AGENCY CONSOLIDATED END-USER SERVICES (ACES)

ATTACHMENT I-1

PERFORMANCE WORK STATEMENT

October 8, 2010

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ADDENDUMS

1.0 AGENCY CONSOLIDATED END-USER SERVICES (ACES)

1.1 MISSION STATEMENT

Since its establishment, the National Aeronautics and Space Administration (NASA) (also referred to as the Government or the Agency) has continued to evolve as a result of changing missions and priorities. Similarly, NASA's Information Technology (IT) infrastructure is evolving toward a level of maturity that will allow it to successfully change NASA's existing IT environment into a seamless and truly integrated IT architecture. NASA recognizes that effectively and efficiently creating, researching, managing, preserving, protecting, and disseminating the information required to achieve the objectives of space exploration, as well as other NASA missions, is vital to mission success.

The nature of NASA's program implementation model requires extensive cross-Center collaboration which is vital to the planning, design, and development of mission-related capabilities and technology in the future. NASA, therefore, requires a seamless technical IT infrastructure to ensure interoperability both within programs and across Centers and facilities.

The ACES contract (hereafter referred to as "the Contract") will develop a long-term outsourcing arrangement with the commercial sector to provide and manage the vast majority of NASA's personal computing hardware, Agency standard software, mobile IT services, peripherals and accessories, associated end-user services, and supporting infrastructure.

NASA considers its end-user computing assets vital to its continuing success as the world leader in aeronautics, space exploration, and scientific research. NASA personnel use IT to support NASA's core business, scientific, research, and computational activities. It is imperative that the commercial sector deliver cost-effective IT services that meet NASA mission and program needs while achieving efficiency and high level customer satisfaction.

Within this framework, the task of the ACES Contractor (hereafter referred to as "the Contractor") is to provide, manage, secure, and maintain IT services that meet the requirements as defined in this Performance Work Statement (PWS) and the I^{3}P Cross Functional Performance Work Statement (CF PWS) (Addendum 1).

The Contractor shall: (a) install, operate, and maintain hardware, software, and services and (b) plan, design, develop or acquire, integrate, test, upgrade, and implement new systems or enhancements to existing systems for the following services:

  a. <u>Contract Management</u>: General contract management; financial management; service asset and configuration management; contract phase-in/implementation management; safety, health, and environmental management; quality assurance and management; IT Infrastructure Integration Program (I^{3}P) program integration; contract administration; technology infusion and transformation; records management; and Service Level Agreement (SLA) terms and conditions.
  b. <u>General Services</u>: Delivery of comprehensive, end-to-end computing services and back-office infrastructure support, including Tier 2/3 service desk support; Support Levels; ACES Product Catalog services; software right to use; technology refresh; consumables; performance metrics reporting tool; developmental test laboratory; temporary seats; support for telecommuters, travelers, and off-site end-users; return to service surcharge; wipe and load services; elevated user privileges; support for special events; Enhanced

Support Services; early seat refresh; data center services; software licensing continuation; other general services; Customer Relationship Management and outreach; response to information and audit requests; support for Federal initiatives; and software refresh portal.

c. <u>Base Services</u>: E-mail and collaborative calendaring services; Active Directory services; loaner pool management; print queue infrastructure management; security management, including IT security, Data At Rest services, physical security, emergency management, and emergency preparedness and response; software license management; Instant Messaging services; and two-factor user authentication token distribution.

d. <u>Seat Services</u>: Computing seats, Cellular seats, the Pager seat, Network Peripheral seats, and the Virtual Team Service (VTS) seat.

The Contract will be performed at the sites listed in Table 1.1-1, *ACES Performance Sites*. Additional performance sites may be identified throughout Contract execution.

Table 1.1-1. ACES Performance Sites

Ames Research Center (ARC)
Armstrong Flight Research Center (AFRC)
NASA Armstrong Building 703 (Palmdale, CA)
Glenn Research Center Main Campus (GRC)
GRC - Plumbrook Facility
Goddard Space Flight Center Main Campus (GSFC)
GSFC – Wallops Flight Facility (WFF)
GSFC - White Sands Complex (WSC)
GSFC - Independent Verification and Validation Facility (IV&V)
GSFC - Goddard Institute for Space Studies (GISS)
Headquarters Main Campus (HQ)
HQ – JPL NASA Management Office
Jet Propulsion Laboratory (JPL) (Multi-Functional Device (MFD) seats and VTS seats only)
Johnson Space Center Main Campus (JSC)
JSC - White Sands Test Facility (WSTF)
JSC - El Paso Forward Operating Location
JSC – White Sands Space Harbor
Kennedy Space Center Main Campus (KSC)
KSC – Vandenberg Air Force Base (VAFB)
KSC – Transoceanic Abort Landing (TAL) Sites
Langley Research Center (LaRC)
Marshall Space Flight Center Main Campus (MSFC)
MSFC - Michoud Assembly Facility (MAF)
MSFC - National Space Science & Technology Center (NSSTC)
NASA Shared Services Center (NSSC)
Stennis Space Center (SSC)

Hereafter throughout the RFP, "Center(s)" will refer to NASA Center(s) and associated facilities.

1.2 GOALS AND OBJECTIVES

To guide tactical decisions and planning now and in the future, the NASA Chief Information Officer (CIO) has established the following principles:

a. **MISSION ENABLING**: IT at NASA serves to enable NASA's mission.
b. **INTEGRATED**: NASA will implement IT that enables integration of business (mission) processes and information across organizational boundaries.
c. **EFFICIENT**: NASA will implement IT to achieve efficiencies and ensure that IT is efficiently implemented.
d. **SECURE**: NASA will implement and sustain secure IT solutions.

Using these four principles as guidance, NASA is pursuing a strategy intended to:

e. Clearly define that the CIO shall provide reliable and efficient IT infrastructure services.
f. Standardize and consolidate infrastructure to provide end-to-end visibility, improving security, reducing cost, and enabling collaboration.

In direct support of these key principles and strategy, the following goals and objectives are established for the Contract:

Goal 1: **Consolidate the provisioning of end-user services across all Centers using a single Agency solution**

Objectives:

a. Achieve operational efficiencies through standardized hardware and software solutions.
b. Improve service and end-user experience by providing standardized service delivery across all Centers.
c. Increase insight into NASA's IT assets.
d. Leverage economies of scale to obtain a lower overall cost on a per capita basis.

Goal 2: **Ensure NASA's mission is enabled by the Agency end-user solution**

Objectives:

a. Provide a sufficiently flexible approach to meet the diverse needs of NASA's mission.
b. Serve as a mission enabler by appropriately infusing emerging technology and transforming end-user service delivery as NASA's mission evolves.
c. Enable cross-Center collaboration.

Goal 3: **Improve NASA's IT security posture**

Objectives:

a. Become the single provider of IT Security solutions within the ACES scope for all end-user systems across the Agency.
b. Provide a standardized, coordinated, and rapid response to IT security issues.
c. Implement consistent IT security on services.

    d.   Secure systems in a manner that enables NASA's mission.

Goal 4: Improve the management of NASA's IT infrastructure

Objectives:

    a.   Provide a consolidated interface for end-user services in support of NASA IT Governance.
    b.   Operate and maintain the NASA enterprise end-user services for all users.
    c.   Align service delivery with Information Technology Infrastructure Library (ITIL® Version 3.0).
    d.   Improve support for Federal Government initiatives (e.g., greening and cloud computing)

Goal 5: Enable a mechanism for transformation of NASA's end-user services in support of emerging mission requirements

Objectives:

    a.   Enable infusion of new technologies across the Agency through partnership between the Government and the Contractor.
    b.   Assist end-users with the adoption of new technologies that enable NASA's mission while minimizing adverse impacts.
    c.   Infuse new technology while maintaining cost efficiencies.
    d.   Facilitate the Agency's end-user services transformation through application of Government and industry best practices.

1.3 CHARACTERISTICS OF SUCCESS

The following characteristics are representative indicators of successful attainment of the above Goals and Objectives:

    a.   Seamless integration between ACES operations and the other I^{3}P contracts is achieved.
    b.   ACES demonstrates an integrated, streamlined support of the Agency and Center governance model and processes.
    c.   Participation in ACES grows so that maximum participation is achieved.
    d.   ACES is routinely cited by Government and industry as a model for high quality of service and cost containment.
    e.   Demonstration of improved ACES services at a per capita decreased cost on an annual basis.
    f.   NASA mission organizations consistently seek out the Contractor to partner with in meeting their IT infrastructure service needs.
    g.   The ACES configuration control data is an authoritative source for configuration and asset management across the Agency because it is accurate and updated in a timely manner.
    h.   Repeated achievement of indicators reflecting a strong IT security posture in IT infrastructure services. Examples include:
        • Systems are consistently patched.
        • The number of IT security Incidents associated with ACES systems consistently meets the Agency metric.

- Results from external reviews (Office of Management and Budget (OMB)/General Services Administration (GSA) report cards, third-party audits, etc.) are consistently positive in the areas associated with ACES services.
- Seamless integration of ACES operations and the NASA Security Operations Center (SOC) is achieved.
- Certification and Accreditation is achieved on all ACES systems with effective management of near zero Plan of Action and Milestones (POA&M) items.
- A contract management structure exists that supports infusion of emerging technologies in ACES services, anticipates changing mission requirements, and implements robust and flexible change management.

i. Consistently high Customer Satisfaction with ACES services that enable end-users to meet mission requirements.

1.4 GOVERNMENT RETAINED AUTHORITIES

The Government will retain a set of key authorities that encompass the overall service strategy and service design related to end-user services. The Government will also retain authority for all demand management, governance, and approval functions associated with ACES.

General information about responsibilities of the ACES End User Services Office is provided in Addendum 1, *CF PWS*. At the NASA Office of the Chief Information Officer (NASA OCIO, hereafter known as the OCIO) level, the Service Executive for End-user Services will provide the overall project strategy for ACES. The ACES End User Services Office (EUSO) located at MSFC and led by the Government ACES End User Services Office Manager will be responsible for oversight of ACES operations. Management of the Contract will be carried out by the ACES Contracting Officer (CO) and ACES Contracting Officer's Representative (COR). In support of the ACES COR's responsibilities, ACES Center Subject Matter Experts (SMEs) may be appointed to provide local Center-level oversight if required.

Evolving Federal, Agency, and Center policies, standards, and regulations shall be accommodated in the Contractor's management, technical, and cost approach.

In support of the Government's retained authorities, the Contractor shall review proposed changes to such things as Agency and Center IT policies, architectures, standards, and procedures and recommend additions, modifications, and deletions as needed to ensure conformity with the Contract. The Contractor shall advise the Agency of any adverse impacts to stability, cost, architecture, interoperability, compatibility, or service and recommend mitigation strategies. The Contractor shall notify the EUSO Manager of any issues caused by proposed changes to Agency and Center IT policies, architectures, standards, and procedures during the informal or formal review cycles.

To assure maintenance of the NASA IT architectural configuration, the Contractor shall follow the process set forth in NASA Policy Directive (NPD) 2800.1*x*, *Managing Information Technology*, and associated NASA Procedural Requirements (NPRs), which are available in the NASA Online Directives Information System (NODIS). The Contractor shall bring recommendations for changes to the NASA IT architecture and standards to the attention of the EUSO Manager. The EUSO Manager is responsible for ensuring that the review and approval process is conducted in compliance with NPD 2800.1*x*. The Contractor shall support the EUSO Manager when presenting project issues and resolutions to the OCIO or other Agency organizations. This support shall include such things

as travel to meetings, video teleconferences, voice teleconferences, and the development of support documentation.

The Contractor shall ensure compliance with all relevant NASA standards and policies. The Contractor shall continuously assess the Government's operational needs in relation to all ACES services and actively participate in the informal and formal reviews of the NASA standards and policies. The Contractor shall provide advance notification of changes to the Government for review and approval prior to deployment of new technologies to the NASA end-user community.

All Contractor-developed processes and procedures necessary for the execution of Contract service delivery requirements and compliance with NASA standards and policies shall be provided to the Government upon request, subject to any limitations contained in FAR 52.227-14, *Rights in Data*.

The Contractor shall baseline the core components of ACES seats at the level identified in the most current version of NASA-STD-2805*x, Minimum Hardware Configurations,* or Addendum 3, *Minimum Hardware Requirements*, and shall not reduce the core components below the baseline for the remainder of the Contract. On subsequent NASA-STD-2805*x* or Addendum 3 revisions, if the Contractor enhances one or more of the core components, the enhancement shall become the new baseline for those components on the future revisions. (Note: The core components are defined as processor; random access memory (RAM); hard drive capacity; video card memory; optical drive; removable media capacity; monitor type, size, and resolution; and, if applicable, the device itself.)

Each Center local Configuration Control Board (CCB) will include a non-voting Contractor's representative. Functions of the local CCB include approving proposed changes to local architectures and standards to ensure consistency with Agency interoperability and compatibility standards.

2.0 CONTRACT MANAGEMENT

2.1 GENERAL CONTRACT MANAGEMENT

The Contractor shall devise an overall management approach and the activities necessary to perform the core functions required under the Contract, in accordance with Attachment I-2, *Data Procurement Document* (DPD), *Data Requirements Description* (DRD) MA-01, *Management Plan*.

2.2 FINANCIAL MANAGEMENT

The Contractor shall perform all business and financial functions necessary to fulfill the requirements of the Contract and integrate these functions across all areas of performance. The Contractor shall provide ongoing business analysis and respond to requests and inquiries from the Government relating to budget. In performing these functions, the Contractor shall:

a. Implement and maintain a financial management system that interfaces with the NASA Enterprise Service Request System (ESRS) and ACES Product Catalog (APC) and allows for invoice reconciliation.
b. Present monthly invoices in accordance with the invoicing clauses of the Contract. The monthly invoices shall include organizational codes as defined by the Agency and Center.
c. Provide documentation to the EUSO Manager that appropriate tax exemptions have been applied for as related to the applicable Centers and/or facilities.

d.   Provide financial and budget information maintained by the Contractor for use by the Government for budgeting purposes and business case analyses (e.g., Program, Planning, Budget and Execution, and OMB Exhibit 300).

e.   Employ an approach that allows invoicing to be customized for each Center. In addition, this approach shall provide the ability to share Work Breakdown Structures for invoice segregation by Centers carrying appropriate discounts, allowance, and billing methodology.

2.3 SERVICE ASSET AND CONFIGURATION MANAGEMENT

The Contractor shall devise an approach and the activities necessary to perform property management functions required under the Contract, in accordance with Attachment I-2, *DPD*, DRD MA-02, *Property Management Plan*. The Contractor shall perform service asset and configuration management functions, in accordance with NPD 4200.1*x*, *Equipment Management*, and NPR 4200.1*x*, *NASA Equipment Management Procedural Requirements*, in coordination with local NASA property management officials. The Contractor shall:

a.   Assume the current inventory of property listed in Attachment I-11, *List of Government Furnished Property*, and provide property management of these items.

b.   Utilize the NASA Plant, Property, and Equipment (PP&E) Web-based system N-PROP to track, manage, and maintain Government Furnished Property. (Note: The N-PROP application will not feed the Government-provided configuration management database (CMDB).)

c.   Identify excess and obsolete out-of-service Contractor-owned service assets and configuration items and perform data removal (i.e., sanitization) prior to excess, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-1), National Institute of Standards and Technology (NIST) Special Publication (SP) 800-88, *Guidelines for Media Sanitization*, and NASA IT Security Standard Operating Procedure (ITS-SOP) ITS-SOP-0035, *Digital Media Sanitization*, and initiate disposal, in accordance with Agency guidelines, policies, directives, and local statutes.

d.   Utilize the existing property tags permanently affixed to all existing assets. Utilize Government-provided NASA Equipment Control Number (ECN) tags and decals for acquired or procured equipment when title is transferred to the Government.

e.   Ensure that facilities used for storage of hardware, software, and other associated equipment include adequate protection and security for all items to which the Government has or will obtain title, whether Government-provided or Contractor-provided storage facilities are used.

2.3.1 Configuration Item/Resource Tracking

The Contractor shall maintain configuration control for the ACES-managed/provided environment, including the supporting infrastructure. The Contractor shall use the Government-provided CMDB to identify, maintain, track, and report all ACES-managed configuration items, including Government Furnished Equipment (GFE). This report shall provide data that is sortable by each Center. The Contractor shall update the CMDB with current information after receiving, installing, refreshing, excessing, or moving items, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SACM-3). The Government-provided CMDB is an integral database contained within the Remedy by BMC system that will be used by the ACES, Enterprise Applications Services Technologies (EAST), NASA Integrated Communications Services (NICS), Web Enterprise Service Technologies Prime blanket purchase agreement (BPA) (WESTPrime), and

Enterprise Service Desk (ESD) contracts, as reflected in Addendum 1, *CF PWS*. The Government will retain full access rights to all data in the system. Up to ten (10) Agency Remedy System Floating User Licenses will be provided as Government Furnished Service. If additional licenses are required, it is the Contractor's responsibility to provision them. Information to be tracked includes:

a. Current hardware configuration.
b. System configuration and software versions for all ACES-provided hardware and software at the seat level, to include augmentations.
c. Service Options.
d. APC items ordered for the seat. (See Section 3.3, *ACES Product Catalog (APC) Services*.)
e. Machine name.
f. Media Access Control (MAC) address(es).
g. End-user data profile (including username, NASA organization code, phone number, and building and room location information for the device).
h. Configuration item in-service date and unique interface point to the network ID (e.g., jack number).
i. System administrator name (for seats managed through ACES Enhanced Support Services). (See Section 3.15, *Enhanced Support Services*.)
j. Projected hardware technology refresh date. (See Section 3.5, *Technology Refresh*.)
k. Current special status levels (e.g., critical uplift, security uplift, and configuration freeze). (See Section 3.1.1, *Priority Service Support*; Attachment I-23, *Glossary of Terms*; and Section 2.3.2, *Configuration Freeze*, respectively.)

The Contractor shall create new and maintain existing system architecture and as-built diagrams for all ACES-managed support Infrastructure (e.g., NASA Operational Messaging and Directory (NOMAD) and NASA Consolidated Active Directory (NCAD)), in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SACM-1 and SACM-2).

