

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE	PAGE OF PAGES 1 2	
2. AMENDMENT/MODIFICATION NO. 000073	3. EFFECTIVE DATE 04/26/2013	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (if applicable)	
6. ISSUED BY NASA/Marshall Space Flight Center Office of Procurement Marshall Space Flight Center AL 35812	CODE MSFC	7. ADMINISTERED BY (If other than Item 6) NASA/Marshall Space Flight Center PS33/Kimberly N. Williams phone: (256) 544-1580 fax: (256) 544-8993 email: Kimberly.n.williams@nasa.gov	CODE MSFC	
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) DYNETICS TECHNICAL SERVICES INC. 1002 EXPLORER BLVD HUNTSVILLE AL 35806-2806		(x) 9A. AMENDMENT OF SOLICITATION NO.	9B. DATED (SEE ITEM 11)	
CODE 5RWT5	FACILITY CODE	X 10A. MODIFICATION OF CONTRACT/ORDER NO. NNM10AA03C	10B. DATED (SEE ITEM 13) 12/03/2009	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGEMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

See Schedule

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

CHECK ONE	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 52.243-2 CHANGES (Cost -Reimbursement) and 43.103 (a) Mutual Agreement of Both (BILATERAL)
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor is not, is required to sign this document and return 2 copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

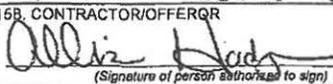
1. The purpose(s) of this modification are to:

a) Pursuant to the Changes Clause incorporate the MSFC and MAF Electronic Security System into the current PWS Section 5.6 per the COR guidance from previous Technical Direction provided January 24, 2011 for MSFC Security services. In addition, this Mod incorporates the MAF Security initial request received in late 2012 to align the LENEL work from Jacobs to the MITS contract.

b) Contractor has no exceptions to the proposed requirements and competencies proposed by the Govt. and has agreed to perform the additional services at no-cost with no contract value changes.

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print) Allison Hopkins - Contracts Administrator	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Kimberly N Williams
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)	15C. DATE SIGNED 4/26/13
16B. UNITED STATES OF AMERICA  (Signature of Contracting Officer)	16C. DATE SIGNED 04/26/2013

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
NNM10AA03C/000073

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NAME OF OFFEROR OR CONTRACTOR
DYNETICS TECHNICAL SERVICES INC.

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>2. Pursuant to the Changes Clause 52.243-2, the following page(s) or attachment(s) has/have been modified or deleted in their entirety. Slip-sheets to the contract are provided with sidebars indicating change:</p> <p>Page J-1 List of Attachments - PWS pages revised Page J-1-3 - PWS 5.6 MSFC and MAF Electronic Security Systems Pages J-1-25 & J-1-46 - PWS pages revised (25-27) and these slipped (28-46) Attachment J-12 - Acronyms & Abbreviations revised in its entirety</p> <p>3. Except as provided herein, all terms and conditions of this contract remain unchanged and in full force and effect.</p> <p>Current Contract Value remains unchanged: \$262,196,602 LIST OF CHANGES: Reason for Modification : Supplemental Agreement for work within scope Total Amount for this Modification: \$0.00 (No-Cost) Current Contract Value: \$262,196,602.00 Potential Contract Value: \$334,135,364.00 Payment Terms: Net 30 days</p>				

SECTION J - DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

ATTACHMENT J

LIST OF ATTACHMENTS

<u>ATTACHMENT</u>	<u>DOCUMENT</u>	<u>PAGES</u>
ATTACHMENT J-1	Performance Work Statement	J-1-1 – J-1-46
ATTACHMENT J-2	Data Procurement Document	J-2-1 – J-2-47
ATTACHMENT J-3	Wage Determinations	J-3-1 – J-3-22
ATTACHMENT J-4	Performance Requirements Summary	J-4-1 – J-4-5
ATTACHMENT J-5	Surveillance and Cost Plus Fixed Performance Fee Plan	J-5-1 – J-5-17
ATTACHMENT J-6	Safety & Health Implementation Guide and Assessment Matrix	J-6-1 – J-6-3
ATTACHMENT J-7	Associate Contractor Agreements (ACAs)	J-7-1
ATTACHMENT J-8	Installation Provided Property and Services	J-8-1 – J-8-2
ATTACHMENT J-9	Applicable Regulations and Procedures	J-9-1 – J-9-9
ATTACHMENT J-10	Contract Security Classification and Specification (DD Form 254)	J-10-1 – J-10-2
ATTACHMENT J-11	Safety, Health and Environmental (SHE) Plan	J-11-1
ATTACHMENT J-12	Acronyms and Abbreviations	J-12-1 – J-12-9
ATTACHMENT J-13	PWS Work Breakdown Structure	J-13-1 – J-13-2
ATTACHMENT J-14	Personal Identity Verification (PIV) Procedures	J-14-1 – J-14-4
ATTACHMENT J-15	Organizational Conflict of Interest (OCI) Mitigation Plan	J-15-1

(End of clause)

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- 4.4.3 Forms Management
- 4.4.4 Scientific and Technical Information
- 5.0 Telecommunications Services**
- 5.1 Telephone Services
- 5.2 Facsimile Services
- 5.3 Cable Plant
- 5.4 Radio Frequency (RF) Spectrum Management
- 5.5 Emergency Telecommunications
- 5.6 MSFC and MAF Electronic Security Systems**
- 5.7 Other Services

- 6.0 Applications and Web Services**
- 6.1 Center Business and Administrative Application and Web Services
- 6.2 Center Science and Engineering Application and Web Services
- 6.3 RESERVED
- 6.4 Documentation Repository

- 7.0 Computing Services**
- 7.1 Engineering Support
- 7.1.1 Design, Development and Acquisition
- 7.1.2 Systems Build, Integration, and Testing
- 7.1.3 Implementation
- 7.1.4 Installation
- 7.1.5 Assessment and Acceptance Testing
- 7.2 Operations
- 7.3 Systems Administration
- 7.4 Database Administration
- 7.5 Backup and Storage
- 7.6 Hardware and Systems Software Maintenance
- 7.6.1 Preventive Maintenance (PM)
- 7.6.2 Remedial Maintenance (RM)
- 7.7 Security Support
- 7.8 Configuration Management and Control

- 8.0 Audio Visual Information Services**
- 8.1 Animation and Interaction Multimedia Services
- 8.2 Graphics and Publications
- 8.2.1 Graphics and Publication Services
- 8.2.2 Proposal Services
- 8.2.3 Scientific and Technical Information (STI)
- 8.2.4 Computer Analyst Support
- 8.3 Photographic Services
- 8.3.1 Still Photography
- 8.3.2 Photographic Laboratory
- 8.3.3 RESERVED
- 8.3.3.1 RESERVED

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- c. Procure, install and maintain facsimile hardware and software to integrate this service with MSFC electronic mail services.

