA policies and guidelines. In performance of this function, the Contractor shall:

- a. Prepare and submit a *Government Property Management Plan* in accordance with DRD 1497LS-001 for all Government property for which the Contractor has been furnished or has acquired.

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- b. Perform user responsibilities for the Installation-Accountable Government Property (IAGP) assigned to this contract. Maintain accountability for the record keeping, physical inventory, financial control and reporting of Government property that does not meet IAGP control thresholds.
- c. Maintain responsibility for reimbursable shipment of property as required to support service delivery.

2.6 SECURITY

The Contractor shall ensure that the management of NASA Information Technology (IT) under this contract conforms to all applicable Federal laws, and NASA and Center IT requirements, regulations, policies, and guidelines as defined in relevant Federal and NASA documents. These requirements, regulations, policies, and guidelines are identified in Attachment J-8, *Applicable Regulations and Procedures*. The requirements apply to all IT resources that process, manage, access, or store NASA data. IT resources means any hardware or software or interconnected system or subsystem of equipment, that is used to process, manage, access, or store electronic information. NASA data is any data and information, except for limited rights data or restricted software, which is produced or specifically used in the performance of this contract. In performance of these functions, the Contractor shall:

- a. Protect the confidentiality, integrity, and availability of NASA data and IT resources.
- b. Include an IT Security section in the MITS Management Plan (DRD 1497MA-001) that includes how they will develop, implement, and maintain IT Security. This section shall describe the processes and procedures that will be followed to ensure appropriate security of IT resources that are developed, processed, or used under this contract.
- c. Identify an IT Security Point-of-Contact (POC) for supporting IT security requirements under this contract.
- d. Obtain approval from the MSFC Chief Information Security Officer (CISO) prior to deployment of any IT security services.
- e. Follow NASA security incident management procedures and policies, and ensure coordination of its incident response team with the NASA Security Operations Center (SOC). The Contractor shall promptly report to the NASA SOC any suspected computer or network security incidents occurring on any systems the Contractor provides or for which they have operational responsibility. The Contractor shall provide all necessary assistance and access to the affected systems so that a thorough investigation can be conducted, problems remedied, and lessons learned documented. Security logs and audit information shall be handled according to evidence preservation procedures. The Contractor shall also:
 - (1) Make available logs from any information system to the NASA common logging environment, as requested by the NASA SOC. Electronic raw log data shall be forwarded from the source device to the NASA common logging environment in accordance with NASA policies, procedures and guidance.
 - (2) Provide the NASA SOC real-time, electronic access to all asset information and configuration management information for all devices provided under this contract and in support of this contract.
 - (3) Report the theft or loss of any device that may contain NASA information, in accordance with NASA incident reporting policy and procedures.

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2.7 SAFETY

In performance of contract safety functions, the Contractor shall:

- a. Establish and implement an industrial safety, occupational health, and environmental program that provides a workplace free of recognized hazardous conditions, incidents, and injuries by: 1) preventing employee fatalities; 2) reducing the number and severity of employee injuries and illnesses; and, 3) protecting the environment through the ongoing planning, implementation, integration and management control of these programs.
- b. Prepare and submit an *On-Site Safety, Health and Environmental (SHE) Plan* in accordance with DRD 1497SA-001.
- c. Prepare and submit *On-Site Mishap and Safety Statistics Reports* in accordance with DRD 1497SA-002. The Contractor shall submit directly to the NASA Incident Reporting Information System (IRIS) or shall use the forms listed in section 15.4 of DRD 1497SA-002 or electronic equivalent to report mishaps and related information required to produce the safety metrics.
- d. Prepare and submit the *Environmental Compliance Reports* that include the *Annual Green Purchasing Report, Waste Reduction Activity Report, Ozone Depleting Substances (ODS) Notification, and Equipment Notifications* in accordance with DRD 1497EE-001.

2.8 FACILITIES MANAGEMENT

The Contractor shall implement and maintain a uniform approach for managing the use of assigned facilities in accordance with DRD 1497MA-002. In performance of this function, the Contractor shall:

- a. Maintain documentation as a basis for requesting and recommending additional space and reallocation of assigned space or interior partitions.
- b. Maintain continuous records of changes or movements of personnel, providing this information on-line for COR designated personnel review.
- c. Plan for future facility requirements or expected changes in personnel and equipment locations. Support facility modifications to accommodate personnel space change requirements and new equipment at specified locations, scheduling this activity to minimize disruption of daily operations.
- d. Obtain approval from the cognizant NASA Facilities Offices before performing any facilities activities (e.g., equipment installation) at a NASA installation.
- e. Track the schedule and status information for facilities work requests and facilities projects that affect IT service delivery.
- f. Define and document environmental requirements to accommodate equipment.
- g. Develop and maintain memoranda of agreement between MSFC and host center/facilities to document requirements to house MITS systems and personnel.

2.9 QUALITY MANAGEMENT

The Contractor shall implement and maintain a quality system sufficient to ensure the consistent delivery of services required by this PWS as well as Federal, Agency, and Center policies and procedures.

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2.10 CONTINUITY OF OPERATIONS PLAN (COOP) AND DISASTER RECOVERY (DR) PLAN

The Contractor shall develop, maintain, and test service continuity, contingency, and disaster recovery plans for all systems for which they are responsible. In providing these services, the Contractor shall:

- a. Prepare and submit a *Continuity of Operations Plan* and a *Disaster Recovery Plan* in accordance with DRD 1497MA-002 to ensure the orderly recovery from a disaster that may render all or part of information facilities, systems, and equipment inoperable. This plan shall be prepared in accordance with NPR 1040.1, *NASA Continuity of Operations (COOP) Planning Procedural Requirements*.
- b. Coordinate with information systems and disaster recovery experts across MSFC and NASA to verify integration of procedures and planning techniques.
- c. Execute effective measures to protect all systems, equipment and data for which the Contractor is responsible from potential environmental threats.
- d. Ensure that systems and equipment for which the Contractor is responsible are operational and restore any lost capabilities and data after the occurrence of a disaster.

2.11 CUSTOMER SERVICE REQUESTS

The Contractor shall receive, process, and execute customer service requests. In performance of this function, the Contractor shall:

- a. Utilize the Government-provided on-line service request system for ordering, assigning, tracking, statusing, and archiving customer service requests in accordance with DRD 1497MA-007.
- b. Implement authorized service requests.
- c. Provide the necessary coordination between the customer, OCIO resource team for funding verification, and the technical support functions required to satisfy the request.
- d. Provide monthly reports in accordance with DRD 1497MA-007 to COR-designated personnel that explain status of service requests.
- e. Close each service request after customer notification and acceptance.

2.12 PHASE-OUT

The Contractor shall support the succeeding Contractor during the MITS contract phase-out period. This support includes the transition of all management and technical services to the successor Contractor while minimizing operational impacts. The Contractor shall also provide historical data and workload indicators as requested by the CO to facilitate preparation of the follow-on solicitation.

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3. INFORMATION TECHNOLOGY (IT) SECURITY SERVICES

The Contractor shall provide IT Security services for MSFC-managed unclassified resources, which includes the National Space Science Technology Center (NSSTC), the Michoud Assembly Facility (MAF), and MSFC managed contracts. The Contractor shall provide IT Security risk management, and intrusion detection and incident response for all applicable IT systems under the responsibility of the MSFC CIO in accordance with the latest NASA, National Institute of Standards and Technology (NIST) and Federal Information Security Management Act (FISMA) requirements. NASA encourages innovation and welcomes new approaches to solve IT Security problems performed in collaboration with the CISO. Some personnel supporting IT Security Services will be required to maintain a secret clearance (see Attachment J-9), DD Form 254, *Contract Security Classification and Specification*.