2.3.2 Configuration Freeze

Due to mission, business, or other special operations, there will be times when Contractor access to specific systems and areas will be restricted. These restrictions may prevent the Contractor from performing routine services (e.g., preventative maintenance, conducting planned outages, and implementing software and/or hardware configuration changes); however, Service Level Agreements shall be maintained and corrective maintenance performed as required. These restrictions, regardless of duration and frequency, will not entitle the Contractor to any price adjustment. Each Center will have unique configuration freeze requirements. To meet these requirements, the Contractor shall:

a. Coordinate configuration freezes with the EUSO Manager or designee and the affected ACES SMEs, and notify the EUSO Manager or designee and the affected ACES SMEs of configuration freezes, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SACM-4).
b. Coordinate physical access, when necessary (i.e., corrective maintenance), to the affected systems and areas with the affected ACES SMEs, the requesting end-user, and/or applicable organization.
c. Track the configuration requirements to the freeze level and report freeze occurrences and duration to the affected ACES SMEs.

    d.   Ensure all ACES services are coordinated with each Center-specific configuration freeze requirement.

2.3.2.1 Scheduled Outages

A scheduled outage is defined as any planned activity that impacts the end-user's ability to access ACES services. A scheduled outage is considered downtime if all affected end-users were not notified at least three (3) days in advance. Unless directed by the Government to conduct maintenance or testing, an outage during Prime Time hours, defined as the hours between 6:00 a.m. and 6:00 p.m., local time, excluding Federal Holidays and weekends, shall be counted as downtime.

The Contractor shall accurately communicate to all affected NASA end-users outage information relating to ACES activities that impact Agency IT services via the ESD and in accordance with established ESD processes. The Contractor shall notify affected end-users of scheduled outages in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-2), and unscheduled outages as soon as practicable.

The Contractor shall include as part of Attachment I-2, *DPD*, DRD MA-01, *Management Plan*, an ACES Outage Communications Approach. The Approach shall address and include:

    a.   Outage Scope—e.g., Agency/Center, type of outage, duration, and severity.
    b.   Outage Participant Roles and Responsibilities—Contractor, ACES COR, ACES SMEs, and affected end-users.
    c.   Scheduling Requirements—Prior notification, repeat notifications, and closure/resolution notification.
    d.   Types of Customer Notification—e.g., e-mail, voicemail, in person, written memoranda, and posted bulletins.
    e.   Outage process flow from original outage identification to final outage closure message.
    f.   Ensure that all ACES services are coordinated with each Center-specific configuration freeze requirement.

The Contractor shall obtain approval from the ACES COR or designee for any scheduled outage, coordinate the outage with the ACES SME, and notify all affected end-users through the ESD. Unless the ACES COR or designee grants a waiver prior to the outage, any planned Agency-wide maintenance activities shall occur outside of Prime Time hours.

2.4 CONTRACT PHASE-IN/IMPLEMENTATION MANAGEMENT

The Contractor shall detail its planned Contract phase-in and implementation approach in its Phase-In Plan, prepared in accordance with Attachment I-2, *DPD*, DRD MA-03, *Phase-In Plan*. In conjunction with the phase-in, consistent with Section 5.2 of Addendum 1, *CF PWS*, the Contractor shall perform an initial update of the NASA Enterprise Architecture Repository (NEAR) in accordance with Attachment I-2, *DPD*, DRD CF-13, *I³P NASA Enterprise Service Catalog Data Requirements*, and DRD CF-14, *I³P Problem Documentation*.

2.5 SAFETY, HEALTH, AND ENVIRONMENTAL MANAGEMENT

The Contractor shall provide, implement, and maintain a comprehensive Attachment I-18, *Safety and Health Plan*, in accordance with Attachment I-2, *DPD*, DRD SA-01, *Safety and Health Plan*, and

NASA FAR Supplement (NFS) 1852.223-70, *Safety and Health*, and establish and implement an industrial safety, occupational health, and environmental program that (a) prevents employee fatalities, (b) reduces the number of Safety, Health, and Environmental Incidents, (c) reduces the severity of employee injuries and illnesses, and (d) protects property, equipment, and the environment through the ongoing planning, implementation, integration, and management control of these programs. The Safety and Health Plan shall address each of the following Agency Safety, Health, and Environmental Management core program requirements in detail that are applicable to the contracted effort:

a.   Management leadership and employee involvement
b.   System and worksite analysis
c.   Hazard prevention and control
d.   Safety, health, and environmental training
e.   Environment compliance

The Contractor shall devise an approach and the activities necessary to dispose of toner and equipment parts in ways that meet Federal Government and NASA requirements, in accordance with Attachment I-2, *DPD*, DRD IT-02, *Toner and Waste Disposal Plan.* The Contractor shall prepare and submit reports used to complete the annual report to NASA Headquarters on affirmative procurement, waste reduction, energy efficient product procurement, and ozone depleting substances, in accordance with Attachment I-2, *DPD*, DRD MA-08, *Environmental and Energy Consuming Product Compliance Reports*.

For each Center where work will be performed, the Contractor shall work closely with the ACES SME to coordinate with each Center's Safety and Mission Assurance Directorate/Office to ensure compliance with that Center's specific safety, health, and environmental requirements. The Contractor shall submit mishaps and safety statistics reports, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-3), directly to the NASA Incident Reporting Information System (IRIS) or use Center-specific forms provided by each Center's Safety and Mission Assurance Directorate/Office, or their electronic equivalent, to report mishaps and related information required to produce the safety metrics.

The Contractor shall ensure that all work, including that which may require exposure to asbestos, is performed in accordance with all Federal, State, Local, and Center-specific safety, health, environment, and fire protection/prevention regulations and procedures, as well as the Contractor's Attachment I-18, *Safety and Health Plan,* and is performed by personnel trained for such activities. The Contractor shall also provide safety and protective equipment (e.g., asbestos protection clothing and respiratory protection) as required.

2.6 QUALITY ASSURANCE AND MANAGEMENT

The Contractor shall detail its planned quality controls in Attachment I-19, *Management Plan*, prepared in accordance with Attachment I-2, *DPD*, DRD MA-01, *Management Plan*. If the Contractor adheres to or uses Center procedures, the Contractor shall support the applicable Center's registration process for these procedures.

2.7 I³P PROGRAM INTEGRATION

The Contract is part of the NASA OCIO's multi-sourced I^{3}P acquisition strategy, which spans across the following services: Network Communications, End-user Services, Enterprise Applications, and Web Services.

Success of NASA's I^{3}P is dependent upon the ability of I^{3}P Contractors to work within, and across, independent service contracts (I^{3}P and non- I^{3}P) to ensure a seamless IT service delivery environment and capability across the Agency. To better enable this environment, the Contractor shall, at a minimum, implement Associate Contractor Agreements with I^{3}P Contractors and other contractors (e.g., other Agency and Center contractors) to ensure continuity of service and provide transparency to the NASA end-users in accordance with defined Service Level Agreements.

The Contractor shall meet the requirements stated in Addendum 1, *CF PWS*. In addition, be consistent with the ITIL framework and NPR 7120.7, *NASA IT and Institutional Infrastructure Program and Project Management Requirements*, the Contractor shall host Process Integration Workshops to develop a shared understanding of how the Contractor needs to work with the other I3P stakeholders. Further, the following integration requirements shall apply.

2.7.1 Reserved for future use

2.7.2 NASA Integrated Communications Services (NICS)

This section identifies the ACES integration requirements with the NICS Contractor. The NICS contract will consolidate Local Area Network (LAN) and Wide Area Network (WAN) services for the Agency. No cost shall be included in the ACES proposal for these services.

The Contractor shall obtain telecommunications services from NICS or other contractors, as well as meet the following requirements:

    a.   Obtain all WAN services required to support provisioning of ACES services from NICS.
    b.   Obtain all LAN services required to support ACES from NICS, when NICS is the service provider. For Centers that have a contractor other than NICS provisioning LAN services, the Contractor shall obtain those services from that contractor and coordinate such services with NICS.
    c.   Obtain Internet Protocol (IP) address space and Domain Name System (DNS) services from NICS following NICS-provided processes.
    d.   Obtain Network Time Protocol services from NICS when NICS is the service provider for these services.
    e.   Obtain all communications services required to support ACES from NICS when NICS is the service provider for these services.
    f.   Coordinate with NICS for integrated ACES/communications services when NICS is the service provider for these communications services.

2.7.3 Enterprise Applications Service Technologies (EAST)

This section identifies the ACES integration requirements with the EAST Contractor. The EAST contract includes support of existing operational applications and systems, as well as improvements and additions to existing capabilities.

The Contractor shall meet the following requirements:

a.   Coordinate with EAST to obtain the distribution package for EAST-managed desktop software.
b.   Validate EAST software distribution packages in the ACES environment for successful deployment. If validation is unsuccessful, the Contractor shall notify the EAST Contractor.
c.   Deploy EAST software distribution packages to end-user client desktops.
d.   Obtain EAST-managed end-user accounts using EAST-defined processes and procedures.
e.   Coordinate with EAST to ensure proper provisioning of two-factor user authentication tokens and certificates prior to distribution.

2.7.4 Web Enterprise Service Technologies Prime BPA (WESTPrime)

This section identifies the ACES integration requirements with the WESTPrime Contractor. The WESTPrime contract includes public Web site hosting, Web content management and integration, and support of other Web site services.

The Contractor shall meet the following requirements:

a.   Obtain all WESTPrime within-scope Web services required to support provisioning of ACES services from WESTPrime.

2.7.5 Enterprise Service Desk (ESD)

This section identifies the ACES integration requirements with the ESD. The ESD contract provides Tier 0/1 Service Desk support in response to reported I^3P Incidents and Problems and provides an integrated service ordering capability for all I^3P services. The Contractor shall integrate with NASA provided IT Service Management (ITSM) processes and tools.

Cross Functional (CF) PWS 5.3 and 5.4 describe the responsibilities related to the ESD and the ESRS. In June 2014, the ESD initiated a change to migrate the ESD tools, including ESRS from the BMC/Remedy product as referenced in the CF PWS 5.3 and 5.4 to the use of ServiceNow.

The Contractor shall also provide re-engineering of the ACES integrations, if required, up to a total of 80 hours, in support of the ServiceNow Migration Project.

The Contractor shall meet the following requirements:

a.   Provide Tier 2/3 Service Desk support in response to ESD reported Incidents and Problems and Service Requests originating from the ESD or the ESRS.
b.   For any remote desktop implementation by the Contractor, allow read-only access by the ESD to allow the ESD to 'read' configuration information from the end-user's system that may help the ESD to determine at the Tier 1 Service Desk level where a Problem exists, while the Contractor maintains control of the system.
c.   Provide a mechanism to accept a warm hand-off (i.e., the ability to accept a real-time transferred call) from the ESD to continue the original call at the ACES Tier 2 support level.
d.   Coordinate with the ESD to ensure that APC-related administrative and funding approvals are accomplished and orders for all ACES services (including General

Services, Base Services, and Seat Services) are placed electronically through the ESRS in accordance with standard ESD and ESRS processes.

e. Work with the ESD, EUSO, and NSSC to develop and provide step-by-step ACES service ordering instructions (e.g., for requesting a new seat, seat move, seat modification, seat organization or end-user change, early hardware refresh, seat desubscription (i.e., removal), and conversion of a seat from one seat type to another). (See Section 3.0, *General Services*, and Section 5.0, *Seat Services*, for descriptions of these services.) This work will be part of the OtP project that is coordinated by NSSC as part of OtP familiarization training.

2.8 CONTRACT ADMINISTRATION

In performance of contract administration functions, the Contractor shall:

a. Detail in Attachment I-19, *Management Plan*, how the Contractor will communicate with the Government, other contractors, customers, and end-users, in accordance with Attachment I-2, *DPD*, DRD MA-01, *Management Plan*.
b. Provide primary and secondary points of contact with contractual obligation authority to perform all contract administration functions and activities required for this Contract. These points of contact shall have access to all contract administration data and information related to contract performance.
c. Provide online access to contract administration information and other required data to the CO and other designated personnel, in accordance with NPD 1440.6*x*, *NASA Records Management*.
d. Provide and maintain a listing of all Contractor and subcontractor employees working under the Contract and their designated locations in accordance with Attachment I-2, *DPD*, DRD MA-04, *Employee Listing*.
e. Generate, edit, merge, maintain, and distribute documentation related to the performance of this Contract to include documents, storage media, and records.

2.8.1 Program Coordination Support

The Contractor shall provide technical and managerial support and input to Agency- and Center-level program boards, panels, reviews, teams, working groups, and various ad-hoc meetings. Some meetings require the Contractor to give formal briefings, while others only require attendance and participation. The Contractor shall support these meetings and reviews with the level of technical and managerial participation sufficient to meet the needs of the meeting or review.

Examples include, but are not limited to:

a. Program Milestone Reviews (e.g., I^{3}P architecture review).
b. I^{3}P Service Integration Meetings.
c. Program Documentation Reviews.
d. Working Groups (e.g., end-user work groups).
e. Outage Reviews.
f. Anomaly/Investigation Reviews.
g. ACES Management and Contract Reviews.
h. ACES Monthly Technical Operations Reviews (Agency and ACES SME Status meetings).
i. ACES CO/COR Meetings.

j.   Major Move Reviews and Meetings.

2.9 TECHNOLOGY INFUSION AND TRANSFORMATION

The Contractor shall perform technology infusion and transformation management to ensure that functions and services are effectively planned, managed, and integrated with the NASA mission, program, enterprise architecture, and business needs. For significant technology infusion/transformation activities (those which would have a noticeable impact on end-user service delivery or operations), the Contractor shall submit a Technology Infusion/Transformation Plan in accordance with Section I, 3.5, *Technology Infusion/Transformation Planning*.

2.10 RECORDS MANAGEMENT

The Contractor shall ensure that accurate and complete records (including vital records) of Government business are maintained in accordance with Federal requirements and NPR 1441.1*x*, *NASA Records Retention Schedules*, and are segregated from company-owned records and from non-record materials. The term "records" is defined in 44 U.S.C. 3301 as:

> "all books, papers, maps, photographs, machine readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States Government under Federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of data in them. Library and museum material made or acquired and preserved solely for reference or exhibition purposes, extra copies of documents preserved only for convenience of reference, and stocks of publications and of processed documents are not included."

All data created for Government use are Federal records subject to the provisions of 44 U.S.C. Chapters 21, 29, 31, and 33; the Freedom of Information Act (FOIA), as amended; and the Privacy Act, and must be managed and scheduled for disposition as provided in 36 CFR XII, Subchapter B.

The Contractor shall meet the following specific records management requirements:

a.   Maintain a records management program and submit a Records Management Program Plan in accordance with Attachment I-2, *DPD*, DRD MA-05, *Records Management Program Plan*.

b.   Provide NASA or authorized representatives with access to all Government records. The Government reserves the right to inspect, audit, and copy record holdings.

c.   Submit an annual Inventory of Records Holdings to the EUSO Manager with a copy to the Center records manager, unless otherwise specified to be submitted to another party, in accordance with Attachment I-2, *DPD*, DRD MA-06, *Inventory of Records Holdings*.

d.   Manage legacy Federal records (data created for Government use and delivered to or falling under the legal control of the Government) inherited from previous contracts.

e.   At the completion or termination of the Contract, leave all Government-owned records at the Center for which the data were generated, and deliver or disposition the records as directed by the appropriate Center records manager.

 i.   To enable planning for the final records disposition, the Contractor shall deliver to the appropriate Center records manager, within ninety (90) days prior to Contract

completion or termination, a final Inventory of Records Holdings, in accordance with Attachment I-2, *DPD*, DRD MA-06, *Inventory of Records Holdings*.

ii. Delivery of records shall include sufficient technical documentation of all electronic records to permit Government access and use.

2.11 SERVICE LEVEL AGREEMENT TERMS AND CONDITIONS

The Contractor shall adhere to the following Terms and Conditions during performance of the Contract:

a. Funds retained as part of the Retainage Pool process (see Section I, 2.9, *Retainage Pools and Performance Metrics*) are not deemed or construed to be liquidated damages or a sole and exclusive remedy or in derogation of any other rights and remedies the Government has available under the Contract.

b. The Contractor shall cooperate with other I³P Contractors and other contractors in a coordinated and collaborative manner as needed to achieve service level targets, regardless of whether the reason for a service level failure was caused by the Contractor.

c. The Government will provide at least ninety (90) days written notice prior to the date that additions, deletions, or changes are made to service levels.

d. New or changed service levels will be mutually agreed upon by both the Government and the Contractor.

e. Service levels may be based on Government requirements, measurement data collected by the Contractor, and/or industry standards.

f. If multiple metrics are missed due to a single Incident, the Government will have the right to select which one of the missed metrics will apply.

g. If the Contractor fails to meet any service levels, the Contractor shall provide the Government with a written plan for improving performance within thirty (30) days of the failure. The Contractor's plan shall be subject to the Government's approval.

h. The Contractor shall specify and provide the appropriate measurement tools to collect and accurately reflect the performance data needed to determine service level performance.

i. The Contractor shall not be responsible for a failure to meet a service level solely to the extent that such failure is directly attributable to: the Government's errors, omissions, or breaches of contract; infringements of proprietary rights; willful misconduct or violations of law by the Government or the Government's Contractor; Government approved resource reductions where such reduction was the cause and the Contractor notified the Government in writing that reduction would cause such failure; or services performed during the execution of a Disaster Recovery Plan.

j. Service levels shall be measured on a monthly basis, unless otherwise specified.

k. Service level reports shall be available online and by the Seventh business day of the following month.

3.0 GENERAL SERVICES

The Contractor shall provide the following general services in support of the management and technical execution of the Contract.