5.3 Cable Plant

The contractor shall provide Cable Plant Services for all outside cable plant media (fiber and copper) and all fiber optic media (both inside and outside) support for MSFC and MAF. This shall include all installation and maintenance support along with field location support. The contractor shall maintain cable plant documentation in accordance with DRD 1292MA-002. The contractor shall maintain a Class 3 Asbestos Crew which shall install various types of wiring (e.g. data, telephone, AVS, EWS) in buildings with asbestos containing material. The Asbestos Crew is required to undergo annual training to certify ability to work in above ceiling asbestos areas and performed in accordance with the SHE Plan DRD 1292SA-001 and MPR 1840.4, *Marshall Asbestos Program*.

5.4 Radio Frequency (RF) Spectrum Management

The contractor shall provide labor, material and other support required for the total operation and management of RF services at MSFC and MAF. These services include identification, planning, and coordination of RF spectrum requirements, allocation and assignment of frequencies, maintenance of frequency assignment records, and detection and reporting of RF Interference (RFI). The contractor shall provide maintenance of existing capabilities, development or acquisition, and implementation of enhancements for fixed, portable, and mobile radios as well as cellular signal enhancements and cellular carrier operated facilities.

5.5 Emergency Telecommunications

The contractor shall provide emergency telecommunications to MSFC and MAF. These services shall include maintenance of existing equipment, development or acquisition, and implementation of enhancements in support of emergency telecommunications, including Emergency Warning Systems support, and operations support services during disaster/ emergency situations such as, but not limited to, fire, explosion, accident, bomb threat, civil disturbance, terrorist-related incidents, flood, ice, snow, and tornadoes.

5.6 MSFC and MAF Electronic Security System

The contractor shall provide Electronic Security System (ESS) services for MSFC and MAF.

5.6.1 Electronic Access Control

5.6.1.1 Interior and exterior electronic door systems. The contractor shall provide badge readers, electronic lock control equipment, crash bars, sensors, emergency bypass per life safety code, connecting wiring, and preventative and trouble-oriented maintenance.

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5.6.1.2 Vehicle gate (fence, rolling, crash barrier and swing-arm) and pedestrian turnstile systems. At MSFC only, the contractor shall provide gate and turnstile equipment, installation, badge readers, electronic lock control equipment, traffic sensors, emergency bypass per life safety code, connecting wiring, and preventative and trouble-oriented maintenance. At MSFC only, the contractor shall replace gate operators, and replace turnstile components and will consult with outside vendor to replace physical gate, turnstile, or other components when necessary.

5.6.1.3 Duress alarms, door contacts, sensors. The contractor shall provide duress alarms, contact and sensor equipment, installation, connecting wiring, preventative and trouble-oriented maintenance.

5.6.2 Video Surveillance System

5.6.2.1 Interior and Exterior Surveillance Cameras. The contractor shall provide cameras, camera-supporting equipment, interconnecting wiring, installation of interior and exterior cameras, interface with Enterprise Physical Access Control System (EPACS) and preventative and trouble-oriented maintenance.

5.6.2.2 Digital Video Recorders (DVR). The contractor shall provide DVR equipment, installation, interconnecting wiring, interface with EPACS, preventative and trouble-oriented maintenance of DVR's to capture and store surveillance video.

5.6.2.3 The contractor shall provide video surveillance support to Protective Services Office investigations.

5.6.3 Regional Administration

5.6.3.1 The contractor shall provide equipment, installation, interconnecting wiring, interface with the EPACS, preventative and trouble-oriented maintenance for all Center Premise Equipment (CPE) which includes but is not limited to card readers, cameras, DVR's, input boards, reader interfaces, Communication Servers, PELCO matrix switcher, duress alarms, contact alarms, and additional security devices that will be required to meet future NASA and Federal physical security guidelines.

5.6.3.2 The contractor shall be responsible for developing, updating, and maintaining the CPE Information Technology (IT) systems security plan in accordance with NASA and Federal directives and policies.

5.6.3.3 The contractor shall be responsible for the installation, maintenance, and troubleshooting of all Personnel Identification Verification (PIV) badging workstations. The Contractor will be responsible for installing the security client on all PIV enrollment and associated workstations and will provide continual troubleshooting and maintenance.

5.6.3.4 The contractor shall provide security reports in support of the Protective Services Office (PSO) operations, and obtain and transmit video footage in support of PSO operations.

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5.6.4 General Support

5.6.4.1 Physical Security Systems Engineering Support. The contractor shall:

- a. Assist PSO Physical Security Specialists (PSS) during evaluation of new and existing facilities to determine appropriate methods for safely securing those facilities utilizing ESS equipment.
- b. Design, document, and procure all equipment, circuits, installation labor, and warranty support required to provide the systems to support the methods prescribed by PSO PSS.
- c. Coordinate with the Facilities Office, regarding ESS installation and design on all building construction projects.

5.6.4.2 Cable installation. The contractor shall:

- a. Be responsible for cable installation on all activities, to include those in areas identified as asbestos.
- b. Participate in asbestos installations at MSFC, and work in conjunction with the Center asbestos team.

5.6.5 PSST Additional Requirements

5.6.5.1 The contractor shall attend training to maintain existing and new certifications required to maintain, upgrade, and repair the ESS.

5.6.5.2 The contractor shall participate in meetings and telecons as required.

5.6.5.3 The contractor shall maintain regular interface with MSFC PSO ESS Lead regarding all ESS activities.

5.6.5.4 The contractor shall maintain regular interface with the NASA Enterprise Applications Competency Center (NEACC).

5.6.5.5 The contractor shall maintain an on-hand inventory of ESS equipment for maintenance and repairs which will be migrated into the MSFC Management Information and Control System (MICS) production inventory system.

5.6.5.6 The contractor shall provide all vehicles to include specialty vehicles and tools required to perform all ESS operations.

5.6.5.7 The contractor shall incorporate and support the integration of emerging technologies into the ESS.

5.6.5.8 The contractor shall obtain and maintain the appropriate level background investigation required for their designated position.

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5.7 Other Services

The contractor shall provide other telecommunications services at MSFC and MAF required to meet customer requirements. These services shall include maintenance of existing processes, development or acquisition, and implementation of enhancements. In providing these services, the contractor shall:

- a. Operate and maintain a central distribution process for voice, video, and data products (incoming and generated)
- b. Provide and maintain dedicated transmission services between local customers and host computer systems.
- c. Provide procurement support for vendor circuits from MSFC to offsite NASA affiliated buildings. These circuits include, but are not limited to T-1, metro-Ethernet, and dark fiber and are used to extend the MSFC telephone system, MSFC Local Area Network, MSFC Cable TV system to offsite buildings. These offsite buildings are located within Huntsville or Madison, Alabama.