3.1 IT SECURITY RISK MANAGEMENT

In collaboration with the Government, the Contractor shall coordinate the design and implementation of practices that assess and quantify risk. In providing these services, the Contractor shall:

- a. Provide support for security planning, risk mitigation, and information protection as required by NASA Policy on NASA systems.
- b. Provide engineering support for all IT Security activities being provided at MSFC and MSFC supported facilities.
- c. Perform the role of Security Control Assessor as defined in NIST SP 800-37 for MSFC managed systems and applications. Tasks include developing the security assessment plan, performing the assessment, issuing a security assessment report, and performing ongoing assessments.
- d. Perform security impact analysis for system change requests including firewall rule changes.
- e. Synchronize any Assessment and Authorization data between local Center systems and that which is required for reporting in Agency Assessment and Authorization systems.
- f. Perform system penetration testing for specific systems under the responsibility of the MSFC CIO as directed by MSFC CISO, at least once annually. This includes:
 - 1) Using a certified lead
 - 2) Establishing a signed Rules of Engagement prior to any activities
 - 3) Prior communication with appropriate parties such as the MSFC Incident Response Team (MIRT)
 - 4) Coordinating with Agency officials and penetration testers, as appropriate
 - 5) Final report to include details of findings (capturing the associated risks) and recommendations
- g. Support 3rd party IT security audits and track the findings which will be used to improve the overall security of NASA systems and network.
- h. Support MSFC activities conducted to provide continuous diagnostics and mitigation across MSFC IT assets.
- i. Conduct weekly discovery, monthly non-credential, and quarterly credential scans of the systems managed by OCIO and coordinate with the systems administrators to resolve the identified vulnerabilities in accordance with NASA policies, procedures, and requirements.
- j. Compile vulnerability and patch status metrics for all MSFC IT systems determined to be in-scope by the MSFC CISO per requirements defined by NASA policies and procedures, as well

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as any metrics that are necessary to indicate compliance or the lack of compliance of the Center's IT security program.

- k. Conduct analysis of the vulnerability scan data and patch management data produced from Government-provided tools. Analysis shall include current status charts/graphs, trending information, risk ranking of identified vulnerabilities, and complete, effective and resource-efficient mitigation strategies.
- l. Provide application administration for vulnerability and patch management tools defined by the Agency.
- m. Collaborate with Government, corporate, and academic IT security communities to affect a strong IT security posture by participating in tool evaluation, policy, and procedure reviews and user support.
- n. Provide technical and administrative support for Government-directed IT Security policy enforcement in the NASA Consolidated Active Directory (NCAD). This includes Group Policies (GPOs) for required desktop agents such as KACE installation, Intrusion Detection and Incident Response (ID/IR) access, and other policy necessary to ensure IT Security management at MSFC, NSSTC, and MAF.

3.2 INTRUSION DETECTION AND INCIDENT RESPONSE (ID/IR)

The Contractor shall provide intrusion detection and incident response for networks and systems managed by the OCIO for all the programs and projects located on the facilities at MSFC, NSSTC, and MAF. The Contractor shall:

- a. Deploy and utilize ID/IR tools, technical policies and procedures required by the Government in order to protect the MSFC systems and networks.
- b. Respond to systems anomalies suspected of viruses, Trojans, or other malware, and coordinate response with the system owners and service providers such as ACES.
- c. Provide IT Security related analysis of network traffic and system logs of systems suspected of an IT security incident, including the misuse of Government owned or leased systems.
- d. Conduct analysis of the IT Security threats or compromises and provide feedback to the potentially affected organizations as soon as possible per the guidance of the MSFC Incident Response Manager to ensure complete, effective and resource-efficient mitigation strategies.
- e. Provide an incident response (IR) lead position to support the Center Incident Response Manager (IRM) on all issues and functions related to IT Security incident response.
- f. The normal business day for the IR Team in support of Agency and local services is defined as a 5 day week, Monday through Friday (excluding holidays), 8 hours per day between 6 a.m. and 7 p.m.
- g. Provide 24 hours a day, 7 days a week, and 365 days a year "on-call" support in addition to IR support provided during business hours. This "on-call" after hours support is limited to incidents rated as 'HIGH' by the NASA SOC, as well as incidents that present a high-level of risk to Center or Agency network and computing resources, as determined by the Center CISO, Center Deputy CISO, Center IRM, or Center IR-Lead.
- h. Document all IT Security incidents per NASA SOC guidelines.
- i. Monitor and conduct 'Misuse of IT Resources' investigations in accordance with Center policy.
- j. Support data extraction requests as authorized by the NASA MSFC CISO or delegated civil servant.

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- k. Establish, modify, and monitor application rule sets for the MSFC-provided web proxies, flow monitoring tools, security event managers, network sniffer systems, and intrusion detection systems.
- l. Maintain software and hardware forensics capability, to include analysis of network traffic, Personal Computers (PCs), servers and mobile devices.
- m. Operate and maintain the ID/IR tools and applications (e.g., web proxies, flow monitoring tool, security event manager, sniffer, IR Storage Area Network (SAN), forensic lab applications, and intrusion detection systems) provided by the Government to detect and protect systems from unauthorized access, use, disclosure, destruction, modification, or disruption of services.
- n. Monitor and maintain policy for the MSFC provided proxy that is used as a content filter blocking access to inappropriate sites and protect the MSFC private network from zero-day exploit code as well as known exploits utilizing the http protocols.
- o. Maintain administrative or root access, as applicable, to all Center IR systems.
- p. Provide IT Security guidance, direction, and assistance to include current system issues, metrics and special reporting requirements to system administrators who support servers for various organizations with IT systems on the MSFC, NSSTC, and MAF networks.

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4. IT PLANNING, POLICY, AND SERVICE INTEGRATION AND DELIVERY

The Contractor shall provide services in the areas of innovation management , IT portfolio management, and service integration and delivery for directives management, records management, forms management, Scientific and Technical Information, and IT asset management services to ensure IT resources and functions/services are effectively planned, managed, and integrated with mission, program, and business needs.

4.1 INNOVATION MANAGEMENT**4.1.1 Innovation Management Service**

The Contactor shall implement and manage an effective open innovation management program that provides a consistent methodology for identifying candidate technologies that are architecturally compliant, insertion ready, and effectively managed for mission alignment, risk and cost. In support of this requirement, the Contractor shall:

- a. Implement an integrated approach to capture, evaluate, and track potential ideas and technology solutions in support of mission needs.
- b. Develop, document, maintain, communicate, and disseminate to MSFC the alignment of the Center's innovation management strategy and initiatives.
- c. Develop, implement, and maintain an integrated approach to identify, characterize, and validate candidate technologies for inclusion within the MSFC architecture.
- d. Evaluate and report on potential technologies and solutions to determine functionality, feasibility, and merit.
- e. Document innovations and maintain supporting data/metrics in a Government-provided collaborative and integrated web-based dashboard/repository.

4.1.2 IT Innovation Management

Using the Innovation Management Service provided under 4.1.1, the Contractor shall develop, conduct, and report targeted IT innovation campaigns on a semi-annual basis to identify and evaluate candidate opportunities to improve the IT processes, products, and services provided within each PWS area.

4.2 IT PORTFOLIO MANAGEMENT

The Contractor shall support the implementation of IT portfolio management processes to drive standardization and efficiency, as well as organize and manage IT investments.

4.2.1 IT Portfolio Management

The Contractor shall develop and maintain an IT portfolio management capability, consistent with MSFC's established IT governance model, per Marshall Policy Directive (MPD) 2800.1 *Management of Information Technology and Services at MSFC*, to enable the Center to strategically align IT investments, ensure performance against planned objectives, and trace to approved IT investment plans.