3.1 TIER 2/3 SERVICE DESK SUPPORT

The Contractor shall provide Tier 2/3 Service Desk support in response to reported Incidents, Problems, and Service Requests originating from the ESD or the ESRS. The Contractor shall:

a.   Provide Tier 2 functionality twenty-four (24) hours a day, seven (7) days a week, and integrate it with the ESD.

b.   Provide Tier 2 Cellular functionality 24X7 to manage the voice and data communication environment for ACES.

c.   Utilize an ITSM as defined in NASA Contract NNX11AA02C (formerly NNX05AA01C), Change Order No. 28, Attachment J-21, *Enterprise Service Desk and Enterprise Service Request System Performance Work Statement*, and in accordance with Addendum 1, *CF PWS*, for automated logging, categorization, prioritization, and tracking of end-user Incidents and Problems. If a Contractor-supplied ITSM system is used, the Contractor shall integrate it with the Government-furnished system in accordance with Addendum 1, *CF PWS*.

d.   Document all Incidents (including IT security Incidents) accurately and completely to support management, resolution, and reporting of Incidents and Problems.

e.   After receipt of an Incident ticket, respond to the end-user with acknowledgement that the ticket has been received by the Contractor, in accordance with the end-user's selected Return To Service level or the ticket's critical uplift status (see Section 3.1.1, *Priority Service Support*, and Section 5.0, *Seat Services*), as well as Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SD-4, SD-5, and SD-7). The accepted form of acknowledgement shall be a phone call to the end-user and leaving a message if the end-user does not answer. In the case of a priority uplift request (see PWS Section 3.1.1), the Contractor shall provide a response in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-7).

f.   Restore full service to the end-user's system in accordance with the end-user's selected Return To Service level or the ticket's critical uplift status (see Section 3.1.1, *Priority Service Support*, and Section 5.0, *Seat Services*), as well as Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets IM-2, IM-3, and IM-4).

g.   Isolate, escalate, and route calls to Center support and field personnel.

h.   Provide processes, criteria, and points of contact (including other services providers and suppliers) necessary for effecting Problem resolution, including but not limited to maintaining escalation contacts and procedures and notification lists and processes.

i.   Maintain a knowledge management capability to assist in resolution of Incidents on the first call at the ESD and to identify trends in reported end-user Incidents.

j.   Provide temporary replacement ACES seats for out-of-service repairs or security mitigation for either IT security Incidents or to support audits, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-6). The ACES SME shall be informed of the temporary replacement in the instance of a security mitigation.

k.   Generate and report root cause analysis and corrective action plans for Incidents and Problems.

Any remote desktop implementation by the Contractor shall allow read-only access by the ESD to allow the ESD to 'read' configuration information from the end-user's system that may help the ESD to determine at the Tier 1 Service Desk level where a Problem exists, while the Contractor maintains control of the system. This does not preclude the Contractor from granting the ESD more capability, but only requires the read-only access as a minimum requirement.

3.1.1 Priority Service Support

The Contractor shall allow for the number of monthly trouble tickets, aggregated at the Agency level, equivalent to 2 percent of the ACES subscribed seats Agency-wide to be uplifted to priority service. In the event that the Agency's critical uplift tickets are not used in the current month, the unused portion shall not carry forward to the next month. Support for special events shall not be counted against Priority Services Percentages. In the event of a reoccurring Problem or prematurely closed ticket, the Contractor shall automatically elevate the ticket to priority service and shall not include the ticket in the calculation of the 2-percent priority service allocation. The Contractor shall honor a request for priority service whether or not the 2% limit has been exceeded. At the end of the month, the Contractor shall submit to NASA the priority ticket overages and count the overages against the next month's priority services percentage target.

3.2 SUPPORT LEVELS

'Support Level' is defined as the level of system administration and technical support that the Contractor is expected to provide for hardware and software used by end-users under the Contract. The support requirements are divided into three categories: Support Levels 1, 2, and 3, which are defined in Sections 3.2.1, *Support Level 1: ACES-Supported Hardware and Software*; 3.2.2, *Support Level 2: Agency-Provided and Licensed Software*; and 3.2.3, *Support Level 3: Other Hardware and Software*.

3.2.1 Support Level 1: ACES-Supported Hardware and Software

Support Level 1 provides full system administration support. The Contractor shall provide the full scope of services required for ACES-supported hardware and software on ACES-managed/provided seats or systems. ACES-supported hardware and software systems include: Agency standard hardware and software loads (as documented in NASA-STD-2804*x*, *Minimum Interoperability Software Suite*, and NASA-STD-2805*x*, *Minimum Hardware Configurations*) and items defined in Addendum 2, *Standard Load Software*, Tables 1-W, 1-M, 1-L, and 1-U.

3.2.2 Support Level 2: Agency-Provided and Licensed Software

Support Level 2 software includes:

   a. Software defined in Addendum 2, *Standard Load Software*, Table 3, *Commonly Used, Multi-Platform Software*, that follows the guidelines in this Section.
   b. Agency and Center site-licensed software: Any Agency or Center Government-owned site-licensed software whereby licensing is managed by the Contractor.

The Government will identify an Agency technical POC (or, alternatively, individual Centers can identify a technical POC) to the Contractor as a subject matter expert for each software product in

this Support Level. In the event an Agency technical POC is not identified and an individual Center has not identified a technical POC, the software will become Support Level 3 for that Center.

Certification and Accreditation (C&A) for Support Level 2 software is performed by the party responsible for the C&A of the system on which the software resides.

Support Level 2 provides assisted system administration support. The Contractor shall provide Level 2 support on ACES-managed/provided seats or systems as defined below:

   a.   Facilitate resolution of Problems and respond to end-user requests for information and configuration changes by working with the Government identified POC.
   b.   Install the software during hardware technology refresh and Return To Service desk side visits. If required, the Contractor shall identify the location and make available the appropriate file space to store Agency-provided software.
   c.   Ensure the availability of the latest licensed version of the software, as identified by the Government-identified technical POC.
   d.   De-install and re-install any covered software to another seat consistent with move, add, and change provisions for a system (Section 5.1.2, *Requirements for All Computing Seats*).
   e.   Return the configuration to the previous stable baseline installation within the subscribed Return To Service timeframe when it is determined that the covered software implementation affects the stability or operability of the ACES configuration.

If the Contractor has added Support Level 2 software component(s) to the existing baseline configuration and the updated configuration is stable and interoperable, the updated configuration will be established as the new baseline for that system. If the Contractor subsequently modifies the baseline configuration as part of a normal ACES process, and the configuration becomes unstable due to the Support Level 2 software implementation, the end-user may submit a waiver request. The Contractor shall return the configuration to the established baseline. The Contractor shall document and track the configuration change and the waiver request. If this inability to update the baseline configuration results in the Contractor being unable to meet a Contract requirement, such as an IT security requirement or software upgrade, the Contractor shall contact the ACES COR or designee for guidance.

3.2.3 Support Level 3: Other Hardware and Software

Support Level 3 includes any item not covered as Support Level 1 or 2. The Contractor shall provide Support Level 3 hardware and software via the APC (see Section 3.3, *ACES Product Catalog (APC) Services*) without technical assistance for installation or maintenance. In the event the end-user requires technical assistance, including installation and maintenance support, the Contractor shall provide the service through the APC.

For any seat where an end-user has implemented a change and the Contractor subsequently modifies the configuration as part of a normal ACES process, and the configuration becomes unstable due to the Support Level 3 software implementation, the end-user may submit a waiver request. The Contractor shall return the configuration to the previous stable baseline installation within the subscribed Return To Service timeframe. The Contractor shall document and track the configuration change and the waiver request. If this inability to update the configuration results in the Contractor being unable to meet a Contract requirement, such as an IT security requirement or software upgrade, the Contractor shall contact the ACES COR or designee for guidance.

In addition to the above, for any seat where it is determined that a Support Level 3 hardware or software change has adversely affected the stability, operability, or performance metrics for the seat or any ACES service, the Contractor shall return the configuration to the standard configuration. A joint decision will be made between the Contractor, end-user, and ACES COR (or Center designee) on how to proceed. The ACES COR will involve the appropriate people (including the Center CIO, if needed) to resolve a configuration issue.

3.3 ACES PRODUCT CATALOG (APC) SERVICES

The Contractor shall provide a single, Agency-wide, Web-based catalog of ACES commercially available IT products, available to all NASA personnel, including items specified in the ACES Seat Services (see Section 5.0, *Seat Services*), and associated maintenance services. Examples include printers, non-Standard Load software, second monitors, memory, keyboards, and internal hard drives. The Contractor shall make the APC available and operational on the Contract Implementation date for Wave 1 (see Attachment I-14, *Phase-In Schedule*), with a restricted version available to support phase-in activities beginning August 16, 2011.

The APC shall be linkable from and shall interface with the ESRS, in accordance with Section 2.7.5, *Enterprise Service Desk (ESD).* Payment for APC purchases shall be made in accordance with FAR 52.212-4, *Contract Terms and Conditions - Commercial Items,* which provides for funding through a Work Breakdown Structure (WBS) number. The APC shall have the capability to accept Government credit card information to complete a purchase transaction.

The Contractor shall offer hardware and software catalog prices that are a fixed percentage discount below the manufacturer's suggested retail price (MSRP). The Government will use the MSRP set by the manufacturer as the baseline source data. The Government reserves the right to direct the Contractor to add or remove items available from the APC. The APC shall include a function that allows the catalog to display the fixed percent discount below MSRP. In the case where a user searches for a product that is available through multiple distributors' catalogs, the catalog shall return the lowest cost item that is in stock from the multiple catalogs based on the OEM part number.

The APC shall provide for end-user consultation, placing orders, order status, issue resolution for disputed orders, receiving and inspection, delivery to customers, installation of products, and returns. Each APC entry shall define what support is included in the APC price. APC items are subject to the Service Level Agreement (SLA) requirements and performance metrics associated with the seat for which they are ordered, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics*. APC items that are installed internal to existing seat hardware shall be considered part of the hardware for the life of the hardware. For APC items that are not associated with any ACES seat and are within the OEM warranty period, an eight (8)-business hour Return To Service (as defined in Section 5.1.6.3.5, *Return To Service*) shall apply.

The Contractor shall provide the ability to generate APC reports on all APC-purchased items sorted by type of asset (e.g., hardware, software, and peripherals). Information in the reports shall include APC purchases, associated unique seat identification, end-user name and organization code, availability for re-utilization, and identification of remaining maintenance/warranty sorted by catalog service type. These reports will be used by the Government to enable the review of buying habits over the life of the Contract, as well as to assist with current and future budgeting.

The Contractor shall provide and maintain a training module that reflects the latest capabilities of the APC. The training module shall include an up-to-date online APC user's guide and the capability to log end-user suggestions, changes, and modifications to the APC, training, and user's guide.

The Contractor shall provide a mechanism for end-users to submit a request for quote for products not found in the APC. For APC requests for quote, the Contractor shall provide a quote response, including price and delivery date, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-9). Upon request from the Government, the Contractor shall offer a quote for expedited delivery.

The Contractor shall deliver all APC items with full retail packaging. The Contractor shall provide a delivery date when the order is approved and shall deliver APC-ordered items, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-8). If the Contractor cannot deliver the item within the required SLA timeframe, the Contractor shall give the customer the option to accept a late delivery, order an alternate item, or cancel the order at no cost to the Government. If the item is not delivered within the required timeframe, the delivery is considered a missed metric.

APC items shall include the Original Equipment Manufacturer (OEM) warranty; when available from the OEM, extended warranty/service shall be offered to the Government as separately priced items. For each product, the Contractor shall include supplier information encompassing manufacturer model numbers and specifications that describe the product or service, and shall detail additional components required to make the product fully functional. The Contractor shall provide the end-user the opportunity to order these components at the same time the product is ordered.

3.3.1 Hardware and Software Types

APC items shall include acquisition and OEM warranty, if available, facilitated by ACES.

The following additional services shall be offered at fixed prices:

> Installation
> i.   Internal hardware installation
> ii. External hardware installation
> iii. Software installation

Upon delivery to the end-user, if installation was purchased, the installation shall be completed within the timeframe that corresponds to the subscribed Return To Service level.

Maintenance services shall be offered at a percentage of the purchase price for a three (3)-year period. Maintenance is defined as troubleshooting and repair or replacement for hardware and upgrades and patches for software.

3.3.2 X-Build

As part of the APC, the Contractor shall make available other OEMs' product lines not included in the "B" Computing seat (see Section 5.1, *Computing Seats*, for more information). Systems obtained through this mechanism (known as "X-Build" systems) may subscribe to the services listed under the "B" Computing seat.

3.3.3 Volume Discount for APC Items

a. The Contractor shall offer volume discount information as part of the APC services. The Contractor is authorized to use SEWP (Solutions for Enterprise-Wide Procurement) to stock the APC. At a minimum, the Contractor shall:
    i. Identify the APC items/services for which volume discounts are available.
    ii. Provide the quantity or quantity band(s) to which the discount will be applied.
    iii. Identify the price(s) or discount percentages that apply to the specified quantity or quantity band(s).
    iv. Identify the time period in which the volume discount applies.
b. The Contractor shall review APC prices and availability as well as update the volume discount listing at least quarterly and/or upon Government request. The Contractor shall notify the Government within five (5) business days of the completed update.

3.3.4 Price Matching for APC Items

The Contractor shall price match, on a case-by-case basis, items provided in the APC. Verifiable evidence (e.g., Web site, written quote) for an item for which a price match is requested must be available from a nationally known vendor at the time the price match is requested. The Contractor shall effect the price match as a credit on the monthly invoice unless an alternate method is specified by the ACES CO   R.

3.3.5 Returns

APC items shall not be delivered to end-users if damage is detected prior to delivery to the end-user. If an APC item is returned to the Contractor within fourteen (14) calendar days of the original delivery date to the end-user, the Contractor shall accept the returned item and provide a full refund to the customer, except under the following conditions:

a. APC software delivered to and subsequently opened or used while in the end-user's possession.
b. An APC item delivered to the end-user and subsequently damaged while in the end-user's possession.

If an item is returned within 14 days or less and is in full working condition, the returned item can be redeployed to another end-user who has ordered the same item.

3.4 SOFTWARE RIGHT TO USE

The Contractor shall grant the right to an ACES end-user to install ACES-provided software on a non-ACES computer (i.e., allow a copy of software to be used on a personally owned computer) with the following limitations:

a. Software provided through ACES Base Services shall be made available as Software Right To Use (RTU) to all end-users.
b. Software provided as part of a Computing seat subscription with the Standard Load Service Option selected shall be made available as Software RTU to the end-user of the corresponding Computing seat.

The Contractor shall develop the Software RTU provisioning process and follow the Government-provided Software RTU approval process. The Contractor shall grant Software RTU under the limitations shown above to the extent that the Contractor is able to obtain such a right from a software publisher and the Contractor and the Government jointly determine that such software shall be eligible for use on a non-ACES computer. The Contractor shall make all RTU supplied software updates available to these end-users. The Contractor shall develop and provide detailed instructions for installation and usage.

3.5 TECHNOLOGY REFRESH

ACES Computing, Cellular, and Network Peripheral seats have fixed hardware and software technology refresh periods. The Contractor shall refresh seat hardware and software as specified in Section 5.0, *Seat Services*, and shall complete refreshes and Return To Service after start of the refreshes, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SD-11 and SD-12). It is expected that the vast majority of Computing, Cellular, and Network Peripheral seats will be refreshed on or about their regularly scheduled refresh date. If there is a request from the end-user to extend the refresh beyond this date (as documented by an ACES SME-approved refresh deferment request), the Contractor should contact the ACES COR to facilitate the refresh. Until the system is refreshed, however, the Contractor shall be responsible for maintaining the equipment.

The Contractor shall provide computer seat hardware/software as specified in current versions of NASA-STD-2804*x* and NASA-STD-2805*x*.

The Government reserves the right to request a change in the Computer or Network Peripheral Platform for any seat during refresh by notifying the Contractor within ninety (90) calendar days prior to the scheduled refresh date.

The Government reserves the right to request a change in the Mobile Platform for any seat during refresh by notifying the Contractor within forty-five (45) calendar days prior to the scheduled refresh date.

The Contractor shall provide a Technology Refresh Plan in accordance with Attachment I-2, *DPD*, DRD IT-04, *Technology Refresh Plan*.

Prior to the refresh of each ACES seat, the Contractor shall:

  a.   Survey each end-user to determine unique or unusual refresh requirements.
  b.   Provide each end-user with a report that identifies all items to be transferred during the refresh.
  c.   Notify the end-user if there are software or hardware peripherals (e.g., firewire peripherals) that cannot be ported or carried over for use.
  d.   Identify software items for which end-user needs to provide the media and/or license.
  e.   Obtain the end-user's sign-off on refresh requirements.
  f.   Coordinate a date/time window for the refresh.

The day of the refresh the Contractor shall:

a.   Meet with the end-user at the agreed to date/time window.
b.   Perform backups of all readily available, standardized, and transferable data.
c.   Perform the refresh in accordance with the signed-off refresh requirements.
d.   Inform the end-user of the Service Options (defined in Section 5.0, *Seat Services*) to which he/she is subscribed (e.g., Return To Service), in accordance with the seat type.
e.   Configure and activate the refresh hardware and software, ensure operability, and test Support Level 2 software to ensure functionality, e.g., encryption software and Citrix clients.
f.   Replicate backed up end-user data to the refreshed system.
g.   Provide the end-user with familiarization training on the new seat, including identification of any new hardware and software.
h.   Offer the opportunity for the end-user to test drive the refreshed system.

After the Refresh Process the Contractor shall:

a. Retain the end-user data for thirty (30) calendar days in order to allow recovery of files that were inadvertently not replicated to the refreshed system (e.g., a PKI profile kept in a non-standard directory).
    1. Within 24 hours of a seat being refreshed (either early tech refresh (ETR) or normal refresh), the legacy seat (one to be removed) will be de-subscribed and no costs applied for the legacy seat after the 24 hours, assuming that the legacy seat has been successfully removed. If the user or NASA does not release the seat, costs will continue to be applied and invoiced until the user has released the seat to ACES.
    2. HPES will provide a method for backup of all the user's data on the device and demonstrate that the method is successful and able to restore all of the user's data to a new device successfully.
    3. Until HPES has successfully demonstrated the backup method, HPES will be required to keep old assets (devices) for a minimum of 30 days at no expense to NASA.
    4. Once HPES has successfully demonstrated that the data can be backed up and restored successfully, then HPES may pick up old devices at the time of refresh and they will not be required to hold the assets for 30 days. On an annual basis EUSO and HPES will perform a random sample of refreshed machines to ensure the backup method is still operating as approved by NASA.
    5. The user's data will be kept for a minimum of 30 days from date of refresh for possible retrieval by the user.
    6. A new metric will be established for restoration of backup. This metric will be measured in accordance with Attachment I-3, Retainage Pools and Performance Metrics (SLA Target SD-10). *Note: This metric will not be measured until the Contractor has successfully demonstrated a back-up method that is accepted by NASA.*
b. Perform a follow-up action (e.g., visit, customer sign-off, or phone call) to confirm end-user satisfaction.
c. Remove and sanitize replaced equipment in accordance with and as defined in NIST SP 800-88, and NASA ITS-SOP-0035.

If at any point during performing the above steps prior to, during, or after the refresh the end-user does not respond in time for the Contractor to meet refresh metrics, the Contractor shall request further guidance from the ACES SME.