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6.0 MSFC Applications and Web Services

The contractor shall provide computer applications and web services for MSFC customers; including areas of Business and Administration; Science and Engineering; and Document Repository. These services shall include development, sustaining and production support in compliance with established software and web standards. In providing these services the contractor shall:

- a. Maintain applications and web portfolio information in the Applications Inventory Module (AIM), a government provided and contractor maintained application, in accordance with DRD 1292MA-002. The contractor shall ensure that AIM is available for access and use by all MSFC organizations and contracts to support their data entry of custom developed or commercial-off-the-shelf (COTS) as required by the OCIO.
- b. Provide development and sustaining application support for both custom developed and COTS software which includes: definition and specification, requirements analysis and feasibility studies, design and development, configuration management, user assistance and training, documentation, ongoing maintenance (repairs and upgrades), and other operational support.
- c. Evaluate, procure, install, integrate, test, train, assist users, administer and provide other operational support. This service also includes application-related consulting, subject matter technical experts, and technical management.
- d. Adhere to life cycle support consistent with the Software Engineering Institute (SEI) Level 2 Capability Maturity Model Integration (CMMI) assessment in all areas of software development with Government approval at logical breaks in the lifecycle.
- e. Adhere to the guidelines for software release approval as outlined in MPR 2800.4, *Marshall Operational Readiness Review (MORR) for Center Applications and Web Sites*.
- f. Adhere to Federal, Agency and Center policies in the Enterprise Architecture area during development and to include the provision of tools for capturing and reporting data to support the EA landscape at MSFC.
- g. Provide data preparation, data entry, initiation and monitoring of production programs, user assistance, and generation, review and distribution of reports.
- h. Provide application administration on infrastructure hardware resources to include adherence to the OCIO guidelines for data structures, development tools, and approved platforms.
- i. Implement and audit MSFC web environments for web site compliance to Federal laws and Agency and Center policies.
- j. Provide Data Administration (DA) in the planning, organization, design, control, and documentation of data resources for all OCIO-supported systems in accordance with DRD 1292MA-002 to include the following:
 1. Establish and implement consistent overall DA strategies, such as data definition, logical data modeling, data resource life cycle management, data security, data integrity, and quality assurance
 2. Establish, implement, and maintain a DA program that incorporates the following sub elements: DA policies, procedures and standards, data architecture, data dictionary and models, orientation and training, and quality assurance.
 3. Use Service Oriented Architecture (SOA) principles and services to facilitate cost effective means for data exchange within the supported applications and serve as MSFC expert in SOA to assist other organizations with use of and understanding the SOA environment.

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The contractor shall develop content for inclusion into the NASA Web Portal. All required policies and procedures currently approved at the Agency level for this environment shall be adhered to include, but are not limited to, Web Portal guidelines.

In support of all MSFC organizations, the contractor shall define and implement the set of processes and activities necessary to integrate MSFC applications, including those included under this contract and other applications across the Center, requiring account management into the NASA Account Management System (NAMS).

The contractor shall integrate the delivery of applications and web services to the maximum extent feasible.

All services to be provided may be routinely added or deleted throughout the period of performance of this contract (See Clause H-8) as long as the total number of applications and websites to be provided falls within the parameters set forth in Table J-1-1 below:

Table J-1-1
Applications and Websites Parameters

<i>Category</i>	<i>Category Description</i>	<i>Number of Applications/Websites</i>
1	<i>MSFC-wide application service or web site, critical or highly visible or complex application/web service.</i>	<i>36 – 50</i>
2	<i>Medium scale application service or web site, less complex, with medium criticality</i>	<i>55-95</i>
3	<i>Administrative and support application service/web site, or small user community</i>	<i>155-245</i>

The contractor shall provide Applications and Web Services Reports in accordance with DRD 1292MA-008.

6.1 Center Business and Administrative Application and Web Services

The contractor shall provide application and web services for the Center’s Business and Administrative organizations including the Office of the Center Director and staff offices of Procurement, Chief Financial Officer, Safety and Mission Assurance, Equal Opportunity, Chief Counsel, the Office of the Chief Information Officer, the Office of Human Capital Management (OHCM), Office of Strategic Analysis and Communications (OSAC), and Office of Center Operations.

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Examples of applications services the contractor shall provide to the Center Director and staff offices are the Director's Office support, the Centerwide Action Item Tracking System (CAITS), CFO core applications support, the electronic MSFC Resources Planning Tool (eMRPT), and Corrective Action System (CAS). Examples of web sites developed for these organizations include internal sites for center staff notes and center events, presentations and charts for Center executives, equal employment opportunity outreach, export control and safety information.

The contractor shall provide applications services to the Office of the Chief Information Officer such as: the Problem Management and Dispatch system (PMDS); Management Information Warehouse (MIW); Service Request System (SRS) and the Marshall Asset Management System (MAMS).

The contractor shall provide applications services to the Office of Human Capital Management (OHCM) such as the MSFC Personnel Information System (MPIS), and MSFC Staffing Plan System.

Examples of applications services that the Contractor shall provide to the Office of Center Operations include: the Computerized Maintenance Management System (CMMS)); and NASA Supply Management System (NSMS) MSFC site unique support.

The contractor shall provide applications services to the Office of Strategic Analysis Communications to include: Program electronic Project Online Risk Tool (ePORT).

Examples of web sites developed for these organizations include internal, external, and customer focused sites as well as, highly-specialized educational sites; Center historical sites; and sites specifically designed for news media relations.

6.2 Center Science and Engineering Application and Web Services

The contractor shall provide applications and web services to support MSFC's science and engineering organizations that include, but are not limited to, the Engineering Directorate, Space Shuttle Propulsion Office, Ares Projects Office, and Science and Mission Systems Office.

Examples of these applications and services provided to these organizations are NASA Structural Analysis (NASTRAN) support, Structural Load Test Measurement Acquisition System (SLTMAS), Engineering Technology Development Office Database support, Antenna Range Data Collection, Materials and Processes Technical Information System (MAPTIS), Electromagnetic Compatibility (EMC) support, Global Reference Atmospheric Model (GRAM) support, NASA Standards support, Configuration Management, Advanced Concepts support, Applications Administration, Dynamic Data Analyzer production support, National Space Science and Technology Center (NSSTC) support, Microgravity applications and the Integrated Engineering System (IES)

Examples of web sites developed for these organizations include internal, external and customer focused site for Engineering Directorate and Science and Mission Systems Office; the Discovery and New Frontier External Website; Environmental Control and Life Support System; Multi-Purpose Logistics Module Website; and the Radiation Hardened Electronics for Space Environments.

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6.3 RESERVED

6.4 Documentation Repository

The contractor shall provide documentation repository services required to meet customer requirements. These services shall include operation/maintenance of existing processes, development or acquisition, and implementation of enhancements. In providing these services, the contractor shall:

- a. Develop, provide, enhance, and maintain content management, web services, and associated workflow applications for MSFC Offices and Directorates. Examples of Repository-supported applications and web services include the Documentum-based Repository Electronic Documentation Management System (EDMS), and the following custom web applications within the EDMS environment: the MSFC Directives Master List, MSFC Directives Review Process (a workflow application), MSFC Forms Master List, MSFC Facilities Documents web page, NASA Competency Center Document Library, and the MSFC Electronic Records Staging Area (ERSA).
- b. Provide systems integration, application development, and electronic records management support between the Repository Electronic Documentation Management System (EDMS) and designated NASA engineering data and knowledge management systems. Examples of NASA systems that are to be integrated with the Repository EDMS include: the MSFC Integrated Engineering Capability, Design and Data Management System (IEC DDMS), Marshall Engineering Knowledge Management System (ME KM), and the NASA Technical Standards System.
- c. Provide application development, maintenance, and enhancement of custom databases to support MSFC technical documentation, knowledge management, and records management requirements. Examples of existing custom databases that are to be supported and maintained include: the MSFC Records Management Oracle database, and the Documentation Distribution Requirements List (DDRL) Oracle database.
- d. Provide technical expertise and application administration for all software required including Documentum.
- e. Receive, manage, store, and distribute officially released engineering drawings, associated technical documentation, and standardization documentation.
- f. Transition from paper-based to integrated electronic documentation management, including receiving, indexing, storing, distributing, and appropriate archiving
- g. Maintain proprietary, restricted-access and export control document files in accordance with relevant MSFC and NASA Directives and related regulations and guidelines.
- h. Maintain and transition legacy master microfilm aperture card file and microfiche files.
- i. 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.
- j. Maintain the MSFC Records Staging Area (RSA).
- k. Develop and maintain the Marshall Technical Report Server (MTRS).