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4.2.2 IT Asset Management

The Contractor shall support the Government in designing, implementing and executing of IT asset management processes for MSFC. The Contractor shall:

- a. Develop, document and maintain IT asset management processes and procedures.
- b. Coordinate with the customers to ensure accuracy of the data, incorporation of all metadata necessary to track each asset and timeliness of initial capture and updates.
- c. Provide reports and analysis of MSFC's IT asset portfolio.

4.2.3 Special Business Case Development

The Contractor shall conduct and report the results of COR-directed special studies that include the development of special business cases, hypothetical investigations, benchmarks, standards, migration, pricing, and trade studies in accordance with DRD 1497MA-002. These services are considered within the scope of this PWS and shall not, in general, be construed as changes within the meaning of the *Changes -- Cost-Reimbursement -- Alternate II* clause of this contract as long as the total number of special studies is not greater than 5 per contract year (See Clause H.5, *Special Provision for Contract Changes*).

4.3 SERVICE INTEGRATION AND DELIVERY

The Contractor shall provide support services for directives management, records management, forms management, and scientific and technical information.

4.3.1 Directives Management

The Contractor shall provide and perform directives management services to ensure an integrated, well-managed and effective Center directives management program. In support of this requirement, the Contractor shall:

- a. Provide full life-cycle management of policies, procedures, work instructions, and Center-wide plans including configurable workflows for collaboration, review, and approval processes, history, versioning control, and audit trail.
- b. Provide management and execution of the Directives Control Board (DCB) to facilitate and process (i.e., submit, review, approve, cancel) Center documents (i.e., the Directives Review Process).
- c. Conduct reviews of draft Center and Agency directives, evaluating and providing comments as appropriate to ensure compliance with Center and Agency format and content requirements.
- d. Analyze, report, and maintain performance history of the directives review process to improve management visibility and decision making.
- e. Provide the organization and management of DCB meeting agendas, activities, minutes and attendance, track assigned tasks/actions, and executive dashboard metrics.
- f. Maintain and enhance the Directives Master List and the Directives Review Process, providing technical support for all DCB meetings.

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4.3.2 Records Management

The Contractor shall perform and provide records management services to ensure an integrated, well-managed, and effective Center records management program. In support of this requirement, the Contractor shall:

- a. Define requirements and maintain data in the Center-wide web-based records plan management database to allow records owners to create, update, and maintain official records plans' inventory.
- b. Conduct records reviews, participate in records management working groups, and maintain records plans and documentation.
- c. Maintain the MSFC Records Staging Areas (RSA) (e.g., MSFC Bldg. 4465, etc.).

4.3.3 Forms Management

The Contractor shall provide and perform forms management services to ensure an integrated, well-managed and effective Center forms management program. In support of this requirement, the Contractor shall:

- a. Provide design, development, and integration support of MSFC forms in accordance with NPD 1420.1, *NASA Forms Management*, and Marshall Procedural Requirements (MPR) 1420.1, *MSFC Forms Management Program*.
- b. Create, deploy, and maintain MSFC electronic forms.
- c. Support MSFC implementation of Agency Adobe LiveCycle electronic forms system to include the conversion of MSFC electronic forms to Web based forms that perform simple to complex processes such as calculations, routing, tracking, database communication, digital signatures, dynamic form display, data validation, and business logic.
- d. Provide artwork and coordinate forms duplication with the MSFC printing and reproduction office.
- e. Review and resolve compatibility issues and provide forms technical support to Center users.
- f. Provide requirements for an electronic forms review tool and provide support for conducting yearly evaluation of all MSFC forms.

4.3.4 Scientific and Technical Information

The Contractor shall provide a Scientific and Technical Information (STI) clearance and publications capability to ensure an integrated, well-managed, and effective Center STI program. In support of this requirement, the Contractor shall:

- a. Provide NF 1676, *NASA Scientific and Technical Document Availability Authorization (DAA)* clearance of STI generated by civil service and Contractor personnel in accordance with NPD 2200.1, *Management of NASA Scientific and Technical Information*, NPR 2200.2, *Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information (STI)*, MPR 2220.1, *Scientific and Technical Publications*, MPR 2190.1, *MSFC Export Control Program*, and MSFC Standard Operating Procedure 1B313, *MSFC Scientific and Technical Information (STI) Program*. The Contractor shall:
 - 1) Review, evaluate, and coordinate approval/clearance of STI document.
 - 2) Maintain STI clearance records and documents.
 - 3) Coordinate transfer of DAA and STI documents to the Center for Aerospace Information (CASI).

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- 4) Support implementation of an automated DAA system.
- b. Produce NASA series reports (e.g., Technical Publications, Technical Memorandums, Contractor Reports, Conference Publications, and Special Publications) and miscellaneous publications (e.g., journal articles, white papers, and conference papers) that conform to Agency policy and guidelines. In support of this requirement, the Contractor shall:
 - 1) Interface with authors to receive technical manuscripts, determine correct report series, and ensure the author package is complete to include a completed Standard Form (SF) 298 *Report Documentation Page*, NF 1676, and other pertinent information.
 - 2) Prepare work orders and determine delivery schedule and dates.
 - 3) Format, edit and prepare manuscripts.
 - 4) Coordinate manuscript review.
 - 5) Deliver final draft, NF 1676, and other pertinent information to the Technical Publications Office for approval and NASA number assignment.
 - 6) Coordinate preparation of the final product and deliver to the author in a variety of media such as a limited amount of printed copies, Preliminary Design Review (PDR) files, CD-ROMs, or interactive CD-ROM/DVD.
 - 7) Deliver a printed copy of each report and PDF file to the Technical Publications Office for placement on the Marshall Technical Report Server (MTRS).

4.3.5 Document Repository Operations

The Contractor shall provide support for the operation, use, and maintenance of the MSFC Document Repository. In support of this requirement, the Contractor shall:

- a. Receive, manage, store, and distribute officially released engineering drawings, associated technical documentation, and standardization documentation.
- b. Support MSFC's continued transition from paper-based to integrated electronic documentation management, including receiving, indexing, storing, distributing, and appropriate archiving.
- c. Maintain proprietary, restricted-access and export control document files in accordance with relevant MSFC and NASA Directives and related regulations and guidelines.
- d. Maintain and transition legacy master microfilm aperture card file and microfiche files.
- e. Prepare in acceptable media and formats any official record documents being transmitted, through coordination with the MSFC Records Manager, to the National Archives and Records Administration (NARA) for archival purposes.

4.3.6 Customer Unique IT Support Services

The Contractor shall provide to MSFC's scientific, engineering, and business communities general information technology support such as:

- a. Application specific functional support
- b. Support to the Center's Organizational Information Technology Managers (OITM)
- c. Web site content management
- d. Application administration
- e. Application data entry
- f. Application training and user assistance

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5. IT INFRASTRUCTURE SERVICES

The Contractor shall provide a comprehensive range of computing, end-user device, and customer support center services for both MSFC and MSFC-hosted Agency services.

5.1 COMPUTING SERVICES

In performance of the Computing Services functions, the Contractor shall:

- a. Provide computer systems, virtual machines and environments, distributed servers and peripheral services for existing/established and future systems to support the application services for MSFC-specific and Agency administrative, business, engineering, and scientific applications. These compute, storage and backup infrastructure components reside at both MSFC and at other NASA Centers and associated sites.
- b. Provide engineering, design, development, acquisition, build, integration, implementation, system testing, operations support, event management, systems administration, backup and storage, IT Security support, configuration management and business continuity. This also includes, but is not limited to, documentation, drawings, pricing methodology, budgeting, schedule, maintenance, consolidated system and system software license management and any required training and training material (DRD 1497MA-002).
- c. Track all PWS Section 5.0 assets (local and distributed) and manage the de-commission / disposal / removal of all NASA-managed systems as described in this PWS.
- d. Utilize a unified workflow process for system issue resolution, system enhancements, and new project implementations. The Contractor shall also utilize the existing Government-provided on-line service request system for developing and delivering cost estimates.
- e. Serve as a front-line integrator and manage the utilization and business administration functions of acquired NICS and EAST service offerings as appropriate.
- f. Facilitate and / or broker Cloud services (e.g., Amazon, Web Enterprise Service Technologies (WEST), and NASA Private Cloud Technologies) with Cloud providers to meet Agency and Center initiatives.