3.6 CONSUMABLES

Consumables are defined as product parts or supplies (except paper) that are consumed during the operation of the product, require replacement from time to time, and are necessary to provide the functionality of the device. The Contractor shall provide and replace the following consumables:

a.   Battery replacements for ACES seats and APC purchases during the support timeframe, as described in Section 3.3, *ACES Product Catalog* (*APC*) *Services*, when the battery is no longer serviceable.

b.   All printer and multi-functional device consumables (except for paper) as part of the peripheral services for all ACES-provided printer and multi-functional devices, as defined in Section 5.4, *Network Peripheral Seats*.

c.   Tapes or other media as required for the backup and archiving services for ACES-managed servers.

3.7 PERFORMANCE METRICS REPORTING TOOL

The ACES COR, with input from the ACES SMEs, will analyze the Contractor's metrics performance results, as reported to the Government in accordance with Attachment I-2, *DPD*, DRD MA-07, *Retainage Pools and Performance Metrics Report*. The Contractor shall make an enterprise Web-based metrics tracking tool available and operational on the Contract Implementation date for Wave 1 (see Attachment I-14, *Phase-In Schedule*). In performing metrics reporting, the Contractor shall:

a.   Provide, implement, and maintain an enterprise Web-based metrics tracking tool, including any necessary interfaces to the ESRS to capture, report, summarize, and track all required metrics by Center and/or Agency information. This system shall allow for data to be examined and sorted in a variety of views, such as service being provided, end-user physical location, software installed on system supported, upcoming refresh dates, and infrastructure upgrades that impact end-users.

b.   Update data daily, at a minimum, within the Contractor's metrics tracking tool.

c.   Provide the Government with access to the Contractor's metrics tracking tool for the purpose of reviewing metrics requirements, conducting ongoing surveillance in accordance with Attachment I-20, *Surveillance Plan*, ascertaining service trends, generating ad hoc data queries, and auditing the Contractor's performance.

d.   Post performance metric results on a Government, non-public Web site for review and comment by Government management.

3.8 DEVELOPMENTAL TEST LABORATORY

The Contractor shall provide a laboratory for end-users to test software products on standard ACES-provided systems. If required, the space provided for laboratory capability will be negotiated between the Contractor and the Government. The Developmental Test Laboratory (DTL) shall interface to the NASA production environment enabling full operational testing to take place and reflecting the end-user's operational environment and configuration where the end-user is conducting the test.

The Contractor shall establish DTLs at each Center that are equipped to provide both local (physical) resources as well as remote (virtual) resources in which end-users can install, regression test, and validate their applications. Each DTL shall have one of each platform available for the "M" seat. The Linux, Windows, and MAC operating systems shall support desktop, laptop, lightweight laptop, and ultra lightweight laptop platforms. In addition, the Linux and Windows operating systems shall support tablet platforms. The DTL team shall be the primary point of coordination of the ACES provisioning of the virtual machines. The Contractor shall also establish a single ACES specific proving center lab, logically separate from the main DTL with the primary goal of certifying all developed diagnostic troubleshooting routines used to validate components (i.e., Gold Disk) builds and maintaining the Definitive Software Library (DSL). This DTL shall interface with test instances of NOMAD and NCAD to simulate the production ACES environment.

Upon request by the Government, the Contractor shall make available in the DTL any hardware platform still deployed. In addition, the DTL shall include adaptive equipment for visual, hearing, and physical impairments to ensure that the ACES-provided computers and software are tested for accessibility as referenced in FAR 52.212-5 (specifically 52.222-36, *Affirmative Action for Workers with Disabilities*).

For activities lasting less than 30 days and which require a small number of support personnel (three or less), the Contractor shall deploy the requested support personnel within 24 hours of the approved request. In the event a larger pool of resources is requested, or if resources are required for a longer term, the Contractor shall work with the Government to develop an appropriate time frame for deployment.

3.9 TEMPORARY SEATS

The Contractor shall provide a means for obtaining ACES seats on a temporary basis. (See Section 5.0, *Seat Services*, for descriptions of ACES seats.) The Contractor shall make adjustments to equipment availability contingent upon the projected future volume of temporary seat requests. The customer will indicate a start and end date in each temporary seat request. A temporary seat shall be billed on a monthly basis until the arrival of the end date, after which the Contractor shall pick up the seat and stop the monthly billing for the seat.

To fulfill temporary seat requests, the Contractor shall deliver systems that meet the requirements of the seat type ordered and that have one (1) year or greater of remaining useful life defined as the time until the asset transition value of the asset has reached zero or the asset with residual value is no longer functional, if available. If the Contractor has no such systems available, the Contractor shall deliver an "S" seat as a temporary seat, unless the customer withdraws the temporary seat request. Temporary seats shall be delivered in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SD-13 and SD-14).

3.10 SUPPORT FOR TELECOMMUTERS, TRAVELERS, AND OFF-SITE END-USERS

The Contractor shall ensure that telecommuters (i.e., end-users who work from a remote location), travelers (end-users at a NASA or non-NASA temporary duty location), and other off-site/near-site end-users (those whose permanent duty station is outside the perimeter of a Center) experience minimal interruption of services at the remote location for services within the Contractor's scope. (Note: Every NASA employee is a potential telecommuter and may request authorization to

telecommute at any time and for any given timeframe.) The Contractor shall maintain Return To Service levels consistent with the seat subscription for travelers at NASA facilities. If unique circumstances exist that preclude the Contractor's ability to provide service in accordance with the end-user's subscribed Service Option, the Contractor shall provide a justification and metrics waiver request to the ACES COR. The Contractor shall not perform activities at an end-user's personal residence.

The Contractor shall perform remote diagnostics and troubleshooting to resolve Problems for these end-users. For Problems that cannot be resolved remotely, the Contractor shall offer to the end-user overnight delivery of a temporary replacement device if such delivery is commercially available. If overnight delivery is not available, the next fastest commercially available delivery shall be utilized. The end-user receiving the replacement will be responsible for returning the defective unit to the Contractor. The Contractor shall provide for and arrange return delivery services if a temporary replacement unit has to be returned because it is defective.

The Contractor shall provide the same level of support to end-users visiting other Centers as they would receive at their home Center.

3.10.1 Support for Off-Site End-users

The Contractor shall provide Tier 2/3 Service Desk phone support and hardware and software maintenance services for end-users stationed at U.S. locations, other than Centers, and foreign locations. When the end-user needs software or hardware support that cannot be provided over the phone, the Contractor shall, at a minimum, provide these services by shipping properly configured hardware and software to the end-user using drop ship methodology or other ACES COR-approved method. The Contractor shall provide the shipping materials, including packaging. The Government will be responsible for the shipping cost.

3.11 RETURN TO SERVICE SURCHARGE

"The Contractor shall (with the EUSO Manager's concurrence) charge a Return to Service Surcharge (RTSS) if a physical desk-side visit is required for 50 or more end users whose ACES seats were rendered inoperable due to a single Center or Agency event, where the affected end users performed any of the following actions without a valid waiver:

   a.   Installing or attempting to install, on an ACES seat, Support Level 3 software that is incompatible with the ACES software Standard Load.
   b.   Installing or attempting to install, on an ACES seat, non-ACES hardware that is incompatible with the ACES hardware.
   c.   Performing any action that results in the infection of an ACES seat with a computer virus or other malware. If the infection is due to lack of diligence on the part of the ACES Contractor, there will be no RTSS.
   d.   Performing any other action against the established policy that causes the seat to become unstable or inoperable.

An RTSS shall fall into one of two Charge Types:

   a.   Computing Seat RTSS – Applies only to Computing seats (see Section 5.1, *Computing Seats*). The Contractor shall propose the Computing seat RTSS per seat.

    b.   <u>Cellular Seat RTSS</u> – Applies only to Cellular seats (see Section 5.2, *Cellular Seats*). The Contractor shall propose the Cellular Seat RTSS per seat.

3.12 WIPE AND LOAD SERVICES

The Contractor shall provide Wipe and Load services for ACES seats at the Government's request or when deemed necessary by the Contractor. Using consistent tools, processes, and procedures, the Contractor shall perform the following actions:

a.   Coordinate a time with the end-user to perform the Wipe and Load.
b.   Name the computer seat according to the appropriate naming standards. If the current name meets all naming standards, the Contractor shall not make any changes at the time of the Wipe and Load.
c.   Add the computer to the appropriate domain, if the computer is part of an ACES-managed domain.
d.   Configure the system with the Standard Load software, if that Service Option is selected for the seat, for the end-user's immediate use.
e.   Perform the Wipe and Load, defined as the act of erasing all information on all of the ACES-supported hard drives associated with the seat and bringing the seat back to the current, fully functional baseline configuration. End-user data shall be preserved upon request.

3.12.1 Wipe and Load in Response to an Incident

When responding to an Incident that requires a Wipe and Load, the Contractor shall perform the following actions using consistent tools, processes, and procedures:

a.   Record the health status of the seat, including the issue(s) that forced the Contractor to perform the Wipe and Load.
b.   Preserve end-user data (providing it is not compromised) and restore it at the end of the Wipe and Load.

3.12.2 Wipe and Load in Response to an End-User Request

Wipe and Load service in response to an end-user request shall be provided to a single end-user with the intention to transfer the device to another end-user. When responding to an end-user request for Wipe and Load service, the Contractor shall preserve the end-user data to external media as directed by the requestor, and sanitize the device in addition to performing the Wipe and Load using consistent tools, processes, and procedures.

3.13 ELEVATED USER PRIVILEGES

End-user access with elevated privileges includes any access to the computer that allows the end-user or designee to install, upgrade, significantly change, or patch software (including the computer's

operating system). The Contractor shall allow elevated user privileges on ACES Computing seats (see Section 5.1, *Computing Seats*) only as authorized by the Agency CIO or designee, in accordance with NASA Information Technology Requirement (NITR) 2810-14, *Managing Elevated User Privileges on NASA Desktop and Laptop Computers*. The end-user conducting the installation, upgrade, significant change, or patching is responsible for the added software and its associated risk consistent with Section 3.11, *Return To Service Surcharge*. If the newly installed, upgraded, significant changed, or patched software does not change the security controls, the Contractor shall continue to be responsible for the associated IT System Security Plan. In all instances, the Contractor is responsible for providing all subscribed system administration services described in Section 5.1.6.3.7, *System Administration*.

The Contractor shall follow procedures as established by the local Office of the CIO for provisioning elevated user privileges in accordance with NITR 2810-14. In the event performance issues stem from non-ACES personnel having elevated user privileges, the Contractor shall provide an explanation and metrics waiver request to the ACES COR. The Contractor shall perform a monthly validation of its list of end-users or designees who have elevated user privileges with the list maintained by the Agency OCIO.

3.14 SUPPORT FOR SPECIAL EVENTS

The Contractor shall provide IT support for special events (e.g., Open Houses, technology expositions, and senior management meetings) as identified by the ACES COR, ACES SME, or designee. The Contractor shall escalate trouble tickets for these events to priority services. The special events trouble tickets shall not be counted against the priority service percentages. The Contractor shall work closely with the ACES COR or ACES SME to coordinate remote event support.

3.15 ENHANCED SUPPORT SERVICES

Enhanced Support Services are intended as an augmentation to the Standard System Administration services provided under the ACES seats as well as a vehicle for the Government to acquire computer support for other functionality. For periods greater than 1 month, the Government will provide office space, in close proximity to the end-users being served, for the individual performing the Enhanced Support Services.

The Contractor shall provide Enhanced Support Services for the following categories:

    a.   <u>Basic Microsoft Operating Systems Analysis Services</u>

        Provides the following services on Microsoft OS's:

        i.   Setup and configuration of system hardware and software.
        ii.   Configuration of the ACES Standard Load for the end-user(s) of the system.
        iii.   Preparation, breakdown, moving, and set up in support of a move.
        iv.   Transfer of data from one system to another.
        v.   Addition of peripheral hardware, support software, and associated drivers, including testing and validation of proper operation.
        vi.   Addition of approved software.

vii.   Testing, troubleshooting, and resolution of typical ACES Support Level 1 software applications.
viii. Resolution of driver and boot issues.

b.   <u>Advanced Microsoft Operating Systems Analysis Services</u>

Provides all of the Basic Microsoft OS Analysis services plus the following services on Microsoft OS's:

i.   Testing, troubleshooting, and resolution of typical ACES Support Level 2 and 3 software applications as applied to the supported organization.
ii.   Act as Third Level vendor support for organizational software.
iii. Act as the organizational expert for non-Standard Load software.
iv.   Perform programming and scripting within the Microsoft OS.
v.   Perform system administration functions that support the mission of the organization.

c.   <u>Basic Apple Operating Systems Analysis Services</u>

Provides the following services on Apple OS's:

i.   Setup and configuration of system hardware and software.
ii.   Configuration of the ACES Standard Load for the end-user(s) of the system.
iii. Preparation, breakdown, moving, and set up in support of a move.
iv.   Transfer of data from one system to another.
v.   Addition of peripheral hardware, support software, and associated drivers, including testing and validation of proper operation.
vi.   Addition of approved software.
vii. Testing, troubleshooting, and resolution of typical ACES Support Level 1 software applications.
viii. Resolution of driver and boot issues.

d.   <u>Advanced Apple Operating Systems Analysis Services</u>

Provides all of the Basic Apple OS Analysis services plus the following services on Apple OS's:

i.   Testing, troubleshooting, and resolution of typical ACES Support Level 2 and 3 software applications as applied to the supported organization.
ii.   Act as Third Level vendor support for organizational software.
iii. Act as the organizational expert for non-Standard Load software.
iv.   Perform programming and scripting within the Apple OS.
v.   Perform system administration functions that support the mission of the organization.

e.   <u>Basic Linux Operating Systems Analysis Services</u>

Provides the following services on Linux OS's:

i.   Setup and configuration of system hardware and software.
ii.   Configuration of the ACES Standard Load for the end-user(s) of the system.

iii.   Preparation, breakdown, moving, and set up in support of a move.
iv.   Transfer of data from one system to another.
v.   Addition of peripheral hardware, support software, and associated drivers, including testing and validation of proper operation.
vi.   Addition of approved software.
vii.   Testing, troubleshooting, and resolution of typical ACES Support Level 1 software applications.
viii.   Resolution of driver and boot issues.

f.   <u>Advanced Linux Operating Systems Analysis Services</u>

Provides all of the Basic Linux OS Analysis services plus the following services on Linux OS's:

i.   Testing, troubleshooting, and resolution of typical ACES Support Level 2 and 3 software applications as applied to the supported organization.
ii.   Act as Third Level vendor support for organizational software.
iii.   Act as the organizational expert for non-Standard Load software.
iv.   Perform programming and scripting within the Linux OS.
v.   Perform system administration functions that support the mission of the organization.

g.   <u>Basic UNIX Operating Systems Analysis Services</u>

Provides the following services on UNIX OS's:

i.   Setup and configuration of system hardware and software.
ii.   Configuration of the ACES Standard Load for the end-user(s) of the system.
iii.   Preparation, breakdown, moving, and set up in support of a move.
iv.   Transfer of data from one system to another.
v.   Addition of peripheral hardware, support software, and associated drivers, including testing and validation of proper operation.
vi.   Addition of approved software.
vii.   Testing, troubleshooting, and resolution of typical ACES Support Level 1 software applications.
viii.   Resolution of driver and boot issues.

h.   <u>Advanced UNIX Operating Systems Analysis Services</u>

Provides all of the Basic UNIX OS Analysis services plus the following services on UNIX OS's:

i.   Testing, troubleshooting, and resolution of typical ACES Support Level 2 and 3 software applications as applied to the supported organization.
ii.   Act as Third Level vendor support for organizational software.
iii.   Act as the organizational expert for non-Standard Load software.
iv.   Perform programming and scripting within the UNIX OS.
v.   Perform system administration functions that support the mission of the organization.

i.   <u>Basic Database Administration Services</u>

Provides all activities related to the administration of computerized databases. Projects long-range requirements for database administration and design in conjunction with other managers in the information systems area as well as Government project managers.

j.   Advanced Database Administration Services

Provides expertise in the design, implementation, and maintenance of complex databases, access methods, access time, device allocation, validation checks, organization, protection and security, documentation, and statistical methods. Services include maintenance of database dictionaries, overall monitoring of standards and procedures, and integration of systems through database design.

k.   Basic Network Peripheral Technician Services

Provides assistance in maintenance and implementation of network peripherals. Responsible for providing assistance and technical support for network peripheral design activities. Assists in the review/assessment of end-user needs.

l.   Advanced Network Peripheral Technician Services

Provides planning, design, and implementation of network peripherals. Plans and directs the activities of other technicians. Conducts feasibility studies, evaluates vendor products, and makes recommendations on selection. Provides guidance and training to less experienced technicians.

3.16 EARLY SEAT REFRESH

The Contractor shall provide the ability to affect an early seat refresh. Early seat refresh is defined as the replacement of a seat before its scheduled refresh date. The Contractor shall invoice the remainder of the Asset Transition Value (ATV) for the existing seat's hardware platform at the time of the request. The seat shall be refreshed in accordance with Section 3.5, *Technology Refresh,* and Attachment I-3*, Retainage Pools and Performance Metrics*. The refresh shall be accomplished in accordance with the corresponding SLA for the new seat type. Once the early refresh is concluded, the time to refresh is reset.

Asset Transition Value (ATV) Calculation Formula for Compute seats with a 48 month refresh (applies to compute seats initially installed during contract years 1 through 3.

> The formula for calculating the ATV for compute seats extended to a 48 month refresh cycle: (ATV value as of November 1, 2014 divided by the remaining number of months of the useful life as of November 1, 2014) multiplied by the remaining months of the useful life of the seat.

> e.g.: ATV value as of November 1, 2014 = $442.78 / 25 remaining months of useful life = $17.71 straight line depreciation per month X remaining months of useful life on the seat at the time of ETR. (Based on an acquisition cost of $1,226.00 and an initial deployment date of Dec 2012)

Asset Transition Value (ATV) Calculation Formula for Network Peripherals with a 60 month refresh. (Applies to Network Peripherals initially installed during contract years 1 through 3).

The formula for calculating the ATV for Network Peripherals seats extended to a 60 month refresh cycle: (ATV value as of November 1, 2014 divided by the remaining number of months of the useful life as of November 1, 2014) multiplied by the remaining months of the useful life of the seat.

e.g.: ATV value as of November 1, 2014 = $3,125.04 / 24 remaining months of useful life = $130.21 straight line depreciation per month X remaining months of useful life on the seat at the time of ETR. (Based on an acquisition cost of $12,500.00 and an initial deployment date of Nov 2011)

For compute seats initially deployed in contract years 1-3 that have been extended to a four (4) year refresh cycle, Early Seat Refreshes will be limited to 1% of compute seats at the agency level per year, for contract years 4-7. The number of compute seats eligible for early seat refresh will be based upon the number of seats deployed in contract years 1 – 3 that remain eligible to be refreshed at the beginning of each contract year which will be identified by the Contractor. (This does not include Early Seats Refreshes that occur as a result of The Model Contract Section 6.21 Repeated Equipment Failure). Any new or refreshed seats that are deployed in contract years 4 – 7 will have no limit applied for early seat refresh.