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7.0 Computing Services

The contractor shall provide computer systems, virtual machines and environments, distributed servers and peripheral services for existing/established and future systems to support the application services described in paragraph 6.0, as well as other MSFC specific administrative, business, engineering and scientific applications which may reside outside the scope of paragraph 6.0. The contractor shall support of the current computing, storage and backup infrastructure for the NEACC lines of business. These applications execute on servers as well as standard desktop/laptop computers. System locations shall include, but not limited to, MSFC Building 4663, the National Space Science and Technology Center (NSSTC) located on Bradford Drive in Huntsville, AL, and various laboratories and server rooms across the MSFC campus. These distributed elements of the infrastructure primarily support the NEACC ICAM (Identity, Credentials and Account Management) line of business. The contractor shall apply paragraph 7.0 requirements for MSFC managed systems associated with the Michoud Assembly Facility (MAF). The contractor shall be required to perform short term, temporary work at the MAF facility.

A simplified approach to the MSFC Computing Services (MCS) scope of work is the DABO model, which is defined as Design, Acquire, Build, and Operate. In order to satisfy this model's requirements, the contractor shall provide engineering, design, development, acquisition, build, integration, implementation, system testing, operations support, event management, systems administration, database 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 (per DRD 1292MA-002).

During the period of performance of this contract the number and types of managed systems and items of hardware to be maintained may be routinely added or deleted. These changes are 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 computing systems to be managed is not less than 500 and not greater than 2,000 and the total number of hardware items to be maintained is not less than 4,000 and not greater than 15,000 (See Clause H.8).

This work shall be integrated with the service offerings that emerge as part of the NASA Enterprise Data Center (NEDC) and NASA Integrated Communications Services (NICS) acquisition. The MITS Contractor will serve as a front-line integrator and manage the utilization and business administration functions of acquired NEDC and NICS service offerings as appropriate. These services shall include, but are not limited to, Data Center housing and WAN/LAN network connectivity.

The contractor shall maintain, support and utilize the existing Remedy system for managing the work flow for system issue resolution, system enhancements, and new project implementations. The contractor shall maintain, support and utilize the existing Remedy system for developing and delivering cost estimates.

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The nominal support requirement for this service is normal duty hours, Monday through Friday, and performing remote monitoring with on-call support at all other times. Additional support shall be required during major events, which includes, but is not limited to system issues, and is based on scheduled customer requirements. This additional support will result in after hours, weekend, or holiday work.

7.1 Engineering Support

The contractor shall provide systems engineering and sustaining engineering support functions for existing/established and future systems. A system typically includes the combination of hardware equipment and systems software to support application requirements. Systems software includes operating systems, compilers, database management 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:

- a. Conform to the MSFC Enterprise Architecture Model.
- b. Maintain and update customer requirements in accordance with DRD 1292MA-002.
- c. Perform, in accordance with DRD 1292MA-002 for business cases and trade studies to maintain, balance, and optimize requirements allocations across subsystems.
- d. Perform system performance studies, recommending appropriate changes to eliminate potential system bottlenecks, resources conflicts and system overloads in accordance with DRD 1292-MA-002.
- e. Isolate problems in systems and execute proper resolution, including status reports, and documenting of changes in accordance with DRD 1292MA-002.
- f. Provide capacity analysis and planning recommendations based on analysis and changes in requirements and technology in accordance with DRD 1292MA-002.
- g. Provide hardware and systems software enhancements to meet customers' requirements in response to changing workloads and technologies.
- h. Provide statuses of work performed as requested.

7.1.1 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 that shall include collecting and documenting customer (including written buyoff) or system requirements in accordance with DRD 1292MA-002.
- b. Analyze the defined requirements ensuring that functionality, reliability, availability, maintainability, security, affordability, and policies and procedures are addressed. Perform
- c. systems engineering trade studies to optimize requirements allocations across subsystems in accordance with DRD 1292MA-002.
- d. Develop and document designs consistent with generally accepted engineering guidelines and practices.

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- e. Electronically store, backup, update and maintain a library of all approved engineering drawings and designs.
- f. Maximize commonality and the use of COTS components.
- g. Coordinate external interface designs.
- h. Conduct design reviews.
- i. Develop engineering prototype hardware and software components, subsystems, and systems to verify design and certify requirements.
- j. Deliver multiple design options based on cost, feasibility and maintainability in accordance with DRD 1292MA-002.
- k. Develop and deliver cost estimates.
- l. Acquire, procure, fabricate, assemble, and modify components, systems and subsystems.
- m. Provide statuses of work performed as requested.
- n. Support partnerships with industry, academia, and government agencies to accelerate and/or assist in the deliverance of customer requirements and deadlines.

7.1.2 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 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.
- b. Ensure customer-established functional requirements are met.
- c. Ensure conformance with the applicable federal standards.
- d. Ensure interoperability with existing systems.
- e. Ensure design concepts are not inadvertently 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.
- h. Provide statuses of work performed as requested.

7.1.3 Implementation

The contractor shall manage and provide the installation, integration of hardware, systems software, services and applications software components 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
- e. .
- f. Fully manage the implementation to operational process.
- g. Provide statuses of work performed as requested.

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7.1.4 Installation

In performance of this function, the contractor shall:

- a. Install the components into a fully operational configuration to meet the 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. Ensure property control requirements (e.g., identification tags and stickers) are met (as defined in the approved Government Property Management Plan, which is prepared in accordance with DRD 1292LS-001).
- e. Provide statuses of work performed as requested.

7.1.5 Assessment and Acceptance Testing

In performance of this function, 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.
- c. Provide statuses of work performed as requested.

7.2 Operations

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

- a. Adhere to a standard and approved operations model.
- b. Provide and maintain event management functions.
- c. Monitor System and sub-system efficiency and perform troubleshooting and tuning of systems, subsystems, components, peripherals, and interfaces.
- d. Provide Configuration Management in accordance with DRD 1292CM-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, as well as updated records of these activities in accordance with DRD 1292MA-002.
- g. Provide statuses of work performed as requested.