The nominal support requirement for this service is normal MSFC duty hours. Normal MSFC duty hours are defined as a 5 day week, Monday through Friday (excluding holidays), 8 hours per day between 6 a.m. and 6 p.m., and performing remote monitoring with on-call support at all other times.

The Contractor shall also provide support during major events, patching / vulnerability corrective activities, system issues or scheduled customer requirements. This additional support may result in after hours, weekend, or holiday work where activities cannot be conducted during normal duty hours due to unacceptable customer impacts or service level agreements.

5.1.1 Engineering Support

The Contractor shall provide systems engineering and sustaining engineering support. A system typically includes the combination of hardware equipment and systems software to support application requirements. Systems software includes operating systems, transaction management systems, switching systems, performance and utilization tracking systems, libraries, utilities, and other software necessary for the operation and execution of IT systems. In performance of this function, the Contractor shall:

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- a. Maintain and update customer requirements in accordance with DRD 1497MA-002.
- b. Perform, in accordance with DRD 1497MA-002, business cases and trade studies to maintain, balance, and optimize requirements allocations across subsystems.
- c. Perform system performance studies, recommending appropriate changes to eliminate potential system bottlenecks, resources conflicts, and system overloads in accordance with DRD 1497-MA-002.
- d. Isolate problems in systems and execute proper resolution, including status reports, and documenting of changes in accordance with DRD 1497MA-002.
- e. Provide capacity analysis and planning recommendations based on analysis and changes in requirements and technology in accordance with DRD 1497MA-002.
- f. Provide hardware and systems software enhancements to meet customers' requirements in response to changing workloads and technologies.

5.1.1.1 Design, Development and Acquisition

The Contractor shall design, develop, prototype and acquire/procure IT systems to meet customer requirements. Based on customer requirements, existing customer systems, and customer funding, design, development and acquisition work may encompass, but is not limited to production, testing, development and staging systems. In performance of this function, the Contractor shall:

- a. Define requirements to include collecting and documenting customer (including written buyoff) or system requirements in accordance with DRD 1497MA-002.
- b. Analyze the defined requirements ensuring that functionality, reliability, availability, maintainability, security, affordability, and policies and procedures are adequately addressed. Perform systems engineering trade studies to optimize requirements allocations across subsystems in accordance with DRD 1497MA-002.
- c. Develop and document designs consistent with generally accepted engineering guidelines and practices.
- d. Electronically store, backup, update and maintain a library of all approved engineering drawings and designs.
- e. Maximize commonality and the use of Commercial-Off-The-Shelf (COTS) components.
- f. Coordinate external interface designs.
- g. Conduct design reviews of development or acquisition projects.
- h. Develop engineering prototype hardware and software components, subsystems, and systems to verify design and certify requirements.
- i. Deliver multiple design options based on cost, feasibility and maintainability in accordance with DRD 1497MA-002.
- j. Develop and deliver cost estimates.
- k. Acquire, procure, fabricate, assemble, and modify components, systems and subsystems.
- l. Support partnerships with industry, academia, and Government agencies to accelerate and/or assist in the delivery of customer requirements and deadlines.

5.1.1.2 Systems Build, Integration, and Testing

The Contractor shall perform system builds and integration of hardware and software into operational configurations of computational systems. The Contractor shall ensure that all elements of the system cohesively function as a fully integrated, operational system. The Contractor shall

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also perform testing of systems and system components as required for proper operation. In performance of these functions, the Contractor shall:

- a. Build systems and associated system components. This shall include maintaining and updating the complete system build documents for NASA concurrence / approval.
- b. Ensure customer-established functional requirements are met.
- c. Ensure conformance with applicable Federal standards.
- d. Ensure interoperability with existing systems.
- e. Ensure design concepts are not changed during the integration process.
- f. Perform verification and validation testing independent of the design organization.
- g. Perform technical reviews of integration and testing activities.

5.1.1.3 Implementation

The Contractor shall manage and provide the installation and integration of hardware, systems software, and services into fully operational systems and verify satisfaction of the customer's performance requirements. In performance of this function, the Contractor shall:

- a. Assemble, install, connect, inspect and stage the systems.
- b. Integrate, verify functionality, and document implementation of the services.
- c. Perform verification testing of the systems under simulated load conditions, and assess failure modes of the systems.
- d. Provide the customer written instructions that contain all relevant information for reporting a problem related to the service, equipment, or software. Fully manage the process from implementation to operations.

5.1.1.4 Installation

The Contractor shall:

- a. Install the components into a fully operational configuration to meet customer requirements.
- b. Schedule implementations to minimize disruptions or impacts to services.
- c. Verify that the connections, support equipment, and software for the system have been properly installed.
- d. Execute and ensure that property control requirements (e.g., identification tags and stickers) at all NASA Centers where equipment is located are met as defined in the approved *Government Property Management Plan*, which is prepared in accordance with DRD 1497LS-001.

5.1.1.5 Assessment and Acceptance Testing

The Contractor shall:

- a. Verify that the system is installed properly and that the system satisfies customer's requirements using acceptable test and assessment methods and written customer buyoff, as appropriate.
- b. Conduct an acceptance review with CIO and customers, presenting a summary of the verification results.

5.1.2 Operations

For operational systems, the Contractor shall perform the following functions:

- a. Document and implement standardized operating procedures for the MACS environment.
- b. Provide and maintain event management functions.

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- c. Monitor system and sub-system efficiency and perform troubleshooting and tuning of systems, subsystems, components, peripherals, and interfaces.
- d. Prepare, submit and comply with the *Configuration Management Plan* (DRD 1497CM-001).
- e. Perform regular and scheduled maintenance, which includes but is not limited to patches, upgrades, and performance tuning.
- f. Develop and maintain an approved strategy for systems software licenses purchases, installation and activation, and records management of these activities in accordance with DRD 1497MA-002.

5.1.2.1 Continuity of Operations / Disaster Recovery

For Continuity of Operations and Disaster Recovery, the Contractor shall comply with the requirements defined in PWS Section 2.10. In addition, the Contractor shall:

- a. Communicate Continuity of Operations and Disaster Recovery plans of action to housed customers for any events or declared disasters that may impact the delivery of services.
- b. Staff a war room and coordinate with MSFC Facility Office all activities related to restoration of services to support the Center and Agency missions during disasters.
- c. Document the strategic approach to coordinate the return to service of critical Center applications at the DR site located at KSC where all MSFC Center identified critical applications backups are stored. Since MSFC center applications do NOT have infrastructure at the DR site, communicate with Agency service providers to negotiate systems availability to support the critical MSFC applications.
- d. Document the strategic approach to coordinate return to service for the Agency applications at the DR site located at KSC to meet the Recovery Point Objective (RPO) and Recovery Time Objectives (RTO) as documented in the COOP/Disaster Recovery Plan in accordance with Information Assurance negotiated customer objectives.

5.1.3 Systems Administration

The Contractor shall perform system administration functions as delineated below for existing/established and future systems. The Contractor shall:

- a. Provide and maintain operating systems, libraries, and all other systems software necessary for the operation, execution and security of the computer systems.
- b. Operate and maintain computer, peripheral and data acquisition systems, to include system initializations and recoveries, storage and backup management.
- c. Provide security support as required by PWS Section 2.6, in particular, adhering to new security bulletins and installation of patches to fix known vulnerabilities, and maintaining compliance with NASA SOC bulletins.
- d. Provide account management documentation of users to include addition and deletion of user IDs, disk quotas, accounting and access control, utilization reports, and consultation on advancing technologies in accordance with DRD 1497MA-002.
- e. Provide risk analysis and management to include continual identification and assessment of technical, schedule, cost, and organizational risks involved with the operation of systems in accordance with DRD 1497MA-001.