For Network Peripherals initially deployed in contract years 1-3 that have been extended to a five (5) year refresh cycle, Early Seat Refreshes will be limited to 150 of Network Peripherals at the agency level per year, for contract years 4-7. (This does not include Early Seats Refreshes that occur as a result of The Model Contract Section 6.21 Repeated Equipment Failure).

Asset Transition Value (ATV) Calculation Formula- for seats initially deployed in Contract Years 4 through CY 10

The formula for calculating the ATV for the computing seat, network peripheral seat, T-seat devices, and other mobility seats for use in determining the ETR price is: (Acquisition cost of the original device divided by the number of months of the useful life of the seat) multiplied by the remaining months of the useful life of the seat.

Early Tech Refresh for Mobile device (ETR) Calculation Formula-for all mobile devices regardless of initial deployment date.

The formula for calculating the ETR price for the cell phone and smart phone seat devices is: (MSRP price for the original device at time of initial order divided by the number of months of the useful life of the seat) multiplied by the remaining months of the useful life of the seat.

3.17 DATA CENTER SERVICES

The Contractor shall provide all necessary data center services (e.g., servers, operating systems, and system administration) required to deliver the ACES services. The provisioned data center services shall ensure the appropriate security controls for the system requiring those services. Any data center service needed by an ACES-required service shall be refreshed or upgraded as needed when the corresponding service is upgraded (e.g., enterprise migration to a new desktop operating system).

Infrastructure servers include all servers used to provide ACES services, not solely NOMAD and NCAD. All Infrastructure servers will be refreshed every 5 years unless they are virtualized or

moved to the cloud within 3 years from the award of contract modification #273. If they are not virtualized or moved to the cloud within 3 years of the contract modification, then they will be refreshed within 5 years of the award of contract modification #273. (Storage infrastructure is outside of this refresh planning.)

3.18 SOFTWARE LICENSING CONTINUATION

The Contractor shall be responsible for providing all licenses for any systems transitioning from the Outsourcing Desktop Initiative for NASA (ODIN) contract to the ACES contract on the Implementation date for Wave 1, in accordance with Attachment I-14, *Phase-In Schedule.*

3.19 OTHER GENERAL SERVICES

The Contractor shall provide the following technical services as individually fixed-priced services:

a. RTSS's for Computing seat, Cellular seat, and software. (See Section 5.1, *Computing Seats*, and Section 5.2, *Cellular Seats*, for descriptions of Computing seats and Cellular seats.)

b. Sanitization of non-ACES devices in accordance with NIST SP 800-88 and NASA ITS-SOP-0035. (Note: Sanitization of ACES devices shall be included as part of the Contract price.)

c. Installation of internal and external non-ACES peripherals to ACES computers. (This installation shall include any driver and cables (cables will be provided by the end-user) necessary to support the peripherals.)

d. Data transfer (CLIN S-6) , ACES to a non-ACES supported system, non-ACES to an ACES supported system, or non-ACES to non-ACES supported system.

e. Wireless broadband cellular aircard service (including aircard) with unlimited data plan.

f. Means to respond to a service request during Non-Prime Time hours. When Non-Prime Time service is requested, the Contractor shall request ACES CTM authorization to proceed, in accordance with Center procedures and Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-15). If the service request is authorized, the Contractor shall notify the end-user, initiate work, in accordance with Attachment I-3 (SLA Target SD-16), and work until the system is returned to service or an end-user acceptable solution is achieved. The Contractor shall notify the ACES SME of completion of the work.

g. Additional VTS meeting participants over 1,000 participants. (See Section 5.5, *Virtual Team Service (VTS) Seat*, for description of the VTS seat.)

h. Black and White (B&W) cost per copy over monthly volume band for Network Peripheral Seats (see Section 5.4, *Network Peripheral Seats*).

i. Color cost per copy over monthly volume band for Network Peripheral Seats (see Section 5.4, *Network Peripheral Seats*).

j. Excess cellular services usage (see Section 5.2, *Cellular Seats*).

k. Wireless Intelligent Mobile Hotspot service (including device and charger) with unlimited data plan. Allows a minimum of 5 concurrent connections per device on network (e.g., 3G/4G/LTE/HSPA).

l. Data transfer from ACES to ACES supported system (CLIN S-6A)

3.20 CUSTOMER RELATIONSHIP MANAGEMENT (CRM) AND OUTREACH

The Contractor shall manage customer and end-user relationships and conduct outreach activities with the following goals in mind:

a. Appreciate and recognize the differences among customer and end-user types (e.g., end-users, SME-identified Government points of contact for ACES issues at the local or organizational level, organizational managers, and senior staff), customer and end-user knowledge and skill levels (e.g., new end-users, long-time end-users, and prospective end-users), and areas of interest (e.g., UNIX/Linux, cellular devices, and network peripherals).

b. Understand changing and emerging conditions and business needs as they relate to ACES services and service offerings.

c. Expand end-users' knowledge and understanding of ACES services and service offerings, including providing educational and instructional information based on trouble call and service desk historical trend data to prevent future Incidents and Problems.

d. Facilitate end-users' obtaining needed services.

e. Engender positive perceptions of IT and the ACES 'brand' within NASA.

3.20.1 CRM and Outreach General Requirements

The Contractor shall establish a CRM program to learn more about end-users' (and, through extension, customers') needs and behaviors, develop trusting relationships with them, and ensure that they are effectively served.

The Contractor shall conduct proactive end-user outreach activities. The Contractor shall focus on reaching current and prospective end-users while conducting the following activities:

a. Disseminating information about and educating end-users on ACES services and service offerings.

b. Providing outreach materials on Contract changes to the Government.

c. Assisting end-users with obtaining ACES services through the service ordering procedures.

d. Promoting ACES services.

e. Identifying current and anticipating future needs of end-users.

f. Providing outreach materials on ACES seats and services, to include user's guides and feature descriptions.

Each ACES SME will identify IT points of contact at their Center for the Government and Contractor to partner with, guide, or provide insight into the various technical aspects of the Contract. The Contractor shall provide a corresponding technical contact for each Center for the major technical portions of the Contract. The ACES COR will issue a letter defining the services for which a Contractor's POC shall be required. Including, but not limited to, the following:

a. Tier 2/3 Service Desk Support Services

b. Computing Seats

c. Cellular Seats

d. Pager Seat

e. Network Peripheral Seats

f. VTS Seat

g. E-mail

h. Active Directory

i. IT Security

j. APC

k. Outreach

    l.   Safety
    m.   Configuration Item Management

The Contractor shall work closely with the ACES SME to ensure ACES products and services are ordered, approved, and communicated to end-users in a consistent manner using established processes. The Contractor shall channel communications with the end-users through the ACES SME.

3.20.2 CRM and Outreach Operational Requirements

To perform CRM and outreach, the Contractor shall:

a.   Schedule and conduct regular CRM and outreach meetings. If at any time during these meetings an attendee brings up a specific Incident or Problem that has or has not been reported to the ESD, the Contractor may discuss technical or other issues surrounding the issue in a general manner, and shall refer the attendee to the ESD for official reporting of the Incident or Problem. CRM and outreach meetings shall cover topics of interest, including, but not limited to, the following:
    i.   ACES project status and progress reports.
    ii.   ACES-provided software update/upgrade rollout status, schedules, testing opportunities, and training opportunities.
    iii.   Reminders about lead time required to prepare for seasonal events involving ACES services (e.g., arrival of summer interns and upcoming ACES seat refresh cycles).
    iv.   IT security tips and reminders pertinent to ACES services.
    v.   Identification of key ACES personnel and contact information.
    vi.   Upcoming ACES-related events.
    vii.   Tutorials on ACES processes and procedures.
    viii. Platform-specific systems information.
    ix.   New or less-widely-known or -understood technology offerings and service options.
b.   Develop a communications plan, outlining the methods, media, types of information communicated, and frequency of outreach to the end-user community, for each Agency initiative and project.
c.   Conduct ACES expositions/open houses at all Centers/Facilities to promote ACES services, ACES service offerings, and the latest technology available in the industry. The Contractor shall conduct a marketing campaign including traveling road shows and rolling town halls for CIOs, managers, and end-users.
d.   Conduct forums and focus groups at all Centers/Facilities to proactively inquire about the needs of end-users, inform, promote, engender enthusiasm, and instruct in ACES services.
e.   Publish a periodic online ACES newsletter (including archives), containing Agency-level and Center-level ACES news and information.
f.   Coordinate and collaborate with the ACES COR, ACES SME, or designee at each Center on development of outreach materials prior to their release or distribution to Centers/Facilities.
g.   Provide the end-user community with online access to information. Including, but not limited to, the following:
    i.   ACES CRM and outreach meeting presentation materials and resulting questions and answers (both recent and archived).
    ii.   Descriptions and definitions of all ACES seat types, services, and Service Options (including Standard Load, with versions, for each applicable Operating System).

    iii.   Information about ACES training opportunities and mechanism(s) to sign up for training.
    iv.   Refresh schedule, by Center, for the current year of the Contract.
    v.   Refresh process overview.
    vi.   System specifications for currently deployed equipment.
    vii.   A mechanism to report lost or stolen ACES-provided property.
    viii.   Other information and tools necessary to conduct CRM and outreach.

The Contractor shall communicate with end-users using the information residing in the CRM informational database and data that is technical and procedural in nature.

The Contractor shall identify and engage 5% (unless waived by the Government) of Center end-users in pilot tests to prove and ensure optimal performance of all Base, General, and Seat services before deploying to the general end-user population.

The Contractor shall use a communication approach (e.g., a Government-maintained non-ACES system administrator e-mail distribution list) at each Center to keep non-ACES system administrators informed of planned software updates/upgrades.

The Contractor shall coordinate with the ACES SME to notify non-ACES system administrators of each planned software update/upgrade at least fourteen (14) days in advance of the update/upgrade. This will allow these system administrators sufficient time to test and determine the planned updates/upgrades' impact on the applications they support and time to mitigate any risks to those applications. The Government will instruct non-ACES system administrators to submit any update/upgrade-related issues to the ACES SME for forwarding to the Contractor. The Contractor shall submit to the ACES SME, in writing, any update/upgrade-related issues (both resolved and unresolved, with their resolution status) that non-ACES system administrators report to the Contractor directly.

3.21 RESPONSE TO INFORMATION AND AUDIT REQUESTS

The Contractor shall provide requested data (e.g., data from specific end-user mailboxes and access logs) in response to FOIA requests and requests from the NASA Office of Inspector General (OIG) and other official sources, at the direction of the ACES COR.

3.22 SUPPORT FOR FEDERAL INITIATIVES

The Contractor shall work jointly with the Government to develop implementation plans to address Federal Government initiatives as they emerge. The Contractor shall implement these plans and provide support for their respective initiatives once approved by the Government.

The Contractor shall provide support for the Federal Government initiative for greening (as defined in Attachment I-23, *Glossary of Terms*) as detailed in the following current documents:

- Executive Order (EO) 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*
- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*
- Memorandum on Electronic Stewardship Requirements (available in the I^{3}P Technical Library for ACES)

- NASA Implementation Plan for Electronic Stewardship (available in the I³P Technical Library for ACES)

The Contractor shall provide support for the Federal Government initiative for cloud computing (as defined in Attachment I-23, *Glossary of Terms*) as detailed in the FY2011 NASA e-Gov Passback Guidance, which specifies that:

- By the FY2012 budget submission, for all new (planning/full acquisitions) major IT investments, agencies must complete an Alternative Analysis that includes a cloud computing based alternative.
- By the FY2013 budget submission, for all mixed lifecycle major IT investments, agencies must complete an Alternative Analysis that includes a cloud computing based alternative.
- By the FY2014 budget submission, for all steady-state major IT investments, agencies must complete an Alternative Analysis that includes a cloud computing based alternative.

The Contractor shall provide support for the Federal Government initiatives for greening and cloud computing as defined in future documents as they emerge.

3.23 SOFTWARE REFRESH PORTAL

The Software Refresh Portal (SRP) Application is a NASA-owned system developed to provide a centralized point of access to authorized software for ACES users and is described in the Software Refresh Portal document located in the I³P Technical Library for ACES. The application consists of a Web interface and a client component providing end-users with a simplified method to install approved software packages for PC and Macintosh systems.

The Contractor shall replace all Center specific SRPs with an Agency-wide Software Self-Service Manager (SSM) capability. As a part of the replacement process, the Contractor shall migrate all software packages contained in the Center SRPs into the Agency-wide SSM prior to initial deployment of the SSM. Agency wide applications, which are designated by NASA, shall be placed by the Contractor in a group or folder accessible by all ACES and non-ACES users with the ability to download and install if provisioned to do so. Center specific applications will be placed in folders or groups whose access will be limited to the users at those Centers with the ability to download and install if provisioned to do so. Unless the software/application title is procured through the Contractor, NASA will maintain all license tracking, reporting and compliance responsibilities.

The SSM shall be able to be used by both ACES and non-ACES managed systems, and the Contractor shall provide any client software needed to allow users to access and download software on the SSM to both ACES and non-ACES devices without additional costs to NASA. The SSM shall allow end users to install software without elevated privileges.

The Contractor shall ensure the following requirements of the SSM are met:
- The SSM shall function and be useable on NASA-STD-2804 operating systems that are currently running in the ACES-managed environment.
- The Contractor shall configure the SSM so that it contains separate areas for ACES-managed software (Agency standard load, Center overlays, or ACES managed software purchased from the APC) and non-ACES managed software. Center specific applications shall be separated

and neither visible nor accessible by users from other Centers.

- For ACES managed software purchased from the APC, the SSM shall allow users to view, select, and install software for installation, repair, update, and/or removal that has been provisioned for their seat. The SSM area for ACES-managed software purchased through the APC shall be configured to allow users to see what software is on their system that can be self-installed by the end user. Patches and upgrades for ACES-managed software purchased from the APC shall be placed in this area to allow the user the option of downloading prior to a mandatory installation.
- The Contractor shall create software packages that can be downloaded by users approved for entitlement of the software. The complete software packages shall be created for new software, upgrades to existing software, or patches to existing software. The Contractor shall perform basic engineering, testing, and deployment to the SSM that shall allow the end user to successfully download and execute the successful installation of the software package on an ACES seat. Successful installation on a non-ACES seat shall not be guaranteed.
- The Contractor shall configure the SSM to have the capability to categorize updates/patches in order of importance, such as but not limited to, mandatory, non-mandatory, critical, important, or other NASA defined categories.
- The Contractor shall enable access to standard out of the box reports that are part of the SSM product tool. The capability shall exist to allow export of the data from reports to allow further manipulation by NASA. End users or other NASA designees shall have read-only access to the standard SSM product reports.
- NASA will direct which packages are to be given a self-install option. The self-install packages will be made available by the Contractor to download by the end user. The Contractor shall utilize the EUSO change process to notify NASA when a requested application package is not suitable for user self-installation.
- The user will be able to view the size of the download or view the status of the installation of the software package to see what percentage of the installation is complete.
- Log history will be available for the user to see what actions have occurred.
- The SSM shall provide the capability for the user to have software that was previously installed by SSM and is no longer needed to be removed from their system.
- The SSM shall provide limiting and scheduling of deployment windows (specific times) for deployment of patches. Expedited patches/updates shall not be available for installation at the user's convenience. Mandatory patches/updates for installation shall be available for self-installation by the end user by 11:00 am Central time on the day of the mandatory install.

The Contractor shall provide software packaging services for non-ACES provided software (Support Level 3) that will be deployed through the SSM. The base packaging services are:

- Agency-wide, Center-wide, or group level within or across a Center enablement. All applications shall be visible to ACES and non-ACES users.
- Software version updates. Updated versions shall be imported into the SSM and older versions removed as directed by the EUSO change request
- Software Inventory (Requires an active CAE agent).
- Automated software installation (installation process initiated by SSM). The designated installation process or executable shall be called by the application package.
- Post-deployment installation verification. Limited to confirming the execution of the application installation process.

The Contractor shall work with the designated application owner or designated technical point of contact for verification and validation testing of deployment packages prior to release through SSM. Contractor verification is limited to the successful invocation of the installation process.

NASA will have the option to develop deployment packages for inclusion into the SSM which conform to the Contractor's published packaging standards.

Attachment I-9 includes the CLINs with detailed services for each CLIN to be used for packaging of software. SSM CLINs will be priced per occurrence, with the exception of the CLIN for NASA owned application with annual ACES services for patch and update; monitoring, testing, and distribution which will be priced annually. The following definitions apply:

- Targeted distributions. The ability to limit visibility and access to software packages to a specific set of seats. Capability needed to track licenses, who has installed, etc. to be included.
- Software Updates and Patching. The development of application packages that perform updates to installed software applications or apply vendor released capability patches.
- Enhanced installation automation. Scripted installation process(es) that perform pre-installation checks and/or post installation configurations.
- Service Desk. Escalation to the application owner
- Field Services Support. Tier 3 support for non-2804 application support.
- Enhanced reporting. Extend managed software signatures to enhance application version, patch and revision tracking.
- Application removal. Scripted process to remove an installed application to include specific files, directories and/or operating system settings.

Once a software package is available through the Software Packaging Services, the software package shall be made available in the SSM to users who have been granted access to the software. The contractor does not warrant the functionality of the software package or the successful installation on a non-ACES compute seat. This responsibility remains with the designated application owner or system administrator.

All applications identified as part of the Standard Load, by default, will be treated as mandatory applications and will receive automated delivery of EUSO authorized and approved security patches, service packs, and full version upgrades.

3.24 INCREASED MAC SUPPORT

The Contractor shall increase the MAC support at the Centers. The Contractor shall ensure there is a minimum ratio (rounded up) of one certified Apple technician for every 400 MAC seats per Center. (e.g. 400 MAC seats equals one (1) certified technician per Center, 401 MAC seats equals two (2) certified technicians per Center)

NASA WILL EVALUATE THE NUMBER OF MAC SEATS PLACED ON ORDER AT EACH CENTER ON A SEMI-ANNUAL BASIS AT A MINIMUM OR MORE FREQUENTLY SHOULD THE NEED ARISE AT ANY CENTER.