7.3 System Administration

The contractor shall perform system administration functions for existing/established and future systems. Responsibilities shall include the following:

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- a. Provide and maintain operating systems, database management systems, compilers, 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, and print production and dissemination.
- c. Provide program and data security, scheduling, and quality control.
- d. Provide security support as required by Paragraph 3.0, in particular, adhering to new security bulletins and installation of patches to fix known vulnerabilities as well as working within restrictions involving firewalls and other security-related constructs, maintaining compliance with NASA Incident Response Center (NASIRC) bulletins, utilizing Secure Shell for host authentication, user authentication, and encryption, and the use of Transmission Control Protocol/Internet Protocol (TCP/IP) wrappers and System monitoring for anomalies and security break-in attempts.
- e. Provide account management documentation of users to include: addition and deletion of user ID's, disk quotas, accounting and access control, utilization reports, consultation on advancing technologies, video and imaging support and data visualization in accordance with DRD 1292MA-002.
- f. Provide risk analysis and management that shall include continual identification and assessment of technical, schedule, cost, and organizational risks involved with the operation of systems in accordance with DRD 1292MA-003.
- g. Provide statuses of work performed as requested.

7.4 Database Administration

The contractor shall perform database administration functions for existing/established and future systems which includes but is not limited to analyzing, planning, installing, testing, implementing, maintaining, tuning, and managing databases. The contractor shall also provide statuses of worked performed as requested.

7.5 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 customer 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.
- d. Provide statuses of work performed as requested.

7.6 Hardware and Systems Software Maintenance

The contractor shall be responsible for hardware and systems software maintenance which utilizes a customer funded agreement between the customer and the contractor. At NASA's discretion and

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timeline, the contractor shall be required to develop, implement and maintain a more cost effective method for this work.

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. Prepare, implement, and maintain the Operability/Maintainability Plan in accordance with DRD 1292RM-001.
- b. Utilize existing Computing and Communications Asset Information Management System (CCAIMS) for tracking and logging operational failures, incidents, discrepancies, problem disposition and resolution, maintenance and repair activities, all in accordance with DRD 1292MA-008.
- c. Prepare and deliver status reports providing information on outages, such as component involved, period of downtime, and corrective actions in accordance with DRD 1292MA-008.
- d. Compile and maintain a list of key contacts responsible for coordinating and conducting the required hardware and systems software maintenance functions in accordance with DRD 1292MA-002.
- e. Maintain warranty protection and conditions for equipment in warranty.
- f. Maintain vendor subscriptions describing and providing updates and enhancements.
- g. Maintain a complete, up-to-date, and accurate list of spare parts and related material necessary to maintain the equipment in accordance with DRD 1292MA-002.
- h. Ensure availability of parts for both maintenance and production functions.
- i. 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 1292MA-002.
- j. Maintain a working relationship with vendors or other NASA Centers necessary to obtain required items or maintenance in a timely manner.
- k. Maintain up-to-date vendor documentation for all systems in accordance with DRD 1292MA-002.
- l. Coordinate maintenance activities with customers, other service providers, and other contractors.
- m. Maintain a complete, up-to-date, and accurate list of systems software licenses.

7.6.1 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 performed on a scheduled basis, normally during the Principle Periods of Maintenance (PPM) defined for each system in the Operability/Maintainability Plan in accordance with DRD 1292RM-001.

- a. In performing PM on hardware equipment, the contractor shall:

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1. Develop PM schedules that minimize disruption to customer operations. Provide PM schedules in accordance with DRD 1292RM-001
 2. .
 3. Perform adjustments, cleaning, lubrication, and replacement of parts as specified according to published maintenance procedures.
 4. Install latest releases of Field Change Orders (FCO's) 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 1292MA-002.
 3. Evaluate vendor-supplied updates or patches for applicability.
 4. Implement system software releases.

7.6.2 Remedial Maintenance (RM)

The contractor shall perform RM, defined as that maintenance performed which results from equipment and software failure. It 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 to meet the 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 operational procedures in the Operability/Maintainability Plan in accordance with DRD 1292RM-001.
- d. Ensure that the maintenance tools, spares, procedures, skills, and response times are adequate to meet the requirements of the approved Operability/Maintainability Plan in accordance with DRD 1292RM-001.

7.7 Security Support

In accordance with Paragraph 2.6 requirements, the contractor shall develop, document, maintain, and manage operational and technical IT security policies, plans, procedures, and controls for all systems. For each of these services, the contractor shall integrate the IT security policies, plans, procedures, and control measures into their full life cycle, and shall test and review these policies, plans, procedures, and controls for adequacy and compliance as approved by NASA.

7.8 Configuration Management and Control

The contractor shall prepare, implement, and maintain a Configuration Management Plan 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 in accordance with DRD 1292CM-001. The contractor shall maintain as-implemented systems configuration information to include, but is not limited to, vendor, hardware model numbers, software revision levels, user interface details, location and customer.

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8.0 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 & Interactive Multimedia, Graphics & Publication, Photographic Services, Reproduction, Television & Streaming, and Special Events Administration and Support Services. The contractor shall provide each service in accordance with applicable laws, regulations, NASA and MSFC regulatory guidelines.

The contractor shall research and document emerging technologies in the performance of all AVIS services to utilize these technologies as economically feasible. The contractor shall investigate and suggest new process improvements in the AVIS area.

8.1 Animation and Interactive Multimedia Services

The contractor shall create, develop and distribute animations, presentations, other multimedia products distributed on CD-ROM or DVD to MSFC customers, contractors and research partners in industry and academia, to government leaders or 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 can consist of: project outline, working script, storyboard, shooting plan and shooting schedule.
- b. Production work deliverables 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, creating the wire frame animation and/or the animatic.
- c. Post Production work 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, and reviewing the dailies with the customer and making the necessary adjustments.

8.2 Graphics and Publication

The contractor shall provide labor, material, equipment, management, and other support for MSFC graphics and publications services and products in a primarily Macintosh® environment with some Windows® systems. The contractor shall provide services and products adhering to the "NASA Style Guide" located at <http://communications.nasa.gov/portal/site/osc>.

8.2.1 Graphics and Publication Services

The contractor shall create, design, layout, illustrate, edit, write, proof, and produce the following type products (but not limited to): publications and presentations for posting to the web or NASA portal; 2-D and 3-D animation for various applications such as web sites, input into video, and multimedia 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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8.2.2 Proposal Services

The contractor shall provide Proposal Publications formatted according to required specifications for each NASA Research Announcement (NRA), Announcement of Opportunity (AO), or other calls for proposals in a variety of deliverable media. The contractor shall provide compliance matrixes, templates and boilerplates, configuration management, editing, formatting, illustrations, charts, graphs, tables, layouts, production scheduling, proofreading, and writing for proposals to support MSFC submissions on announcements.

8.2.3 Scientific and Technical Information (STI)

The contractor shall provide Scientific and Technical Information (STI) Publications in a variety of media and formats such as but not limited to: Portable Document Format (PDF), CD-ROM, interactive CD-ROM/DVD, and printed manuscripts.

The contractor shall provide NASA series reports (Technical Publications, Technical Memorandums, Contractor Reports, and Conference Publications) and miscellaneous publications (journal articles). The subject matter of the NASA series reports and miscellaneous publications will include all areas of research and development.