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5.1.4 Backup and Storage

The Contractor shall perform backup and storage functions, which include, but are not limited to the following:

- a. Provide, maintain and manage storage, backups and restoration of the systems including all system files, file systems, directories, and/or user files.
- b. Monitor storage and backup systems for efficiency and utilization.
- c. Provide, as needed, engineering/architectural services for existing and newly acquired backup and storage systems.

5.1.5 Hardware and Systems Software Maintenance

The Contractor shall maintain, in a fully operational condition, all hardware and systems software for those systems which the Contractor has responsibility. Items to be maintained, consistent with the categories of hardware and systems software described in this PWS, will be routinely added or deleted throughout the period of performance of this contract. In performance of this function, the Contractor shall:

- a. Utilize existing Government-provided on-line service request system for tracking and logging operational failures, incidents, discrepancies, problem disposition and resolution, maintenance and repair activities, in accordance with DRD 1497MA-007.
- b. Prepare and submit status reports providing information on outages, such as component involved, period of downtime, and corrective actions in accordance with DRD 1497MA-007.
- c. Prepare and submit a list of key contacts responsible for coordinating and conducting the required hardware and systems software maintenance functions in accordance with DRD 1497MA-002.
- d. Maintain warranty protection and conditions for equipment in warranty.
- e. Maintain vendor subscriptions describing and providing updates and enhancements.
- f. Maintain a complete, up-to-date, and accurate list of spare parts and related material necessary to maintain the equipment in accordance with DRD 1497MA-002.
- g. Ensure availability of parts for both maintenance and production functions.
- h. Maintain a real time, up-to-date service record for each system. The record shall include the date and type of equipment, service performed, list of parts used and costs, staff-hours utilized, and downtime, or time not available for use of equipment in accordance with DRD 1497MA-002.
- i. Maintain a working relationship with vendors and other NASA Centers necessary to obtain required items or maintenance in a timely manner.
- j. Maintain up-to-date vendor documentation for all systems in accordance with DRD 1497MA-002.
- k. Coordinate maintenance activities with customers, other service providers, and other contractors.
- l. Maintain a complete, up-to-date, and accurate list of systems software licenses.
- m. Maintain a complete, up-to-date, and accurate list of systems/hardware inventory.

5.1.5.1 Preventive Maintenance (PM)

The Contractor shall perform PM, defined as maintenance performed by the Contractor that is designed to keep the hardware and systems software in proper operating condition. The PM is

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performed on a scheduled basis, normally during the Principal Periods of Maintenance (PPM) as defined by the Government or the manufacturer for the hardware and software.

- a. In performing PM on hardware equipment, the Contractor shall:
 - 1) Comply with PM schedules that minimize disruption to customer operations. Perform adjustments, cleaning, and replacement of parts according to published maintenance procedures.
 - 2) Install latest releases of Field Change Orders (FCOs) and other hardware updates.
- b. In performing PM to software, the Contractor shall:
 - 1) Acquire, test, and install systems software updates. Systems software tests and installations shall normally be performed during scheduled system test periods.
 - 2) Track and renew system software licenses in accordance with DRD 1497MA-002.
 - 3) Evaluate vendor-supplied updates or patches for applicability.
 - 4) Implement system software releases.

5.1.5.2 Remedial Maintenance (RM)

The Contractor shall perform RM, defined as that maintenance performed which results from equipment and software failure and is performed as required on an unscheduled basis. RM shall be performed on all hardware and software elements specified in this contract. In performance of this function, the Contractor shall:

- a. Perform RM promptly after notification that the component is inoperative.
- b. Ensure that the RM is performed for customer's requirements and minimizes operational impact to the customer.
- c. Plan, implement, and enforce operational procedures to ensure that the system continues to operate while any failed component is being replaced. Document and maintain the operational procedures.
- d. Maintain the maintenance tools, spares, procedures, and skills to perform the requirements of this PWS section.

5.1.5.3 IT System Configuration Management

The Contractor shall prepare, implement, and maintain IT System Configuration Management Documentation in accordance with DRD 1497MA-002. The plan shall include an automated solution for tracking the system configuration in order to effectively manage decisions on hardware and software purchases and redistribution of equipment and software. This includes, but is not limited to the following:

- a. All physical assets (Appliances, servers and non-server equipment)
- b. All servers (Physical and Virtual)
- c. All databases (Oracle, SQL, MySQL)
- d. All software (OS, Database and all others managed under this contract)
- e. All tools (WUG, KACE, HPOM and any other the Contractor may use during this contract)

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5.1.6 Security Support

The Contractor shall:

- a. Adhere to NASA and MSFC IT security policies for the development, documentation, maintenance, and management of operational and technical IT security plans and system administration related to systems managed under this contract, per PWS Section 2.6.
- b. Coordinate and communicate with the CIO Information Assurance (IA) organization to understand security policies and controls and to maintain safeguards as defined in the NASA policies for protection of the CIO infrastructure. For each of these services, the Contractor shall integrate the IT security policies, in coordination with the IT security architect, plans, procedures, and control measures, into their full life cycle and test and review these policies, plans, procedures, and controls for adequacy and compliance as approved by NASA.
- c. Perform system scanning of all IT assets managed under PWS Section 5.0 (i.e., both PWS Sections 5.1 and 5.2). This includes the analysis of scans and mitigation of vulnerabilities in coordination with PWS Section 3.1 personnel, to include patch management and patch implementation in accordance with NASA policy and procedures. The Contractor shall also perform vulnerability management, patch coordination, audit support, security engineering, system security planning, account management and asset management.

5.1.7 Configuration Management and Control

The Contractor shall:

- a. Prepare and submit a *Configuration Management Plan* in accordance with DRD 1497CM-001, which describes the technical and administrative functions necessary to identify and document the technical requirements of a system or project, control changes, deviations, and waivers to these technical requirements, and record and report change processing and implementation status.
- b. Maintain as-implemented systems configuration information to include, but not limited to vendor, hardware model numbers, software revision levels, user interface details, location and customer.

5.1.8 Data Center Management and Control

The Contractor shall, in coordination with NICS contractors and the MSFC Facilities Office, provide support and management for the MSFC data center facilities. The Contractor shall provide support and coordination for the entire distributed infrastructure where facility outages or changes may produce customer impacts (i.e., Disaster Recovery (DR) site at KSC, West Coast Point of Presence (PoP) at Ames Research Center (ARC)). In order to support this requirement, the Contractor shall manage the following for existing and future data centers:

- a. Floor space in a secure 24x7 controlled access and monitored facility
- b. Network connectivity, including IP Addresses, Switching, and Firewall
- c. Monitored environmental controls (HVAC, Fire, Humidity, Controlled Air Flow)
- d. Redundant Power (Dual Commercial feeds, multiple UPS, and Generator Backup)
- e. User controlled access
- f. Documented Assessment and Authorization (A&A) security controls
- g. Asset management / responsibility regardless of the physical locale of the equipment covered under PWS 5.0

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5.1.8.1 Facility Access

MSFC Buildings 4663 and 4207 are classified as NASA Critical Infrastructure (NCI) Facilities (previously known as Mission Essential Infrastructure (MEI)). For access to NCI classified buildings, the Contractor shall comply with NPR 1600.1, *NASA Security Program Procedural Requirements*, NPR 1620.3, *Physical Security Requirements for NASA Facilities and Property*, and MPR 1600.1, *MSFC Physical Security*. Restricted key card access is required to enter all areas. The Contractor shall coordinate with MSFC Protective Services to manage access into and out of the Facilities. Currently video monitoring is provided in B-Wing of Building 4663. Additional video monitoring may be required. The Contractor shall also support a remote monitoring system to manage assets within the Data Center areas. The Contractor shall coordinate these requirements with the MSFC Facilities Office.