PWS 3.25 Mobile Device Management (MDM)

The contractor shall develop, test, deploy, and maintain a Mobile Device Management (MDM) system that securely manages ACES mobile devices and non-ACES mobile devices. The scope of the devices covered are all ACES mobility seats (examples such as Apple, Android, BlackBerry and Windows Phone mobile devices, tablets and other mobile devices such as iPads). For non-ACES devices, which can include both government-furnished and personal devices, there will be licenses provided for 10,000 additional devices which can include laptops (both ACES and non-ACES), tablets, other mobile devices and personal devices.

The contractor shall perform the following functions:
Execute administrator rights for the MDM solution – primary and back-up.
  a) Manage MDM licenses.
  b) Perform MDM lifecycle management functions as directed by NASA. For instance, trigger the request for a device wipe and/or certificate revocation.
  c) Provide costs per device for MDM services over the additional 10,000 devices.
  d) Implement multiple NASA MDM device policies based on organizational requirements that do not conflict with baseline policy.
  e) Coordinate with NASA on the communication of MDM device and use policies.
  f) Provide the capability for NASA to generate configurable reports.
  g) Implement the configurations and settings on mobile device groups as defined by NASA.
  h) Coordinate with NASA and the MDM vendor as necessary on the definition of content, roles, applications and policies for devices/users.
  i) Coordinate with NASA and the MDM vendor on the definition and implementation of certificate-based authentication and encryption for users, devices, and applications.
  j) Coordinate with the MDM vendor to ensure that a scalable architecture is in place to meet NASA's user and data needs.
  k) Provide asset management data for all devices that have the MDM solution installed (for example: device count, device type, and/or operating system).
  l) Provide the ability to generate system and administrative analytic capabilities (pre-defined reports, statistics, etc.).
  m) Provide the ability to generate data on center mobile devices enrolled in MDM.
  n) Coordinate with NASA and the MDM vendor on certificate lifecycle management.
  o) Coordinate with NASA and the MDM vendor on application lifecycle management.
  p) Provide MDM services as defined by NASA and the MDM Scope Definition and MDM Requirements Document which can be found in Attachment I-28.
  q) Work with NASA to continue to evolve and advance the capabilities of the MDM environment throughout the life of the ACES contract.

3.26 Machine-to-Machine Wireless Service

The contractor will provide a domestic machine-to-machine (M2M) wireless service that will enable NASA to obtain carrier data communications. No hardware or hardware maintenance will be provided as a part of this service.

The M2M and approved ESRS order. The monthly service will be based upon the plan and data volume. NASA will be responsible for limiting any overages, and any overage charges will be invoiced as incurred. Support for Move, Add, and Changes (MACs) will be available for service flexibility. For plan changes, a service request will be submitted through ESRS to add a line, change a line, or de-subscribe a line, including changing an existing line to a higher or lower service plan. Actual usage will be data plans will be orderable through a service in ESRS and the Contractor will obtain and provide to the end-user the M2M data plan for the specified device within 3 business days of a validated providing monthly in accordance with Attachment I-2, *DPD*, DRD IT-01, *Agency Cellular Seat Detail Report.*

4.0 BASE SERVICES

The Contractor shall provide services typically tied to individuals rather than devices to NASA employees (contractor and civil service) and authorized personnel. The unit of measure for Base Services will be NASA's modified N2 number for the applicable fiscal year. (see Attachment I-23 Glossary of Terms) A total of five (5) End-user Base Service Bands are specified in Attachment I-5, *Summary of Base Services and Attachment I-9 CLIN Pricing*. Base Services include:

a. E-mail and collaborative calendaring services: The Contractor shall provide e-mail and collaborative calendaring services (e.g., Client Access License (CAL) and e-mail storage).

b. Active Directory services: The Contractor shall provide Active Directory services (e.g., domain account, group management, group policy object development, and deployment).

c. Loaner pool management: The Contractor shall manage all ACES devices designated as loaners.

d. Print queue infrastructure management: The Contractor shall provide and manage the infrastructure needed to support network peripherals (e.g., create and maintain all print queues and associated infrastructure for ACES and non-ACES printing devices).

e. Security management: The Contractor shall provide and manage IT security, data at rest services, physical security, emergency management, and emergency preparedness and response for all services.

f. Software license management: The Contractor shall provide a fully managed and supported shared license infrastructure, including management of the distribution of all Government-provided software licenses under the authorization of the ACES SME.

g. Instant Messaging services: The Contractor shall provide Instant Messaging (IM) services for NASA.

h. Two-factor user authentication token distribution: The Contractor shall provide registration authority functionality for the issuance of authentication credentials and digital certificates as well as the distribution of two-factor authentication hardware tokens.

The Contractor shall restore Base Services, after an Incident ticket is received, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target IM-1).

The Contractor shall be responsible for the Base Services beginning with the Wave 1 Implementation date. To effect this responsibility, the Contractor shall provide all necessary support at the Enterprise (Agency) level. Center-level support needed to deliver the Base Services shall be provided by the ACES Contractor at the Wave 1 Centers starting on the Wave 1 Implementation date. The ACES Contractor shall coordinate with the incumbent contractor at the Wave 2 and Wave 3 Centers after the Wave 1 Implementation date until assumption of full Center-level responsibility for the Base Services on the Implementation date for each of those Waves (Waves 2 and 3). Thus, Center-level support needed to deliver the Base Services shall be provided by the ACES Contractor at the Wave 1 and 2 Centers starting on the Wave 2 Implementation date. The ACES Contractor shall coordinate with the incumbent contractor at the Wave 3 Centers after the Wave 2 Implementation date until the Wave 3 Implementation date.

4.1 E-MAIL AND COLLABORATING CALENDARING SERVICES

The Contractor shall provide two proposals for e-mail and collaborative calendaring services, one being the continuance of the existing NOMAD system and the other being an innovation approach. The Contractor shall provide NOMAD reporting in any implementation of e-mail and collaborative

calendaring services, in accordance with Attachment I-2, *DPD*, DRD IT-10, *NOMAD Services Reports*.

4.1.1 Current NOMAD Service

The Contractor shall operate and maintain the current NOMAD service, a single system providing a unified and secure collaborative environment, meeting the operational requirements as described in the *NOMAD Configuration and Service Level Objectives (SLOs)* and *NOMAD System Description Document*, which are provided in the I³P Technical Library for ACES. This system ensures access to NASA's civil service and contractor workforce is available to the public and NASA personnel through a centrally managed directory and an @NASA.GOV e-mail address. The Contractor shall operate the existing NOMAD system and infrastructure to ensure the following requirements are met:

a. Maintain e-mail and collaborative calendaring tools capable of supporting all NASA badged personnel. This includes providing secure Web access to e-mail, calendars, contacts, notes, and tasks.

b. Provide support for NASA-STD-2804*x* approved e-mail and calendaring clients, including Microsoft Windows, Apple, Linux, and cellular platforms.

c. Integrate NOMAD into the Agency authentication and directory infrastructure.

d. Ensure secure access to the NOMAD system from anywhere in the world.

e. Provide all NCAD-supported NASA badged personnel with the capability to securely share large files with other NOMAD users as well as individuals outside the Agency.

To meet the high-level requirements listed above, the Contractor shall ensure the following operational requirements are met:

a. Create and maintain e-mail accounts for all NASA personnel, role-based functions, and resources as requested by the Government. Provide secure access to e-mail accounts via Webmail. The Contractor shall be responsible for expanding the existing hardware and software to accommodate any growth. These costs shall be covered in the Base Services.

b. Delete NOMAD accounts upon notification from the NASA Account Management System (NAMS), in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-18).

c. Create Distribution Lists (DLs) as requested by the Government, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-19). The Government will be responsible for populating and maintaining the membership of a distribution list once created.

d. Create and maintain Dynamic DLs (DDLs), e.g., NASA site groups, civil servants, and contractors, as changes occur. DDLs shall not be limited by Center; some may cross Centers.

e. Provision ninety (90) percent of the end-user accounts with a NOMAD-standard (currently 1GB) mailbox and ten (10) percent of the end-user accounts with a NOMAD-expanded (currently 2 GB) mailbox. The 10 percent group will be identified by the Government. (Mailbox sizes increased with the Award of IUP-ACES-0076 Version 1.4 awarded in contract modification #130)

f. Backup each complete mail store daily and the entire e-mail system semi-weekly without end-user interruption of service. The retention period for backup shall be thirty (30) days. The backup window for the e-mail system shall be 5 p.m. to 7 a.m. Central Time.

g.   Ensure all SMTP traffic in and out of the e-mail system is logged. The system log shall include relevant message routing information, including sender and recipient e-mail addresses, size, date, and time.

h.   Ensure all services are clustered or load balanced ensuring no single point of failure.

i.   Provide an Anti-Spam and Anti-Virus solution capable of processing 600,000 messages per hour.

j.   Automatically archive the mailboxes of the Agency's senior management (approximately 300 users) to capture the e-mail and calendar items for accumulation and transfer to the National Archives and Records Administration (NARA).

k.   Provide near real-time monitoring for:
>   i.   Performance.
>   ii.   Resource exhaustion.
>   iii.   Incident and Problem debugging.
>   iv.   Incident and Problem resolution.

l.   Provide the following IT security services:
>   i.   Assessment of the current state of the system including technical configuration and documentation.
>   ii.   Ongoing support to meet FAR 1852.204-76, *Security Requirements for Unclassified Information Technology Resources*.
>   iii.   Arrange for penetration testing in accordance with Agency requirements.
>   iv.   Provide requested data from specific end-user mailboxes in the case of IT security or safety Incidents, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-20).

m.   Develop, maintain, and execute standard process and workflows for the NOMAD operational activities.

n.   Provide an off-line address book and update it every 24 hours.

o.   Provide outreach to the NOMAD end-user community for planned and unplanned activities.

p.   Provide necessary interfaces between the NOMAD infrastructure and Contractor-provided Smartphone solutions.

q.   Administer and manage the existing NOMAD server virtualization environment including the NOMAD development and test environment.

r.   Provide the ability to simulate production services, as listed in the *NOMAD System Description Document* (available in the I³P Technical Library for ACES), in a virtual environment for testing. Provide the capability to host up to one hundred (100) test accounts up to 1GB in size. Except for the test user mailboxes, all data shall be local to the virtual environment. Test user mailboxes shall be moved from the production mailbox server Storage Area Network (SAN) subsystem to the virtual environment disk subsystem and back after testing is completed.

s.   Administer and manage Simple Mail Transfer Protocol (SMTP) Relays for NOMAD provided and managed SMTP gateways at each Center.

t.   Perform the following tasks:
>   i.   Review change requests.
>   ii.   Test change requests as needed within the mean of the current environment.
>   iii.   Assess special system access approvals.
>   iv.   Monitor system logs.
>   v.   Ensure documentation is updated.
>   vi.   Attend weekly engineering/configuration management meetings.
>   vii.   Coordinate outreach questions and communication about security related items.

u.   Refresh NOMAD infrastructure (see listing in the I³P Technical Library for ACES) so that each piece of NOMAD equipment never exceeds five (5) years of age.

The Contractor shall obtain approval of all system modifications from the NOMAD Configuration Control Board and document the modifications prior to implementation.

4.1.2 Innovation Approach

4.1.2.1 General Requirements

The Contractor shall propose an innovation approach to providing collaborative e-mail and calendaring services across NASA. The innovation approach shall support the use of the clients listed in NASA-STD-2804x, *Minimum Interoperability Software Suite*, (with the exception of Outlook Web Access (OWA)) to provide access to the e-mail and calendaring services as well as support Web access. The clients and the server shall continuously synchronize data to ensure the e-mail and calendar information is current. The innovation approach shall also support the e-mail and calendaring features and functions of the Agency Smartphone seats. The e-mail and calendaring clients, Smartphones, and Web access shall be interoperable to ensure that users of the different clients and Smartphones can collaborate. The proposed solution shall be integrated with the NASA Consolidated Active Directory (NCAD).

The innovation approach shall meet the requirements listed in Sections 4.1.2.2, *Information Technology Security Requirements*, through 4.1.2.8, *Archiving Requirements*, and conform to Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-18).

The system shall provide reports in accordance with Attachment I-2, *DPD*, DRD IT-10, *NOMAD Services Reports*.

4.1.2.2 Information Technology Security Requirements

The Contractor shall meet all of the requirements of the Federal Information Security Management Act (FISMA). The proposed system shall meet the moderate security controls defined in the National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53, *Recommended Security Controls for Federal Information Systems and Organizations*. The Contractor shall perform a security assessment on the proposed solution in accordance with NIST SP 800-53A, *Guide for Assessing the Security Controls in Federal Information Systems*, and shall successfully complete a security Certification and Accreditation (C&A), in accordance with NIST SP 800-37, *Guide for the Security Certification and Accreditation of Federal Information Systems*.

4.1.2.3 Transition Requirements

The Contractor shall provide for a transition from the in-house NOMAD system to the innovative solution. The transition requirements are as follows:

a.   All legacy Exchange data, including mailboxes, calendars, notes, tasks, and contacts, shall be migrated for all user and resource accounts.
b.   All existing Distribution Lists (DLs), query-based DLs, and external contacts shall be supported.
c.   All existing directory views (e.g., view by all Centers, view by Center) shall be supported.

    d.   Individual users shall experience no more than a single night outage during data migration.

    e.   All client and Smartphone configuration settings shall be functionally preserved to ensure a transparent user experience.

4.1.2.4 *Anti-Virus and Anti-Spam Requirements*

The Contractor shall provide both Anti-Virus and Anti-Spam protection for all inbound and outbound messages. The Contractor shall regularly scan the server message stores for infected messages after virus definition files are updated. As detailed in the *NOMAD System Description Document* (available in the I^{3}P Technical Library for ACES), NASA currently uses ProofPoint and Trend Micro ScanMail to perform Anti-Virus and Anti-Spam scanning. The following are the detailed anti-spam and anti-virus requirements:

    a.   The system shall be capable of identifying spam by searching on specific predefined and Government-defined keywords.

    b.   The Contractor shall monitor the spam@nasa.gov function mailbox for messages submitted by users that were not detected as spam and use those messages to improve the automated identification process.

    c.   The system shall block messages from hosts whose IP addresses match predefined and Government-defined lists.

    d.   The system shall block messages from hosts whose hostnames match predefined or Government-defined lists.

    e.   The system shall block messages from Government-defined and user-defined sender e-mail addresses.

    f.   The system shall allow the Government to define lists of host IP addresses that do not get blocked by anti-spam countermeasures.

    g.   The system shall allow the Government to define lists of hostnames that do not get blocked by anti-spam countermeasures.

    h.   The system shall allow administrators and users to define lists of e-mail addresses which do not get blocked by anti-spam countermeasures.

    i.   The system shall provide automatic updates to spam signature filters.

    j.   The system shall provide the capability to perform reverse DNS lookup to allow rejection of IP addresses not resolved with DNS.

    k.   The system shall provide the capability to support both administrative and user quarantines to hold messages suspected as spam.

    l.   The system shall allow users to request e-mail digests sent on a regular basis containing messages that have been quarantined.

    m.   The system shall allow users to disposition messages that have been quarantined (e.g., release, delete, mark as not spam, etc.).

    n.   The system shall provide the capability to automatically delete quarantined messages not dispositioned after a Government-defined number of days.

    o.   The system shall provide a capability to tag messages as possible spam (e.g., prefix the word SPAM) on the "Subject:" line before delivery to the user.

    p.   The system shall support scoring thresholds that control the automatic disposition of messages (e.g., deliver, tag, quarantine, and block).

    q.   The system shall provide the capability to track actions performed on all messages.

    r.   The system shall provide detailed logs of the actions performed on all messages.

    s.   The system shall provide open relay protection.

    t.   The system shall provide anti-phishing protection.

u.   The system shall provide anti-virus protection.

v.   The system shall examine all files in unencrypted archives (e.g., zip, tar, and etc.). The system shall provide the capability to warn users when encrypted archives could not be scanned for virus.

w.   The system shall block messages containing attachments with extensions that match a Government-defined list of banned file types.

x.   The system shall provide automatic updates to virus definition databases.

y.   The system shall provide the capability to support rate control and concurrent connection protections.

The system shall provide user access to controls and quarantines via a secure Web interface.

4.1.2.5 NASA Post Forwarder Requirements

The NASA Post Forwarder (NPF) system is the "front door" to the @nasa.gov domain and several Center legacy @center.nasa.gov domains and its primary function of the NPF system is to route all inbound and outbound e-mail for the Agency. The requirements for the NPF system are as follows:

a.   The system shall be the Mail eXchanger (MX) record for the @nasa.gov domain accepting all inbound e-mail for that domain.

b.   The system shall be the MX record for the legacy @center.nasa.gov domains accepting all inbound e-mail for those domains.

c.   The system shall be capable of rejecting connections from specific IP addresses.

d.   The system shall check recipient addresses against the translation database. If there is a matching record, the message shall be routed to the deliverable address of the record. If there is no matching record, and there is no specific delivery route for the recipient domain, a bounce message shall be returned to the sender.

e.   The system shall check the Agency NASA Enterprise Directory (NED) processing FTP site for a candidate translation database every fifteen (15) minutes. If the date/time of the candidate translation database is newer than the production translation database on the NPF system, the candidate translation database shall be downloaded by the system for examination.

f.   The system shall inspect the candidate translation database and perform "sanity checks" to ensure the file is correct and compete. If system detects an error, it shall reject the candidate translation database. In either situation, an e-mail shall be sent to a Government-provided list of recipients reporting success or failure. If the candidate translation database is good, the system shall archive the old production translation database and place the candidate translation database into production.

g.   The system shall be capable of delivering messages with an average routing time of less than sixty (60) seconds per message.

h.   The system shall be capable of handling peaks of double the average messaging traffic for any time of day without introducing queuing delays.

i.   The system shall log all incoming and outgoing message traffic. These logs shall be accessible by designated NASA employees.

4.1.2.6 Center Simple Mail Transport Protocol (SMTP) Gateway Requirements

The Contractor shall provide SMTP Gateways for all Centers, excluding IVV, GISS, NSSC, WFF, and WSC. These SMTP Gateways shall be the single inbound and outbound relay for messaging

traffic as controlled by Center firewalls. The requirements for the Center SMTP gateways are as follows:

a.   The Gateways shall act as the relay for intra-Center SMTP traffic.
b.   The Gateways shall act as the primary entry and exit for all SMTP traffic.
c.   The Gateways shall allow any internal host to use it as the SMTP relay to any host outside the Center.
d.   The Gateways shall restrict inbound traffic to a Center Postmaster-approved list of Center systems (e.g., hostname.center.nasa.gov).
e.   The Gateways shall log all incoming and outgoing message traffic both locally and on a centralized logging server. These logs shall be accessible by designated NASA employees.
f.   The Gateways shall support alias forwarding, as defined by Center Postmasters.