The contractor shall be responsible for: receiving technical manuscripts from authors; determining the correct report series; determining if the author package is complete to include a completed Standard Form (SF) 298, NASA Form (NF) 1676, and other pertinent information; preparing work orders; formatting, editing, and preparing manuscripts; notifying the author for manuscript reviews; delivering final draft and NF 1676 to the Technical Publications Office for approval and NASA number assignment; and delivering final product to the author in a variety of media such as a limited amount of printed copies, PDF files, CD-ROMs, or interactive CD-ROM/DVD.

The contractor shall deliver one printed copy of each report and PDF to the Technical Publications Office for placement on the Marshall Technical Report Server (MTRS).

8.2.4 Computer Analyst Support

The contractor shall provide computer analyst support in a primarily Macintosh® environment with some Windows® systems, and associated peripherals, to perform the following functions (but not limited to):

- a. Maintain all computer stations and peripherals in accordance to current NASA and MSFC Security regulations; including an inventory database of all computer and non-computer equipment and verify accurate information in NASA/MSFC-provided databases;
- b. Maintain software inventory and database; monitor current trends in technology and MSFC capabilities;
- c. Provide research for all non-NASA Desktop standard provided software and plug-ins with emphasis on specialized Graphics and Publication software;

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- d. Coordinate and assist with operating system upgrades/updates by developing unique graphics “system loads” to provide all graphics computers with uniform systems and performing the installations;
- e. Research and recommend hardware and software for computer updates and replacements

- f. Provide research and education on font management ensuring compatible fonts across all computers;
- g. Provide real-time troubleshooting for all computer systems and interface with NASA Standard Desktop Helpdesk and technicians;
- h. Develop best practices with current operating systems and specialized software to maintain consistency and compatibility across all computers and associated peripherals, including large-format graphic printers.

8.3 Photographic Services

The contractor shall provide still photographic services for Still Documentation, Passport/Visa photos, Official Portraits, Special Events Photography, Photographic Laboratory Services, and Conference Room Support, that includes documentation of lab or field-testing to official NASA personnel photos and high-quality digital images for distribution to news media, and public outreach. The contractor shall be responsible for the operation of MSFC’s 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.

8.3.1 Still Photography

The contractor shall provide still photographic documentation of Centerwide events that would be considered significant or historical. Contractor still photographers shall document technology research elements, significant testing milestones, and hardware studies conducted at the Center. The contractor shall provide photographic distribution in support of MSFC programs and projects. The contractor shall operate and maintain the existing photographic studio.

8.3.2 Photographic Laboratory

The contractor shall provide a full service photographic production laboratory. The contractor shall provide digital photographic production including image enhancement, printing, and electronic distribution.

8.3.3 RESERVED

8.3.3.1 RESERVED

8.3.3.2 RESERVED

8.3.4 Marshall Image Exchange (MiX) and Photographic Archive

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The contractor shall maintain still photographic libraries and archives on Center. The contractor shall scan images for displaying on the current MiX website in accordance with NASA Image Exchange (NiX) guidelines. The contractor shall research and develop captions for images, including interfacing with NASA/MSFC program/project personnel. The contractor shall work with NASA personnel in the transition from MiX to the NASA Images Archive.

8.3.5 Conference Room Support

The contractor shall provide conference room support including installation and maintenance of existing conference room capabilities, such as ceiling-mounted projectors, polycoms, televisions and screens. The contractor shall provide design, development and implementation for NASA-approved requirements.

The Contractor shall schedule the conference facilities located in Morris Auditorium, P110, in building 4200 and Contracting Officer's Technical Representative (COTR) designated video teleconferencing rooms. The contractor shall operate these facilities.

8.3.6 Audio Video Support Services

The contractor shall maintain the hardware required for the Marshall Cable Television System. The contractor shall receive downlinks during shuttle missions as a backup to the main receiving system as well as other downlinks to support MSFC and the Agency. The contractor shall provide and maintain all MSFC and MAF Audio Video installations such as televisions, screens, projectors, and polycoms.

8.4 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 Public Law 102-392 and Section 207, the Joint Committee on Printing (JCP) Printing and Binding Regulations, NPD 1490.1, *NASA Printing, Duplicating, and Copy Management* and MPR 1490.1, *Printing, Reproduction, and Self-Service Copying Services*.

8.4.1 In-house Duplicating Services

The contractor shall operate and manage an in-house duplicating facility, located in Building 4200, Room G34, and large-format engineering document reproduction, located in Bldg. 4491.

The services provided shall include (but not limited to): Black and White (B&W) duplication of (one or two-sided) standard-size documents (up to 11"x17"); large-format documents (simplex only) up to J-size; and color duplication of standard documents up to 12" x 18" (one or two-sided). The contractor shall 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. The contractor shall

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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 shall on occasion be required to provide "expedited service" that requires overtime.

The contractor shall receive, process, and duplicate from paper originals or electronic files submitted by the customer from various sources and/or media. The contractor shall 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 evaluate and recommend new technology hardware and/or software for replacing existing equipment or software. The contractor shall acquire, manage installation, and implement new processes or software as needed.

The contractor shall collect production metrics within the service request system and shall maintain service request records per the MSFC Printing Office Records Retention Plan. The contractor shall provide various production reports monthly, quarterly, and annually in accordance with DRD 1292MA-006.

8.4.2 Commercial Printing Procurement

The contractor shall have 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 Marshall Space Flight Center. This procurement process is mandated and provided in accordance with Title 44 of the U.S. Code and Public Law 102-392, October 6, 1992 (amended by Public Law 103-283, July 22, 1994), Section 207 and the NPD 1490.1.

The contractor shall provide printing procurement services to the MSFC Printing Office, Building 4200, room G32A. The contractor shall procure posters, brochures, tri-fold pamphlets, periodicals, bookmarks, tags, forms, decals, lithographs, coasters, magnets, poly-bags, letterhead, CD/DVD mastering and replication, and business cards for MSFC customers. The contractor shall 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. The contractor shall report quality defects and manage corrective action.

The contractor shall utilize all procurement vehicles available through the GPO to include one-time solicitations, MSFC and NASA Headquarters term contracts, and the GPO Simplified Purchase Acquisition (SPA) program. The contractor shall assist the MSFC Printing Office in managing these contracts through Atlanta Regional GPO and Washington GPO. The contractor shall have expert knowledge of terms and conditions of printing contracts. The contractor shall assist the MSFC Printing Office in collaborating with other NASA centers as a participant in the "NASA Print Rider" program. The contractor shall understand and procure products within MSFC funding guidelines. The contractor shall manage office records and databases per the MSFC Printing Office Records Retention Plan. The contractor shall collect production metrics within the service request system. The contractor shall provide various production reports monthly, quarterly, and annually per DRD 1292MA-006.