5.1.8.2 Electrical and Mechanical Systems

The Contractor shall manage computer rooms designed to deliver a specific amount of electrical energy to the raised-floor areas and extract the heat generated by the consumption of that electrical energy, without regard to specific hardware inventory or configuration in coordination with the MSFC Facilities Office. The Contractor shall coordinate with facilities contractor's for the management of the electrical and mechanical systems in a range that is acceptable to the manufacturer's recommended electrical and mechanical levels of operation.

5.1.8.3 Distributed Systems at Other NASA Centers

The Contractor shall coordinate any vendor access required, ship equipment, and manage the relationship with the distributed POCs at each center for center outages, equipment moves or any other potential impacts to the computer rooms that may impact the distributed systems located at those centers. The Contractor shall also participate in discussions with the center Facilities Office to understand any impacts to the distributed footprint and shall perform asset tracking of the equipment.

5.2 END-USER SERVICES

The Contractor shall support Government-owned end-user desktop, laptop, or workstation systems. The primary Agency contract for providing end-user personal systems is the ACES contract, which is managed by the Agency End-User Services Office (EUSO). ACES is intended to be used by NASA customers for standard, interoperable or engineering-capable end-user systems. However, the nature of research and development sometimes requires specialized systems and/or specialized IT management services not provided by ACES. Under those circumstances, such customer-driven specialized requirements may be fulfilled under this PWS.

The Contractor shall provide IT engineering services for customized solutions for end users, and shall manage and maintain all appropriate services for Contractor-managed systems. The complexity of the IT services delivered will be dependent on the customer requirements stated in the service request. It is envisioned that although specific IT design and development work may be required, overall management, operations, maintenance of all devices, hardware, and software will be optimized by the Contractor. The following sections describe the services required.

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5.2.1 Customer Driven Specialized Information Technology (IT) Solutions

The Contractor shall:

- a. Provide IT solutions that may require design, development, procurement, build, test, integration, implementation, systems administration, backup and storage, IT Security support, configuration management and business continuity to meet specialized IT requirements provided by the customer. Such requests, for example, may be for IT solutions pertaining to a laboratory setting, or specialized systems required for field work. This includes, but is not limited to documentation, electronic drawings, pricing methodology, budgeting, schedule, a fully functional system or solution delivery, hardware and software maintenance, consolidated system and system software license management and any required training and training material in accordance with DRD 1497MA-002.
- b. The Contractor shall utilize the existing Government-provided on-line service request system for managing the workflow for system issue resolution, system enhancements, and new project implementations. The Contractor shall also utilize the Government-provided on-line service request system for developing and delivering quotes for services to the customer.

5.2.1.1 Specialized Systems

The Contractor shall, in coordination with the customer, purchase IT systems provided under this PWS using the Enterprise Services Directory (ESD) catalog, when the specified components are available through that method. The Contractor shall comply with MPR 2800.2, *MSFC Information Technology Services*, for IT purchases. This includes network services, standard end-user devices and associated hardware and software services, as appropriate. Requests for Quote may also be requested through the ESD catalog. The solutions provided by the Contractor shall be scoped based on customer requirements, existing customer systems, and customer funding. The Contractor shall:

- a. Perform full or tailored project management and system engineering, per NID 7120.99 (or NPR 7120.7 when approved) and *NASA Systems Engineering Handbook* (NASA/SP-2007-6105), as appropriate, and including but not limited to:
 - 1) Define or refine initial requirements that shall include collecting and documenting customer or system requirements in accordance with DRD 1497MA-002.
 - 2) Analyze the defined requirements ensuring that functionality, reliability, availability, maintainability, security, affordability, and policies and procedures are addressed. Perform systems engineering trade studies to optimize requirements allocations across subsystems in accordance with DRD 1497MA-002.
 - 3) Develop and document designs consistent with accepted engineering guidelines and practices.
 - 4) Electronically store, backup, update and maintain a library of all approved engineering drawings and designs.
 - 5) Maximize commonality and the use of COTS components.
 - 6) Coordinate external interface service or operational level agreements.
 - 7) Conduct appropriate reviews.
 - 8) Develop engineering prototype hardware and software components, subsystems, and systems to verify design and certify requirements.
 - 9) Deliver multiple design options based on cost, feasibility and maintainability in accordance with DRD 1497MA-002.
 - 10) Develop and deliver cost estimates.

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- 11) Acquire, procure, fabricate, assemble, and modify components, systems and subsystems.
 - 12) Provide statuses of work performed as requested.
 - 13) Support partnerships with industry, academia, and Government agencies to accelerate and/or assist in the deliverance of customer requirements and deadlines.
- b. The Contractor shall install, integrate hardware, systems software, services and applications software components into fully operational systems and verify the customer's performance requirements. The Contractor shall:
- 1) Assemble, install, connect, inspect and stage the systems.
 - 2) Integrate, verify functionality, and document implementation of the services.
 - 3) Perform verification testing of the systems under simulated load conditions, and assess failure modes of the systems.
 - 4) Provide the customer written instructions that contain all relevant information for reporting a problem related to the service, equipment or software.
 - 5) Fully manage the process from implementation to operations.
 - 6) Provide statuses of work performed as requested.
- c. The Contractor shall assure customer acceptance of the delivered solution. The Contractor shall:
- 1) Verify that the system is installed properly.
 - 2) Ensure that the system satisfies customer's requirements using acceptable test and assessment methods.
 - 3) Obtain written customer buyoff, as appropriate.
 - 4) If appropriate, conduct an acceptance review with CIO and customers presenting a summary of the readiness results, per MPR 2800.2.

5.2.1.2 Customer Specialized Procurement

The Contractor shall comply with all procurement functions described in PWS Section 2.4, Procurement, for all equipment and software purchases that cannot be obtained through the ACES catalog.

5.2.2 System Administration Functions

The Contractor shall:

- a. Perform appropriate end-user system administration functions per PWS Section 5.1.3, System Administration, for the purpose of maintaining systems designated to be managed by the Contractor, including but not limited to solutions provided through PWS Section 5.2.1, Customer Driven Specialized Information Technology (IT) Solutions. In performance of this function, the Contractor shall:
- 1) Maintain Agency-mandated security settings and software.
 - 2) Maintain operating systems and patches, including Windows, Macintosh, and various Unix operating systems.
 - 3) Maintain installed software, per licensing agreement established and customer requirements.
 - 4) Perform installed software patching in a timely manner (per Agency standards).
 - 5) Provide automated backups, and backup management with a restore process.

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- 6) Utilize Active Directory management techniques (e.g., group policies, security group membership management, etc.) as utilized by NASA using NASA-provided NETIQ tools “Directory Resources Administrator” and “Group Policy Administrator”.
- b. Patch specialized software packages based on customer requirements that run on some ACES-managed end-user systems. This software is typically called “Tier 3” software, and is out-of-scope for ACES Enterprise patch management. The Contractor shall coordinate with the customer and local ACES Subject Matter Expert to perform this function. A typical patch methodology shall include use of the Agency provided KACE tool.

The support requirement for this service is normal duty hours, Monday through Friday, excluding federal holidays or other customer-specific arrangements. The Contractor shall provide on-call support at all other times for severe issues through the Help Desk function. Additional support may be required during major events, which includes, but is not limited to system issues, and is based on customer requirements for extended support. This additional support may result in after hours, weekend, or holiday work.

5.2.2.1 Backup and Storage

The Contractor shall perform backup and storage functions for end-user systems managed by the Contractor per PWS Section 5.1.4, Backup and Storage.