4.1.2.7 Large File Transfer (LFT) Requirements

The Contractor shall provide a means to perform large file transfers. As detailed in the *NOMAD System Description Document* (available in the I³P Technical Library for ACES), NASA currently uses the Accellion product to provide LFT services. The requirements for LFT are as follows:

a.   The system shall allow internal users to share files with internal and external users.
b.   The system shall use the Agency User ID (AUID) and Active Directory password for authentication of internal users.
c.   The system shall provide temporary accounts/passwords for the authentication of invited external users.
d.   The system shall provide a Web-based user interface for all users.
e.   The system shall utilize a Web-based upload/download process.
f.   The system shall utilize a secure FIPS 140.2-compliant transfer protocol.
g.   The system shall provide the capability to transfer files up to 10GB.
h.   The system shall send e-mail to participants to inform them of file availability.
i.   The system shall support NCAD DLs as participant lists.
j.   The system shall support the capability to automatically remove uploaded files after a Government-defined amount of time.
k.   The system shall support the capability to automatically remove uploaded files after successful download by the recipient.
l.   The system shall support the capability to send automatic download receipts.
m.   The system shall log all LFT activities. The logs shall be accessible by designated NASA employees.
n.   The system shall support anti-virus scanning of upload files and regular scanning of stored data.
o.   The system shall support the capability to limit the file types for upload.

4.1.2.8 Archiving Requirements

NASA has identified approximately three hundred (300) senior NASA managers for archival of all messages and calendar items for use by the NASA Records Manager. As detailed in the *NOMAD System Description Document* (available in the I³P Technical Library for ACES), NASA currently uses Mimosa NearPoint to provide archiving services. The requirements for the archival services are as follows:

a.   The system shall capture all messages and calendar changes for up to 300 senior managers.
b.   The system shall require no user interaction.
c.   The system shall support the capability to export data for specific users in an open non-proprietary format for transfer to the NARA.
d.   The system shall support searches by keyword for a specific user.
e.   The system shall support searches by keyword across all users.
f.   The system shall support access control using Active Directory permissions.
g.   The system shall support audit logging of all access changes and requests.

4.1.3 Response to E-mail Information and Audit Requests

For either of the approaches detailed in Sections 4.1.1 and 4.1.2, *Current NOMAD Service*, and *Innovation Approach*, respectively, upon official request from the NASA IT Security Manager(s) (Center or Agency), the NASA Office of Chief Counsel, the NASA SOC, the NASA OIG, or a Freedom of Information Act (FOIA) requestor, the Contractor shall perform any combination of the following:

a.   Conduct targeted monitoring of user(s) for various periods of duration that will involve:
   i.   Full export of user's current server mailbox data.
   ii. Restoration of all available server mailbox data from backup media (e.g., tapes or SANs). Restoration from tape is limited to the tape rotation period for nightly and weekly backups, as detailed in the *NOMAD System Description Document* (available in the I^{3}P Technical Library for ACES).
b.   Remove from server mailboxes messages that have been determined to be phishing attempts that can be identified by sender, subject, or other unique searchable header(s) provided by the requestor.
c.   Remove from server mailboxes messages that have been determined to contain classified material that can be identified by sender, subject, or other unique searchable header(s) provided by the requestor.
d.   Remove from server mailboxes messages of unspecified nature that can be identified by sender, subject, or other unique searchable header(s) provided by the requestor.
e.   Remove from restored mailboxes messages that were previously determined to be phishing attempts, contain classified material, or were otherwise identified by the requestor.
f.   Provide support in using all search capabilities of the system used to satisfy the requirements of Section 4.1.2.8, *Archiving Requirements* (currently the Mimosa NearPoint Archiving system), hosting senior NASA manager mailboxes, as detailed in the *NOMAD System Description Document* (available in the I^{3}P Technical Library for ACES).
g.   Provide routing information for selected messages that can be identified by sender, recipient, or other unique searchable header(s) provided by the requestor.
h.   Extract log files from all Client Access Server (CAS) servers, as detailed in the *NOMAD System Description Document* (available in the I^{3}P Technical Library for ACES).
i.   Extract traffic logs from the NPFs, as detailed in the *NOMAD System Description Document* (available in the I^{3}P Technical Library for ACES). The Contractor shall be required to extract a subset of the log data that can be identified by sender, recipient, subject, or other unique searchable header(s) provided by the requestor.
j.   Initiate response to IT Security requests on a twenty-four (24) hours a day, seven (7) days a week (24/7) basis and complete the activity in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-20).

4.2 ACTIVE DIRECTORY SERVICES

The Contractor shall operate and maintain the NCAD infrastructure, as defined by and in accordance with NCAD requirements documents entitled *Baseline SMAD Training Plan*, *NAF-100 NCAD Concept of Operations*, *NAF-200 NCAD Training Plan*, *NAF-400 SOP-Configuration Change Board*, and *NAF Baseline Requirements*, which are available in the I³P Technical Library for ACES. NCAD is a key component of NASA's Identity, Credential, and Access Management (ICAM) architecture and provides NASA with a single authentication forest for all Microsoft and Apple users, workstations, and Active Directory aware application resources (e.g., servers). NCAD consists of the following:

a. <u>NASA Agency Forest</u> (NAF): Collection of replicating domain controllers distributed to each Center.
b. <u>Active Directory Management System (ADMS)</u>: Active Directory Management System (ADMS): Collection of servers and Active Directory management software that comprise the system administration and AD object management tools for the NAF. Core locations for ADMS servers are NASA Marshall, NASA Goddard, NASA Johnson, and NASA Ames. A number of individual Centers may maintain a local ADMS server as well.
c. <u>Security Monitoring for Active Directory</u>: Collection of servers at MSFC that monitor the distributed NAF and ADMS to ensure in-depth security of the NCAD IT infrastructure.

The Contractor shall ensure the following operational requirements are met:

a. Maintain Active Directory (AD) accounts for NASA personnel as requested by the Government and authorized through the NAMS. The NCAD infrastructure currently supports all associated workstation, server, and policy objects for all Centers and supporting facilities (except JPL).
b. Interface with the ICAM team. This will require development effort to accommodate NAMS requirements for autoprovision, modification, and deprovision of accounts and maintenance of all targeted objects in the NAF with NAMS data. Manual maintenance of certain objects will be required until all automated interfaces are complete. When directed by the NAMS interface, provision and deprovision AD accounts in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SD-21 and SD-22).
c. Backup each AD structure (e.g., Group Policy Objects and user accounts) daily without end-user service interruption. The retention period for backups shall meet NASA requirements as defined in NPR 1441.1*x*, *NASA Records Retention Schedules*, for this type of data.
d. Maintain and upgrade, and deploy additional Domain Controllers and associated management systems, as required, to Centers. The current size of the Directory Information Tree (DIT) is approximately 4 Gigabytes, and shall be able expand up to 50 percent without issue. Growth beyond this will require design review and likely upgrade of the hardware configuration.
e. Manage, maintain, and operate all Domain Controllers, management systems and other associated systems, and peripheral equipment.
   i.   Upgrade and replace equipment as needed to meet operational need, e.g.

performance, end-of-life issues, geographical expansion, or for growth of the DIT.

    ii.   Maintain vendor or OEM Incident and engineering support appropriate to the criticality of the NCAD service.

f.   Support use of the management software - currently NetIQ and Centrify software (NASA will provide the Centrify licenses) - on behalf of authorized users. This includes deployment of group policy and other changes per approved workflow, and help desk support for issues related to use of the management software by authorized users.

g.   Management, maintenance, and authoritative operations of the DNS for all records in the DNS namespace "ndc.nasa.gov" "underbar" zones that are related to proper operation of the NAF. This support shall require interface with the Internet Protocol Address Management (IPAM) Operations Team, which is part of the NICS contract. Specifically, the NAF Operations Team will:

    i.   Support delegation for the underbar zones as directed by the IPAM Operations Team and NAF design.

    ii.   Provide appropriate DNS forwarding operations to IPAM services for all queries for which the NAF is not authoritative.

h.   Provide continuous monitoring for:

    i.   Performance.

    ii.   Resource exhaustion.

    iii.   Incident and Problem debugging.

    iv.   Incident and Problem resolution.

i.   Provide the following IT security services:

    i.   Assessment of the current state of the system including technical configuration and documentation (first assessment following assumption of duties, and yearly thereafter).

    ii.   Ongoing support to meet FAR 1852.204-76, *Security Requirements for Unclassified Information Technology Resources*.

    iii.   Arrange for penetration testing in accordance with Agency requirements..

    iv.   Provide access to the User Authentication Logs in case of IT security Request.

j.   Maintain and execute standard processes and workflows for all operational activities.

k.   Provide outreach to the NCAD end-user community for planned and unplanned activities by producing e-mails about system activities and updating the NCAD Web site. Prepare the NASA community for any major infrastructure changes by developing and delivering presentations for the sites and tailoring those presentations as necessary to describe likely impacts and preparations required.

l.   Provide an AD that supports FIPS-compliant, NASA-approved Smartcard authentication at all Centers.

m.   Provide consistent access control to Agency AD aware resources at all NASA facilities.

n.   Provide consistent accounting/auditing for Agency Active Directory resources at all NASA facilities.

o.   Provide consistent Configuration Management for Agency Active Directory and resources at all NASA facilities.

p.   Provide consistent synchronization with the ICAM infrastructure.

q.   Provide authentication for the existing Agency-wide and program-specific resources that utilize AD native capabilities (e.g., Agency Messaging Service, SharePoint, LCS, SQL Server, and Short Message Service (SMS)).

r.   Develop and maintain an operational mechanism for the efficient deployment of Agency- issued Active Directory Group Policy.

s.   Provide consistent Agency-wide reporting methodology for the verification and validation of Active Directory Group Policy.

t.   Support information security defense in depth policies.

u.   Implement the NASA-defined AD schemas across the NAF.

v.   Participate in the NCAD Configuration Control Board.

w.   Provide a central authentication source for supported non-Microsoft based computers.

x.   Provide centralized domain membership for workstations and servers.

y.   Provide the operations and maintenance of all NAF/ADMS/Security Monitoring for Active Directory (SMAD) servers housed in Center server facilities (domain controllers) and in locations with NISN connectivity (e.g., ADMS).

   i.   Infrastructure support is twenty-four (24) hours by seven (7) days by three-hundred and sixty-five (365) days/year.

z.   Provide day-to-day maintenance and operation of the NAF/ADMS/SMAD infrastructure to include such activities as hardware maintenance, software patching, system upgrades, and system activity monitoring.

   i.   Complete installation of all patches in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SMS-1 and SMS-2), unless otherwise specifically directed by NASA.

aa. Maintain system configuration on both the NAF/ADMS/SMAD infrastructures and implement any changes to system architecture as directed by NAF/ADMS/SMAD engineering.

bb. Develop Operational Level Agreements (OLAs) between ACES and other contractors and contracts, with NASA concurrence, to support delivery of service to end customers.

cc. Refresh NCAD infrastructure (see listing in the I^{3}P Technical Library for ACES) so that each piece of NCAD equipment never exceeds five (5) years of age.

dd. Design, deploy, manage, maintain and operate appropriate Active Directory infrastructure, consistent with approved AD object management tools (currently NETIQ and Centrify) to support NASA-Approved Smartcard user authentication for all supported operating systems identified in the NASA standard 2804 (e.g. Windows, Linux, Macintosh), and to enable deployment and management of security baselines and NASA mandated configurations.

   i.   Implement approved Contractor-designed Active Directory structures, including a Centrify zone-based management model appropriate for management of ACES-managed and non-ACES compute seats. The design shall be consistent with NCAD architecture and shall require NCAD Engineering collaboration and review and NCAD Configuration Control Board review and approval. Enable access for authorized ACES and non-ACES system administrators.

      a.   Enable and manage access to all Active Directory management tools provided to all authorized users.

b. NASA requires authorization for access to NCAD management tools be provisioned through the NASA Access Management System (NAMS). Additional workflows or modification to existing workflows in NAMS may be requested through the EUSO and Agency ICAM services.

ii. Validate AD object management software is integrated, monitored, available, patched, and upgraded to maintain industry standard and vendor-supported software versions.

iii. Enable access to the Active Directory Management tools that is compliant with Federal requirements for strong authentication (OMB M-11-11).

All system modifications and upgrades shall be reviewed and approved by the NCAD Configuration Control Board and documented in the change request system.

4.3 LOANER POOL MANAGEMENT

The Contractor shall offer loaner pool management services for all Computing, Cellular, Pager, and Network Peripheral seat types. All types of seats ("S", "M", "B", and Multi-Functional Device (MFD) seats) with a hardware platform can be purchased and designated for the loaner pool. The loaner pool management service in the Base Services provides for the management and distribution of these seats.

The Government will identify seats as "loaners" to be managed by the Contractor. The loaner seats will be subscribed to by the customer through the ESRS. The customer will designate which Center organizational unit(s) will have access to the seat. The Contractor shall be responsible for staffing, equipping, and managing the Loaner Pool. Each loaner seat shall be managed in accordance with the seat type ordered. The costs to maintain the seat are paid through the seat subscription. The cost associated with Section 4.3 is only for the Loaner Management services as defined in this section.

The Contractor shall provide temporary MFD support on an as-needed basis. The Contractor shall deliver (including all appropriate supplies), install, set-up, ensure the temporary MFD is operational and removal of equipment after the event. Temporary MFD support may be required in a variety of geographical locations (e.g. conference support at hotels and locations off-center). The Contractor shall account for after-hours and weekend delivery and/or pick-up.

4.3.1 Loaner Pick-up and Drop-off

The Contractor shall provide loaner pick-up/drop-off services at up to three Government-specified sites per Center as locations for end-users to pick up and drop off loaner devices. The Contractor shall make loaners available for pickup, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-23). Customer-requested pickups with less than the required advance notice may be charged as a critical uplift, if pre-approved by the ACES CTM (as documented in a written communication to the Contractor). The Contractor shall document the justification for critical uplift in the ticket.

4.3.2 Loaner Services

The Contractor shall provide the following services for ACES seats that are identified as "loaners:"

    a.   Maintain Agency software Standard Load to NASA-STD-2804x.
    b.   Maintain software ordered through the APC in addition to the Standard Load.
    c.   Recharge and/or exchange batteries.
    d.   Ensure end-user-specific configurations are in place before loaner is issued (including the NASA Public Key Infrastructure (PKI) certificates or other user credentials).
    e.   Assist customers with set-up and operation of the loaner seat (e.g., remote access client (e.g., Virtual Private Network (VPN)), as needed.
    f.   When a loaner seat is returned by the customer, sanitize end-user data from the loaner device, then return the loaner to the Loaner Pool.

4.3.3 Loaner Tracking

The Contractor shall establish an online Loaner Pool tracking/request/sign-in/sign-out system that is approved by the Government. The Contractor shall use this tracking system to maintain the current status of all seats in the Loaner Pool. Records kept shall include the beginning and ending dates of each loan and the name of the person to whom each device was loaned. The Contractor shall also compile summary usage data for each type of loaner seat and each peripheral device. This status, loan history, and summary usage data shall be available to the ACES SME or designee through online, read-only access.

4.3.4 Loaner Peripherals

All peripherals that come standard with a loaner device shall be provided with the loaner seat. In addition, the customer may request any or all of the following peripherals (e.g., international power adapter and extra batteries) that are compatible with or designed for the seat to accompany the loaner seat in the Loaner Pool.

4.4 PRINT QUEUE INFRASTRUCTURE MANAGEMENT

The Contractor shall create (in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-24)) and manage print queues and associated infrastructure for all ACES Network Peripheral seats and other network printers and multi-functional devices. The Contractor shall process requests to restrict end-user access to print queues. The Contractor shall clear print jobs that become held in the queue.