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8.4.3 RESERVED

8.5 Television and Video Services

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. Specifically, the contractor shall:

- a. Operate and maintain the existing studio.
- b. Produce, distribute, televise, transmit, and record live presentations, ceremonies, programs and other special events.
- c. Prepare and distribute live and recorded broadcast quality productions.
- d. Plan, develop, script-write, film and edit a variety of broadcast quality video projects.
- e. Record and archive in support of MSFC research and development testing.
- f. Provide content for closed circuit television (CCTV), DesktopTV, and Podcasts.
- g. Receive and distribute NASA TV content.
- h. Provide select MSFC videos for distribution on NASA TV.
- i. Operate and maintain the equipment in the Building 4207 television department.
- j. Operate a multi-format recording and duplication facility including but not limited to VHS, Beta SP, DVCAM, DVD, CD, DVC Pro, SVHS, DVC ProHD, and HDCAM.
- k. Operate and maintain full broadcast audio production facility.
- l. Complete the migration of production and distribution processes to HDTV.
- m. 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.
- n. Implement and maintain a digital archive.
- o. Integrate content between AVIS PWS paragraph 8.0 elements; distributes content to other AVIS PWS elements.
- p. Assist the Agency's DTV Working group as needed.

8.6 Streaming Services

The contractor shall 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. The contractor shall provide this streaming service using NASA approved software tools and formats.

8.7 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. This support includes administration of the services for a requested event in which one or more services from PWS paragraph 8.0 shall be performed.

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8.7.1 Special Event Administration

The contractor shall coordinate between the customer and service providers to identify specific details needed to support the event, this includes: finalizing requirements and preparing an event requirements document; and preparing and delivering a cost estimate to Government for distribution to requesting customer for approval.

The contractor shall 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)*, will be followed.

8.7.2 Special Event Support

The contractor shall provide Audio Video support for all MSFC events by providing the sound system, podium, microphone, flags, projectors, large screens, and other associated equipment. The contractor shall be prepared to fully support overlapping events, if requested.

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ACRONYMS AND ABBREVIATIONS

A&WS	Applications and Web Services
ACA	Associate Contract Agreement
ACES	Agency Consolidated End-User Services
ACO	Administrative Contracting Officer
AIM	Applications Inventory Module
AO	Announcement of Opportunity
AQL	Acceptable Quality Level
AR	Acceptance Review
ASQ	American Society for Quality
AV	Audio/Visual
AVIS	Audio Visual Information Services
AVS	Audio Video Coding Standard
B&W	Black and White
BICE	Bureau of Immigration and Customs Enforcement
BLS	Bureau of Labor Statistics
BOE	Basis of Estimate
BY	Budget Year
C&A	Certification and Accreditation
CAITS	Center-wide Action Item Tracking System
CAO	Certification & Accreditation Official
CAOT	Cognizant Audit Office Template
CAS	Cost Accounting Standards
CAS	Corrective Action System
CASI	Center for Aerospace Information
CBA	Collective Bargaining Agreement
CCAIMS	Computing and Communications Asset Information Management System
CCS	Center Chief of Security
CCTV	Closed Circuit Television
CD	Compact Disk
CDC	Central Distribution Center
CDL	Commercial Driver's Licenses
CDR	Critical Design Review
CD-ROM	Compact Disk – Read Only Memory
CECSR	Contractor's Employee Compensation System Review
CERTRAK	MSFC Certification Database
CESR	Contractor's Estimating System Review
CF	Customer Feedback

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ACRONYMS AND ABBREVIATIONS

CFC	Combined Federal Campaign
CFR	Code of Federal Regulations
CIO	Chief Information Officer
CMMI	Capability Maturity Model Integration
CMMS	Computerized Maintenance Management System
CMP	Configuration Management Plan
CMR	Communication Material Review
CO	Contracting Officer
COM	Cost of Money
COOP	Continuity Of Operations Plan
COSS	Center Operations Support Services
COTR	Contracting Officer's Technical Representative
COTS	Commercial Off The Shelf
CPE	Center Premise Equipment
CPR	Core Process Requirement
CPSR	Contractor's Purchasing System Review
CRM	Customer Relationship Management
CRR	Communications Restoration and Recovery
CSO	Corporate Security Officer
CUB	Compliance and Usability Board
DA	Data Administration
DAA	Document Availability Authorization
DABO	Design, Acquire, Build and Operate
DAR	Data at Rest
DCAA	Defense Contract Audit Agency
DCB	Directives Control Board
DCL	Document Change Log
DDRL	Documentation Distribution Requirements List
DELMIA	Digital Enterprise Lean Manufacturing Interactive Application
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Service
DoD	Department of Defense
DOL	Department of Labor
DOT	Department of Transportation
DPD	Data Procurement Document
DR	Disaster Recovery
DR	Decommissioning Review
DRD	Data Requirement Document

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ACRONYMS AND ABBREVIATIONS

DRL	Data Requirements List
DRR	Data Communications and Recovery
DTIC	Defense Technical Information Center
DTV	Digital Television
DVC	Digital Video Camera
DVCAM	Digital Video Camera
DVD	Digital Video Disc
DVR	Digital Video Recorders
EA	Enterprise Architecture
EACC	Enterprise Application Competency Center
EAR	Export Administration Regulations
EAST	Enterprise Applications Service Technologies
ECP	Engineering Change Proposal
EDC	Engineering Design Challenge
EDMS	Repository Electronic Documentation Management System
EDP	Electronic Data Processing
EIT	Electronic and Information Technology
EM	Electromagnetic
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
eMRPT	electronic MSFC Resources Planning Tool
EMS	Electronic Meeting System
EPACS	Enterprise Physical Access Control System
EPM	Excel Pricing Model
ePORT	electronic Project Online Risk Tool
ERC	Educator Resource Center
ERSA	Electronic Records Staging Area
ESS	Electronic Security System
ET	External Tank
ETPS	Electronic Test Preparation Sheet
EWS	Emergency Warning System
FAR	Federal Acquisition Regulation
FAS	Financial Accounting Standard
FASB	Financial Accounting Standard Board
FCO	Field Change Order
FEAC	Federated Enterprise Architecture Certification
FEMA	Federal Emergency Management Agency
FGE	Federal Grade Equivalency

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ACRONYMS AND ABBREVIATIONS

FIPS	Federal Information Processing Standards Publication
FISMA	Federal Information Security Management Act
FMD	Financial Management Division
FPRA	Forward Pricing Rate Agreement
FSO	Facility Security Officer
FSS	Fire Surveillance System
FTS	Federal Telecommunications System
GAO	Government Accountability Office
GBC	General Binding Corporation
GPO	Government Printing Office
GRAM	Global Reference Atmospheric Model
HOSC	Huntsville Operations Support Center
HPGL	Hewlett-Packard Graphic Language
HSPD-12	Homeland Security Presidential Directive-12
HVAC	Heating, Ventilation, Air Conditioning
ICAM	Identity Credential Access Management
ICD	Interface Control Document
ID	Identification
IDMS	Identity Management System
IEC DDMS	Integrated Engineering Capability, Design and Data Management System
IEM	Integrated Enterprise Management
IEMP	Integrated Enterprise Management Project
IES	Integrated Engineering System
IFR	Infrastructure Review
IPAM	IP Address Management
IPO	Industrial Property Officer
IRIS	Incident Reporting Information System
IRT	Incident Response Team
ISCB	Center Information Systems Change Board
ISO	International Organization for Standard
IT	Information Technology
ITAR	International Traffic and Arms Regulations
ITEP/IM	IT Evaluation Planning and Innovation Management
ITPM	IT Portfolio Management
ITSC	IT Security Center
ITSM	Information Technology Security Manager
JCP	Joint Committee on Printing
JD/Q	Job Description/Qualification