5.2.2.2 Maintenance

The Contractor shall perform hardware and systems software maintenance for end-user systems managed by the Contractor per PWS Section 5.1.5, Hardware and Systems Software Maintenance.

5.2.2.2.1 Preventive Maintenance (PM)

The Contractor shall perform Preventive Maintenance (PM) per PWS Section 5.1.5.1, Preventive Maintenance (PM), if the customer requires preventive maintenance to be performed.

5.2.2.2.2 Incident Management (IM)

The Contractor shall:

- a. Respond to and resolve issues related to systems for which they are responsible. Two categories are defined for response and resolution for incidents:
 - 1) Category (1): Specialized incident management which is dependent on a written agreement with the customer concerning the system or systems to be managed in the agreement.
 - 2) Category (2): Normal, or default incident management response and resolution: When no specialized agreement is in place, the following requirements for incident management shall be met:
 - (i) Two (2) business hour response to customer after initial opening of ticket.
 - (ii) Eight (8) business hour resolution of issue, logged resolution at Customer Support Center and customer notification of issue resolution.
 - (iii) The Contractor shall verify with the customer that the issue has been resolved to close the ticket, and include any customer comments in the closed ticket.
- b. Provide incident ticket statistics per DRD1497 MA-007.

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5.2.2.3 Security Administration

The Contractor shall adhere to NASA and MSFC IT security policies in the development, documentation, maintenance, and management of operational and technical IT security plans and system administration related to systems managed under this contract, per PWS Section 2.6, Security.

The Contractor shall comply with all NASA Security requirements for systems for which they are responsible. This includes, but is not limited to, deploying and maintaining per NASA-STD-2804, *Minimum Interoperability Software Suite*, the following:

- a. NASA baseline Agency Security Configuration Standards (ASCS) described by the Emerging Technology and Desktop Standards (ETADS) group.
- b. Anti-Virus software when not available from EUSO services (note: EUSO currently provides Anti-Virus software for Windows, Macintosh, and Redhat Linux desktop, but not server, systems).
- c. For systems determined to be in scope, Data-at-Rest (DAR) Whole Disk Encryption when not available from EUSO Services (note: End-User Services provides a DAR solution for Windows, Macintosh, and Redhat Linux desktop, not server, systems) per OMB M-06-16 *Protection of Sensitive Agency Information and Agency Requirements*.
- d. Security patches to operating system and other software deployed to the system, in accordance with requirements in NASA ITS-HBK 2810.04-01, *Security Categorization, Risk Assessment, Vulnerability Scanning, Expedited Patching, & Organizationally Defined Values*.

5.3 CUSTOMER SUPPORT CENTER**5.3.1 Customer Support Center Services**

The Contractor shall provide a 24 hours a day, 7 days a week, and 365 days a year, multi-tier customer support center supporting both MSFC and MSFC-hosted Agency services. In performance of this requirement, the Contractor shall:

- a. Operate an integrated customer support center 24 hours a day, 7 days a week, and 365 days a year, working cooperatively with other helpdesks to resolve all problems regardless of the initial origin of the problem.
- b. Receive all service calls and promptly effect resolution.
- c. Operate and maintain the Government-provided on-line service request system to query, update, and display information related to problems and resolutions per DRD 1497MA-007.
- d. Provide feedback regarding problem resolution as requested by the customer.
- e. Perform trouble reporting and tracking per DRD 1497MA-007.
- f. Provide reports of status, summaries, and statistics per DRD 1497MA-007.
- g. Provide user notification of outages and activities.
- h. Provide the customer written information regarding the reason for trouble/outage, corrective actions taken, and relevant information for any follow-on action, upon resolution of a trouble ticket/outage of service.
- i. In addition to the above Tier I/Tier II support services, the Contractor shall also provide the following :
 - 1) Notification alert services for all emergency events and situations at MSFC.

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- 2) Publish “This Just In” email messages as directed by the MSFC Emergency Operations center (EOC) manager.
- 3) Provide support to the MSFC EOC in accordance with the IMSC Plan 1040.3, *MSFC Emergency Plan*.
- 4) Serve as the EOC for MSFC during non-prime hours.
- 5) Provide severe weather monitoring and off-hour employee alert service.
- 6) Provide off-hour telephone answering service on behalf of the MSFC Director and Senior Management staff.

5.3.2 Customer Support Center Continuity of Operations / Disaster Recovery

For Continuity of Operations and Disaster Recovery, the Contractor shall comply with the requirements as defined in PWS Section 2.10, Continuity of Operations Plan (COOP) and Disaster Recovery (DR) Plan, and IMSC Plan 1040.3.

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6. AUDIO VISUAL INFORMATION SERVICES

The Contractor shall provide management, operations, and production for Audio Visual Information Services (AVIS) to include, but not limited to, animation and interactive multimedia services, graphics and publications, photographic services, reproduction and printing services, television and video services, audio video support services, and special events administration and support services to MSFC and MAF as applicable. The Contractor shall provide each service in accordance with applicable laws, regulations, NASA and MSFC regulatory guidelines.

The Contractor shall assist the Government in the disposition of historical AVIS records in accordance with NPD1440.6, *NASA Records Management*.

The Contractor shall be prepared to fully support overlapping events in all PWS 6.0 areas, as requested.

6.1 ANIMATION AND INTERACTIVE MULTIMEDIA SERVICES

The Contractor shall create, develop and distribute animations, presentations, and other multimedia products to MSFC and MAF customers, contractors, research partners in industry and academia, to Government leaders, and to the public. The production of animation and interactive multimedia requires planning (pre-production), content production, and final production which includes potential deliverables as follows:

- a. Pre-production work deliverables which can consist of project outline, working script, storyboard, shooting plan and shooting schedule.
- b. Production work deliverables which can consist of artistic backgrounds and texture maps, model design and construction, set design, camera set up and motion plan, lighting set-up, motion path and/or key-framing the required action, and creating the wire frame animation and/or the animatic.
- c. Post-production work which can consist of reviewing the rendered animatic, assessing the success or failure of each take and each scene, editing the scenes together into a video addressing the incorporation of the special effects into the live shot scenes, adding special effects that help to dissolve each scene into other scenes as the production requires, reviewing the dailies with the customer, and making any necessary adjustments.

6.2 GRAPHICS AND PUBLICATIONS

The Contractor shall provide labor, material, equipment, management, and other support for MSFC and MAF graphics and publications services and products. The Contractor shall provide services and products adhering to the *NASA Style Guide* located at http://www.everyspec.com/NASA/NASA-General/NASA_StyleGuide_Nov06_3662.

The Contractor shall create, design, layout, illustrate, proof, and produce, products to include, but not limited to, the following: publications and presentations; banners, posters, and displays; books, brochures, newsletters, fact sheets, and programs; certificates; charts, graphs, and tables; illustrations; interior signs; miscellaneous products; matting, mounting and laminating; and presentations in a variety of deliverable media.

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6.3 PHOTOGRAPHIC SERVICES

The Contractor shall:

- a. Provide still photographic services for still documentation, passport/visa photos, official portraits, special events photography, photographic laboratory services including documentation of lab or field-testing to official NASA personnel, photos and high-quality digital images for distribution to news media and public outreach at MSFC and MAF.
- b. Operate photographic equipment, distribution systems, and studio. These services include maintenance of existing processes and development or acquisition and implementation of enhancements for the imaging services.
- c. Schedule and operate the conference facilities located in Morris Auditorium in Building 4200 at MSFC.

6.3.1 Still Photography

The Contractor shall:

- a. Provide still photographic documentation of Centerwide events that would be considered significant or historical.
- b. Ensure that still photographers document technology research elements, significant testing milestones, and hardware studies conducted at the Center.
- c. Provide photographic distribution in support of programs and projects.

6.3.2 Photographic Production Services

The Contractor shall provide digital photographic production including image enhancement, printing, and electronic distribution.

6.3.3 Marshall Image Exchange (MiX) and Photographic Archive

In performance of the MiX and Photographic Archive functions, the Contractor shall:

- a. Maintain still photographic libraries and archives on Center.
- b. Scan images for displaying on the current MiX website in accordance with NASA Image Exchange (NiX) guidelines.
- c. Research and develop captions for images, including interfacing with NASA/MSFC program/project personnel.

6.4 REPRODUCTION AND PRINTING SERVICES

The Contractor shall provide materials, management, and other resources necessary to operate in-house duplicating services and provide commercial printing procurement services to MSFC programs, projects, and organizations. The Contractor shall provide these services in accordance with Title 44 U.S.C. Chapters 103 and 501, Section 207 of Public Law 102-392, the *Joint Committee on Printing (JCP) Printing and Binding Regulations (101-9)*, NPD 1490.1, *NASA Printing, Duplicating, and Copy Management*, and MPR 2800.2.

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6.4.1 In-house Duplicating Services

In performance of the in-house duplicating functions, the Contractor shall:

- a. Operate and manage an in-house duplicating facility, located in Building 4200, Room G34, and large-format engineering document reproduction, located in Building 4491. The services provided shall include, but not be limited to:
 - 1) Black and White (B&W) duplication of (one or two-sided) standard-size documents (up to 11"x17")
 - 2) Large-format documents (simplex only) up to J-size
 - 3) Color duplication of standard documents up to 12" x 18" (one or two-sided).
- b. Provide binding services for B&W and color products to include, but not limited to, side stitch, stapled-upper-left, saddle-stitch, adhesive-tape perfect binding, three-hole drill, metal fasteners, GBC binding (comb binding), and plastic coil binding.
- c. Provide special finishing operations to include, but not limited to, tri-fold, pamphlets, printed & inserted tabs, Z-fold for 11"x17", large document folding, adhesive padding, and variable data printing. The Contractor may on occasion be required to provide "expedited service" that requires overtime.
- d. Receive, process, and duplicate from paper originals or electronic files submitted by the customer from various sources and/or media.
- e. Receive customer service requests through an on-line ordering system. The Contractor shall complete each service request per the customer specifications and delivery dates as requested. The Contractor shall acquire, manage installation, and implement new processes or software as needed.
- f. Collect production metrics within the service request system and maintain service request records per the MSFC Printing Office Records Retention Plan. The Contractor shall prepare and submit various production reports monthly, quarterly, and annually in accordance with DRD 1497MA-005.

6.4.2 Commercial Printing Procurement

In performance of the commercial printing functions, the Contractor shall:

- a. Maintain the ability to procure any commercial printing as a backup capability as needed through the Government Printing Office (GPO) in support of all MSFC organizations and entities acting on behalf of MSFC. This procurement process is mandated and provided in accordance with Title 44 of the U.S. Code and Public Law 102-392 (amended by Public Law 103-283, Legislative Branch Appropriations Act), Section 207 and the NPD 1490.1.
- b. Provide printing procurement services to the MSFC Printing Office, Building 4200. The Contractor shall procure posters, brochures, tri-fold pamphlets, periodicals, bookmarks, tags, forms, decals, lithographs, letterhead, CD/DVD mastering and replication, and business cards for MSFC customers.
- c. Interface with MSFC customers to determine their requirements, write printing requisitions per GPO procedures review and approve pre-production proofs, and evaluate printed products for compliance to specifications.
- d. Report quality defects and manage corrective action.
- e. Utilize all procurement vehicles available through the GPO to include one-time solicitations, MSFC and NASA Headquarters term contracts, the GPOExpress program, and the GPO

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Simplified Purchase Acquisition (SPA) program. The Contractor shall assist the MSFC Printing Office in managing these contracts through Atlanta Regional GPO and Washington GPO.

- f. Maintain expert knowledge of terms and conditions of printing contracts.
- g. Assist the MSFC Printing Office in collaborating with other NASA Centers as a participant in the "NASA Print Rider" program.
- h. Understand and procure products within MSFC funding guidelines as prescribed by the MSFC Printing Officer.
- i. Manage office records and databases per the MSFC Printing Office Records Retention Plan.
- j. Collect production metrics within the service request system. The Contractor shall prepare and submit various production reports monthly, quarterly, and annually per DRD 1497MA-005, *Reproduction and Printing Management Reports*.

6.5 TELEVISION AND VIDEO SERVICES

- a. The Contractor shall provide material, management, and other resources required for the total operation of MSFC's Television and Video Services. Activities shall include planning, producing, documenting, engineering, archiving, operations, and maintenance. In providing these services, the Contractor shall:
 - 1) Operate and maintain the existing studio.
 - 2) Produce, distribute, televise, transmit, and record live presentations, ceremonies, programs and other special events.
 - 3) Prepare and distribute live and recorded broadcast quality productions.
 - 4) Plan, develop, script-write, film and edit a variety of broadcast quality video projects.
 - 5) Record and archive in support of MSFC research and development testing.
 - 6) Provide content for closed circuit television (CCTV), DesktopTV (DTV), and Podcasts.
 - 7) Receive and distribute NASA TV content.
 - 8) Provide select MSFC videos for distribution on NASA TV.
 - 9) Operate and maintain the equipment in the Building 4207 television department.
 - 10) Operate a multi-format recording and duplication facility including but not limited to VHS, DVCAM, DVD, CD, DVC Pro, SVHS, DVC Pro50, DVC ProHD, and HDCAM.
 - 11) Operate and maintain the full broadcast audio production facility.
 - 12) Complete the migration of production and distribution processes to HDTV.
 - 13) Maintain music libraries, motion picture photographic library, tape library and archives. At all times, the Contractor shall know the location of any item in the archive.
 - 14) Integrate content between AVIS PWS Section 6.0 elements and distribute content to other AVIS PWS elements.
 - 15) Assist the Agency's DTV Working group as needed.
 - 16) Maintain and operate the equipment infrastructure in the conference facility located in Morris Auditorium in Building 4200.
- b. The Contractor shall, using NASA approved software tools and formats, develop, implement and maintain hardware and software required to provide live and on-demand streaming services to MSFC and MAF using the DesktopTV application (DesktopTV) as a front-end web interface to both live and on-demand content. The Contractor shall provide content delivery, live event support and format conversion in support of this service.

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6.6 AUDIO VIDEO SUPPORT SERVICES

The Contractor shall:

- a. Maintain the hardware required for the Marshall Cable Television System.
- b. Receive downlinks during NASA missions as a backup to the main receiving system as well as other downlinks to support MSFC and the Agency.
- c. Provide and maintain all MSFC and MAF Audio Video installations to include but not limited to televisions, screens, projectors.
- d. Provide Audio Video support for requested MSFC and MAF events by providing the sound system, podium, microphone, flags, projectors, large screens, and other associated equipment.

6.7 SPECIAL EVENTS ADMINISTRATION AND SUPPORT SERVICES

The Contractor shall support MSFC and MAF special events, which are events not in the category of research, testing or development, as customer requested through an online service request system. The Contractor shall:

- a. Coordinate between the customer and service providers to identify specific details needed to support the event which includes, but is not limited to, finalizing requirements, preparing an event requirements document, and preparing and delivering a cost estimate to the Government for distribution to the requesting customer for approval.
- b. Send a post-event continuous improvement electronic customer survey to the customer within 2 days after the event. This survey requests feedback on the quality of services provided by the Contractor. This feedback is shared with the service providers and if negative feedback is received from a customer, procedures in MWI 1280.2, *MSFC Customer Feedback (CF) Processing Through the Corrective Action System (CAS)*, shall be followed.