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ACRONYMS AND ABBREVIATIONS

LAN	Local Area Network
LTC	Lost Time Case
MAF	Michoud Assembly Facility
MAMS	Marshall Asset Management System
MAPTIS	Materials and Processes Technical Information System
MCC	Mobile Command Center
MCDAS	Measurement and Controls Data Acquisition System
MCR	Management Community Resource
MCS	MSFC/Marshall Computing Services
MEKM	Marshall Engineering Knowledge Management System
MEOV	Mobile Emergency Operations Vehicle
MFD	Multifunctional Device
MICS	Management Information and Control System
MIT	Marshall Information Technology Services
MIW	Management Information Warehouse
MiX	Marshall Image Exchange
MNI	MSFC NAMS Integration
MOA	Memorandums of Agreement
MORR	Marshall Operational Readiness Review
MOU	Memoranda of Understanding
MPIS	Marshall Personnel Information System
MRR	Mission Readiness Review
MSFC	Marshall Space Flight Center
MSFOC	Manufacturing Support and Facility Operations Contract
MSR	Mission Support Room
MTRS	Marshall Technical Report Server
NAC	National Agency Check
NACI	National Agency Check with Inquiries
NAICS	North American Industry Classification System
NAIS	NASA Acquisition Internet Service
NAMS	NASA Account Management System
NAR	Needs Assessment Reports
NARA	National Archives and Records Administration
NASA	National Aeronautics and Space Administration
NASIRC	NASA Incident Response Center
NASTRAN	NASA Structural Analysis
NCIC	National Crime Information Center
NDC	NASA Data Center

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ACRONYMS AND ABBREVIATIONS

NEACC	NASA Enterprise Applications Competency Center
NEDC	NASA Enterprise Data Center
NESS	NASA Electronic Submission System
NETWORK	GSA Networks Contract
NF	NASA Form
NFNMS	NASA Foreign National Management System
NFS	NASA FAR Supplement
NICS	NASA Integrated Communications Services
NID	NASA Interim Directive
NISC	NASA Information Support Center
NISN	NASA Integrated Services Network
NISPOM	National Industrial Security Program Operating Manual
NIST	National Institute of Standards and Technology
NiX	NASA Image Exchange
NLRB	Number of National Labor Relations Board
NOAA	National Oceanic & Atmospheric Administration
NODIS	NASA Online Directives Information System
NPD	NASA Procedure Directive
NRA	NASA Research Announcement
NRRS	NASA Records Retention Schedule
NSMS	NASA Supply Management System
NSSC	NASA Shared Services Center
NSSE	National Security Systems Enclave
NSSTC	National Space Science and Technology Center
NTSR	New Technology Summary Report
OATS	Outside Activity Tracking System
OCI	Organizational Conflict of Interest
OCIO	Office of Chief Information Officer
ODIN	Outsourcing Desktop Initiative
OHCM	Office of Human Capital Management
OMB	Office of Budget and Management
OPM	Offeror Pricing Model
OPM	Office of Personnel Management
OPX	Off-Premise Extensions
OS	Operating System
OSAC	Office of Strategic Analysis and Commutations
PABX	Private Automatic Branch Exchange
PACS	Physical Access Control System

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ACRONYMS AND ABBREVIATIONS

PAI	Privacy Act Information
PBX	Public Branch Exchange
PCI	Personal Identity Verification Card Issuance
PCR	Project Completion Review
PDF	Portable Document Format
PDR	Preliminary Design Review
PDWS	Procurement Data Warehouse System
PIV	Personal Identification Verification
PKI	Public Key Infrastructure
PL	PatchLink
PM	Preventative Maintenance
PM	Program Manager
PMC	Performance Measurement Criteria
PMDS	Problem Management and Dispatch System
PO	Purchase Order
POA&M	Plan of Actions & Milestones
POC	Point of Contact
POLARIS	Program/Project Online Library and Resource Information System
PPBE	Programming, Planning, Budgeting, Execution
PPE	Personal Protective Equipment
PPM	Principle Periods of Maintenance
PRI	Primary Rate Interface
ProHD	JVC Professional High Definition
PRS	Performance Requirements Summary
PSO	Protective Services Office
PSS	Physical Security Specialists
PWS	Performance Work Statement
QATAP	Quality Assurance Through Attributes Program
RAS	Remote Access Service
RF	Radio Frequency
RFI	RF Interference
RFP	Request for Proposal
RM	Remedial Maintenance
RMES	Retired Marshall Employee System
RMO	Resources Management Office
RMT	Risk Management Team
RSA	Records Staging Area
RT	Representative Task

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ACRONYMS AND ABBREVIATIONS

S&MA	Safety and Mission Assurance
SAIC	Science Applications International Corporation
SAN	Storage Area Network
SAT	Simplified Acquisition Threshold
SATERN	System for Administration, Training and Educational Resources
SBA	Small Business Administration
SBIR	Small Business Innovation Research
SBU	Sensitive but Unclassified
SCA	Service Contract Act
SCDT	SATERN Content Development Team
SCI	Sensitive Compartmented Information
SCR	System Concept Review
SCRS	Safety Concerns Reporting System
SDLC	Software Development Lifecycle
SEA	Special Events Administrator
SEB	Source Evaluation Board
SEF	Software Engineering Framework
SEI	Software Engineering Institute
SEMO	Supply and Equipment Management Officer
SEO	Systems Engineering and Operations
SESASS	Sustaining Engineering Support for Agency-wide Admin. Systems
SF	Standard Form
SHE	Safety, Health and Environmental
SHETrak	Safety, Health, and Environmental Finding Tracking System
SIM&S	System Integration/Modeling & Simulations, Inc.
SLA	Service Level Agreement
SLC	Standard Labor Classification
SLTMAS	Structural Load Test Measurement Acquisition System
SO	Service Orders
SOA	Service Oriented Architecture
SOC	Security Operations Center
SPA	Simplified Purchase Acquisition
SRR	System Requirements Review
SRS	Service Request System
SSA	Source Selection Authority
SSF	Integrated Space Station Freedom
SSN	Social Security Number
SSWP	Supervisors Safety Web Page

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ACRONYMS AND ABBREVIATIONS

STI	Scientific and Technical Information
TBD	To Be Determined
TBP	To Be Proposed
TCP	Total Compensation Plan
TCP/IP	Transmission Control Protocol/Internet Protocol
TM	Task Monitor
TRIR	Total Reportable Injury Rate
TRR	Test Readiness Review
UAH	University of Alabama in Huntsville
UCS	Utility Control System
UNITEs	Unified NASA Information Technology Services
USML	U.S. Munitions List
UXO	Unexploded Ordnance
VCRS	Video Conferencing Reservation System
VoIP	Voice over Internet Protocol
VoTS	Voice Teleconferencing System
WAN	Wide Area Network
WBS	Work Breakdown Structure
WDOL	Wage Determinations On-Line
WebTADS	Web Time and Attendance Distribution System
WYE	Work Year Equivalent