4.5 SECURITY MANAGEMENT

4.5.1 IT Security

The Contractor shall:

    a.   Implement and maintain a NASA enterprise-wide anti-malware solution (including anti-virus, anti-spyware, and anti-adware) for desktops, laptops, and ACES managed servers that provides automated updates of anti-malware signatures at least once

every 24 hours, software updates, and automated logging and reporting. Reporting from the anti-malware solution shall be in a common, parse-able, electronic format (preferably Extensible Markup Language (XML)), at a minimum weekly, to the NASA SOC, in accordance with NASA policies and procedures.

b. Provide anti-malware client software and licenses for all NASA desktop and laptop computers that support such software, regardless of whether a computer is provided or supported by the Contract.

c. Deploy all vendor provided operating system and application patches, service pack and hot-fixes regardless of the vendor rating on ACES-managed systems as detailed in the paragraphs below. The contractor is responsible for managing, reporting and verifying the implementation of patches, service packs, and hot-fixes to address functionality, stability, and security issues or vulnerabilities, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SMS-4 and SMS-5) and NASA IT Security Handbooks:

    i. System configurations and patching status for all information systems provided under and in support of this contract shall be reported using the NASA patch reporting environment, IT Security Enterprise Data Warehouse (ITSEC-EDW). The contractor will facilitate resolving discrepancies in data between the contractor and agency reporting systems. The contractor will continue to report SLA compliance utilizing the contractor reporting system until the metrics are modified as a joint effort between the contractor and NASA. The contractor will provide read only access to their reporting system to NASA designated security personnel for auditing purposes to be used at NASA's discretion in conjunction with ITSEC-EDW data.

    ii. Successfully test all patches, service packs, and hot fixes before deployment, in an environment commensurate with the operating environment.

    iii. All patches that are categorized by the vendor as "Critical" or "High", shall be applied by the contractor per the NASA approved patching process.

    iv. Apply all other patches, service packs, and hot-fixes regardless of vendor designation to ACES-provided/managed end-user systems, ACES-managed applications, and ACES-managed servers, as required in accordance with the EUSO Change Management process.

    v. Other mitigation tools and capabilities (such as firewall rules) can be used when appropriate to protect ACES-provided/managed end-user systems, ACES-managed applications, ACES-managed services, and ACES-managed servers until vulnerabilities can be mitigated by applying patches or making approved configuration changes.

    vi. In a configuration freeze, ACES-provided/managed end-user systems, ACES-managed applications, and ACES-managed servers shall follow mission management direction if mission management decides to adjust the configuration change or patch deployment schedule in accordance with mission requirements.

d. Provide access to the (unencrypted) user Desktop Files and Logs in case of IT security incident requests.

e. Ensure all ACES systems (e.g., desktops, laptops, servers) and ACES applications are compliant with Agency-mandated security configurations (e.g., NASA

approved US Government Computer Baselines (USGCB), and Center for Internet Security (CIS) benchmarks), in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SMS-6).

f. System compliance status for all information systems provided under and in support of this contract shall be reported using the NASA patch reporting environment, ITSEC-EDW. The contractor will facilitate resolving discrepancies in data between the contractor and Agency reporting systems. The contractor will continue to report SLA compliance utilizing the contractor reporting system until the metrics are modified as a joint effort between the Contractor and NASA. The contractor will provide read only access to their reporting system to NASA designated security personnel for auditing purposes to be used at NASA's discretion in conjunction with the ITSEC-EDW data.

g. Maintain low frequency of ACES-related security Incidents reported by the NASA SOC, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SMS-7).

h. Identify an IT Security Technical and Administrative point of contact(s) who can address all technical questions related to the IT security posture of ACES-managed assets and ACES services for all NASA Centers, to include patching compliance and incident response.

i. Ensure that each ACES information system, service, and or device provided or managed under the Contract is maintained and covered by an IT System Security Plan. In accordance with Addendum 1, CF PWS, the Contractor shall manage security and shall obtain Assessment and Authorization (A&A) for the information systems listed in, but not limited to, Table 4.5.1-1, *List of Systems for Which A&A is the Contractor's Full Responsibility*. The Contractor shall ensure on-time completion of A&A POA&M items, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SMS-3). Costs for independent Third Party certification (including system recertification every three (3) years and upon significant system change) shall be covered under Base Services. The Contractor shall obtain Government approval for each Third Party contractor to perform certifications.

j. Implement NASA's Continuous Monitoring strategy (lifecycle) in accordance with the Continuous Monitoring Handbook, ITS-HBK-2810.02-04A. Implementation of the reference handbook is necessary to remain in compliance to obtain and maintain an Authority to Operate (ATO). The four phases of the Continuous Monitoring Strategy are:

 i. **Plan** - A yearly review of the System Security Plans (SSPs) and all associated supporting security documentation, including the Initial Privacy Threshold Analysis (IPTA) and Contingency Plan.

 ii. **Assess** – Review the security controls and all open or risk-accepted POA&Ms. Conduct and perform analysis of credentialed scanning.

 iii. **Analyze/Report** – Develop a Security Assessment Report (SAR), continually update POA&Ms and update SSP, and propose Acceptance Risk for Authorizing Official (AO) concurrence to affirm ongoing authorization.

 iv. **Remediate** – Remediate vulnerabilities, non-compliance, and employ comprehensive planning prior to adding resources to the environment.

Table 4.5.1-1. List of Systems for Which A&A is the Contractor's Full Responsibility (at the time of Contract Modification 290, but not limited to this table.) All plans listed below are Agency Security Plans.

IT System Security Plan No.	FIPS 199 Security Categorization (Low/Moderate/High)	Information System	ACES Support Requirements
OA-9999-M-MSF-2965	Moderate	ACES End-User Devices for End-User Services (EUDEUS)	Continually update and achieve/maintain A&A with a third party assessment to continue ATO
OA-9999-M-MSF-2967	Moderate	ACES Enterprise Tools for End-User Services (ETEUS)	Continually update and achieve/maintain A&A with a third party assessment to continue ATO.
OA-9999-M-MSF -2968	Moderate	ACES NASA Consolidated Active Directory (NCAD)	Continually update and achieve/maintain A&A with a third party assessment to continue ATO.
OA-9999-M-MSF-2969	Moderate	ACES NASA Operational Messaging And Directory (NOMAD)	Continually update and achieve/maintain A&A with a third party assessment to continue ATO.
OA-999-x-MSF-3368	Moderate	ACES NASA External Security Plan	Continually update and achieve/maintain A&A with a third party assessment to achieve and continue ATO.

4.5.2 Data At Rest (DAR) Services

The Contractor shall provide DAR services that encrypt all data on each Agency desktop, laptop, and tablet/2-in-1 detachable tablet (ACES and non-ACES) throughout the NASA environment to the extent commercially available. The Contractor shall implement, operate, and maintain the DAR enterprise infrastructure. The associated client software shall be maintained on NASA ACES devices, which includes obtaining, installing, and provisioning. For non-ACES devices, the software and any updates shall be made available for the system administrator to install.

4.5.2.1 DAR Services Requirements

The Contractor shall implement, operate, and maintain a DAR solution, which may consist of multiple products, that:

a.   Requires end-users to present credentials as part of the system startup process in both user ID/password and Smartcard modes, when commercially available.
b.   Provides cross-platform support (e.g., Microsoft, Linux, and UNIX).
c.   Supports the NASA-STD-2804x Macintosh DAR solution.
d.   Provides client support for devices defined by NASA-STD-2804*x*, NASA-STD-2805*x*,   and Addendum 3, *Minimum Hardware Requirements*.
e.   Complies with FIPS 140-2, *Security Requirements for Cryptographic Modules*, and

    is Personal Identity Verification (PIV) II Smartcard compatible.

f.   Complies with NPR 2810.1x, *Security of Information Technology*.

g.   Supports user enablement of real-time encryption of hard drives and removable media (e.g. USB attached drives) as defined in OMB M-07-16, *Safeguarding Against and Responding to the Breach of Personally Identifiable Information (PII)*.

h.   Provides full disk encryption for all internal hard drives at new seat delivery, at installation of additional internal hard drives, or refresh. Drives added by the user may need to be encrypted by the user.

i.   Provides system administrators with the capability to enable content encryption within their system computer group per NASA policy.

j.   Is installable on systems that do not connect to a network. Systems that do not connect to the network or register with the Key Escrow management solution will have limited recovery options.

k.   Supports audit tracking (e.g. logging of failed login attempts, attempts to change state of encryption) to the extent supported by the product.

l.   Allows multiple authorized end-users to access a single protected device where this capability is commercially available.

m.   Supports remote locking and wiping of networked devices that are reachable from the management console.

n.   Develops and maintains end-user documentation to be provided to ACES and non-ACES system administrators.

o.   Ensures the solution does not adversely impact the operations of the standard load.

p.   Assures IDs, if initially assigned to use the solution, conform to the AUID of the assigned user.

q.   Performs DAR administration centrally and provides configuration changes to support policy updates and password resets for devices that are network accessible by an administrator.

r.   Reports encryption compliance status of in-scope network accessible computer systems and mobile devices for network attached devices.

s.   Ensures high availability of the DAR services in accordance with Attachment I-3, *Retainage Pools and Performance Metrics*, Section 2.1.2, *Service Availability*.

t.   Provide a Key Escrow service. Supports key recovery at NASA sites as well as to end users connecting remotely (both within the United States and international). The key escrow systems shall provide the following capabilities:

    i.   The key escrow service shall provide key recovery for end-user systems regardless of the network location of such systems.

    ii.   The key escrow service shall support all operating systems identified in the NASA-STD-2804x where available.

    iii.   Support for new operating system releases for ACES managed seats shall be provided no later than 90 days after the key escrow provider publishes their support of that OS version.

u.   Provides a means for client systems to receive policy updates and upload auditing data for those systems that are connected to a network that is reachable from the Key Escrow solution (server).

v.   Provides for Disaster Recovery using servers located at geographically separate data centers interconnected by the NASA network. These servers shall continuously

receive data replicated from the   production servers.

w. Provides ad-hoc and standard reporting capability to include: registered devices, installations, status (what systems and what internal drives are partially or fully encrypted), and metrics related reports, etc.

x. Provides pre-boot authentication that enables access to a previously encrypted internal drive(s) prior to starting the operating environment. The internal hard drive must have been encrypted by an ACES managed solution and registered with the Key Escrow server.

y. For use of any native DAR capability and where commercially available, the DAR product shall require a separate login from the operating system login. A pass-through capability shall not be implemented.

z. Provides capability that authorized system administrators shall be able to enter a pre-boot authentication credential on devices administered by them.   This will be limited to a mutually agreed to number of accounts between the contractor and EUSO.

aa. Provides ability to upgrade the operating system without having to decrypt the internal drive(s) and re-encrypt the internal drive(s) each time if commercially available.

Transitions from one DAR product to another shall be tracked as a project. As a part of the implementation project, transition plans, standard operating procedures, outreach plans, etc. shall be required.

Implementation of new DAR products on devices shall occur any time a decrypt is required. This can be at time of refresh, replacement of hard drive, movement to a break/fix spare, etc. The decryption using the product shall take place on the hard drives and after data transfer, the hard drives shall be encrypted with the new DAR product.

The Contractor shall serve as the primary point of contact for any operational issues affecting DAR services.

4.5.3 Physical Security

The Contractor shall implement a comprehensive physical security program consistent with NASA and Center-specific regulations and procedures for the performance of the Contract and the protection of assets and equipment that process NASA data. These regulations and procedures include NPR 1620.3, *Physical Security Requirements for NASA Facilities and Property*; NPD 1600.2*x*, *NASA Security Policy*; and NPR 1600.1, *NASA Security Program Procedural Requirements*.

4.5.4 Emergency Management

The Contractor shall provide a Disaster Recovery/Continuity of Operations Plan for each Center in accordance with NASA's policies and procedures (i.e., NIST SP 800-53, Rev. *x*, *Recommended Security Controls for Federal Information Systems and Organizations*). The Contractor shall comply with Center emergency management plans. The Contractor shall ensure that all applicable personnel are trained in emergency management operations in accordance with Attachment I-2, *DPD*, DRD IT-05, *Continuity of Operations Plan*.

The Contractor shall support NASA and Center Continuity of Operations Planning (COOP) activities, including planning, testing, and execution. The Contractor shall develop procedures and implementation plans to ensure that IT resources are protected and that man-made acts and acts of nature have been addressed, in accordance with NPR 2810.1*x* and Center disaster recovery requirements. For every information system, the Contractor shall develop, test, implement, and maintain contingency plans; establish clear roles and responsibilities for COOP; and provide COOP training to all applicable Contractor personnel in accordance with NPR 1040.1, *NASA Continuity of Operations (COOP) Planning Procedural Requirements*.

4.5.5 Emergency Preparedness and Response

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 in 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.

4.6 SOFTWARE LICENSE MANAGEMENT

The Contract includes three general categories of licensed software:

   a.   Software managed by floating license servers.
   b.   Software for which usage is so widespread (e.g., Microsoft Project or Adobe Acrobat) that bulk purchasing is done and tracked at the Agency level while distribution management is done at the Center level.
   c.   Software purchased through the APC.

The Contractor shall develop and implement a comprehensive software management program that supports the above three categories. This program shall track all software purchased or provided via the Contractor at both a Center and Agency level. The Contractor shall manage the distribution of all Government-provided software licenses that the ACES SME identifies. The Contractor will be expected to work with the EUSO Manager to deal with non-Center issues and to work with the ACES SME to handle local distribution. All Government-provided licenses that are managed by the Contractor and licenses that are purchased via the Contract will remain the property of NASA. For system administration purposes, the Government-provided or Government-purchased software is considered Support Level 2 software (see Section 3.2.2, *Support Level 2: Agency-Provided and Licensed Software*).

The Contractor shall perform:

   a.   Performance and security monitoring and associated mitigation activities. The security monitoring required for license management shall be consistent with the Desktop IT System Security Plan that will be required under the Contract, in accordance with

Addendum 1, *CF PWS*, and Attachment I-2, *DPD*, DRD CF-02, *Information Technology (IT) System Security Plan (SSP)*.
b. Troubleshooting.
c. License manager(s) installation and maintenance.
d. Implementation and maintenance of updates/upgrades to subscription services and license managers.

The Contractor shall:

a. Provide a means for limiting the software distribution to a prescribed set of end-users defined by the ACES CTM.
b. Ensure that licensing and certificates on servers do not expire.
c. Ensure that all commercially released updates/upgrades and patches (non-security) are installed in accordance with Agency requirements for scheduling and Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-26).
d. Ensure that the licensed software is in operating condition, current, with up to date maintenance, and secure.
e. Install and make updates to the licensed software at times that will minimize the impact on end-user productivity.
f. Develop, maintain, and implement required test procedures or simulations to properly test software upgrades, modifications, and maintenance.
g. Offer and manage a pilot program for software updates/upgrades and patches, in accordance with Agency requirements for selection of updates/updates and patches for piloting, as well as scheduling.
h. Provide an ongoing program to evaluate new commercially available software and provide reports, including recommendations, to designated NASA management.
i. Ensure all operational licensed software modifications are installed, secure, operational as expected, and free of detected Problems.
j. Prepare a system software implementation test and release plan for each release or software package update and present it for approval of the ACES SME.
k. Maintain subscriptions to the OEM system software services.
l. Review OEM Web sites for failure, security, and enhancement information and install updates or patches as appropriate.
m. Perform Configuration Management of all licensed software, standard operating procedures, and software license management documentation developed or maintained by and for the Contract; update software license management documentation after update/upgrade installation is completed, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-27).
n. Provide, update, augment, validate, and maintain current graphic depictions of issued licenses and relationships (e.g., communication paths) of servers, services, and functions of all supported software within the Agency, as well as maintain, store, and make available to the Government this documentation.
o. Provide a quarterly analysis of buying and usage patterns to help the Government more effectively manage the existing software licenses currently purchased while providing a more efficient and cost effective method for bulk purchases of new software.

p.   Provide a method by which software license renewal can be managed to account for under or over usage of existing licenses as well as determine the distribution and usage of such licenses by:
i.   Informing the Government if license usage of any ACES-managed software exceeds eighty (80) percent at any Center to allow the Government time to review the need for future software license purchases.
ii. Informing the Government if license usage of any ACES-managed software drops below twenty (20) percent at any Center to allow the Government time to review the need for future software license deletions.

q.   In the event an end-user needs a Licensed Software update/upgrade to be installed on their ACES seat earlier than the schedule determined by the CCB in order to maintain interoperability with a partner, and the end-user obtains the ACES SME's approval, the Contractor shall:
i.   Negotiate with the ACES SME and the end-user on an accelerated update/upgrade schedule for that end-user and that software.
ii. Provide such update/upgrade according to the agreed upon accelerated schedule.
iii. Track accelerated updates/upgrades at the Center and Agency level.

r.   In the event an end-user needs to avoid a Licensed Software update/upgrade that has been scheduled by the CCB in order to maintain interoperability with a partner, and the end-user obtains the ACES SME's approval, the Contractor shall:
i.   Negotiate with the ACES SME and the end-user on an decelerated update/upgrade schedule for that end-user and that software.
ii. Provide such update/upgrade according to the agreed upon decelerated schedule.
iii. Track decelerated updates/upgrades at the Center and Agency level.

4.7 INSTANT MESSAGING SERVICES

4.7.1 Instant Messaging Requirements

The Contractor shall provide Instant Messaging (IM) services that allow access for end-users throughout the NASA environment and collaboration with external end-users. The IM services shall offer real-time text-based communication between two or more participants over the Internet and the NASA intranet (i.e., .NASA.GOV domain).

The Contractor shall provide a solution, which may consist of multiple products, that collectively meets the following IM service requirements:

a.   Client support for devices and operating systems defined by NASA-STD-2804*x*, NASA-STD-2805*x*, and Addendum 3, *Minimum Hardware Requirements*. The solution shall provide support for Windows, Apple, and Linux devices. All devices with Internet access, including Smartphones, shall be supported.
b.   Secure transport (e.g., Secure Sockets Layer (SSL)/Transport Layer Security (TLS)).
c.   End-user control of Contact List.
d.   Limit incoming IM messages to only the end-user's Contact List (e.g., Buddy List) participants.
e.   Block IM messages from a specific end-user.

f.   Presence Awareness.
g.   User-settable status message.
h.   Remote access from non-NASA networks.
i.   Non-NASA end-users to use the NASA IM service.
j.   Client-side logging/saving of IM conversations.
k.   Group Discussions.
l.   Capability to authenticate using NASA's Authentication and Authorization services.
m.   Capability to enable and disable the following functions and capabilities.
n.   File transfer between participants.
o.   Application sharing.
p.   Desktop sharing.
q.   Audio/Voice capability.
r.   Video capability.
s.   Whiteboard sharing.
t.   The Contractor shall meet all of the requirements of the FISMA. The system shall meet the Low security controls defined in NIST SP 800-53, *Recommended Security Controls for Federal Information Systems and Organizations*.

4.7.2 IM Transition Requirements

NASA's current IM solution is comprised of two components: (a) Microsoft Office Communicator/LCS and (b) Jabber. The current LCS infrastructure is located at NASA MSFC. The current Jabber infrastructure is located at NASA JPL. The infrastructure supporting the LCS is a part of the NOMAD service and will be provided as GFE. The Jabber infrastructure will not be provided as GFE.

The Contractor shall maintain and operate the current NOMAD LCS infrastructure beginning with the Contract Implementation date for Wave 1 (see Attachment 14, *Phase-In Schedule*) and provide a Jabber capability until the Contractor's proposed solution is in place and accepted by the Government in accordance with NPR 7120.7, *NASA IT and Institutional Infrastructure Program and Project Management Requirements*. The current IM service is described in the documents entitled *Instant Messenger for PC* and *Instant Messenger for Mac*, which are provided in the I^{3}P Technical Library for ACES.

4.8 TWO-FACTOR USER AUTHENTICATION SERVICE DISTRIBUTION

The Contractor shall provide Registration Authority functionality for the issuance of user authentication credentials and signing, encryption, and SSL/TLS (Web-based) certificates (excluding PIV Smartcard credentials). The Contractor shall provide the distribution of two-factor authentication hardware tokens (e.g., RSA SecurID tokens). As part of that responsibility, the Contractor shall:

a.   Verify end-user identity information in accordance with NASA policy (using the NASA Registration Practice Statement) prior to issuing encryption, signing, and SSL certificates, hardware tokens, or other requested credentials.

    b.   Maintain and control inventory to ensure availability of Government-furnished hardware tokens.

    c.   Issue hardware tokens and certificates utilizing the NASA Identity Management and Account eXchange (IdMAX).

    d.   Distribute two-factor authentication hardware tokens to end-users.

    e.   Assist requestors with the process of activating their hardware tokens, and management of the life cycle of all certificates (e.g., request, key recovery, PKCS#12, and Web certificates), including installation of software updates to support these certificates.

5.0 SEAT SERVICES

This section identifies the operational characteristics of the different seats and supporting hardware to be delivered by the Contractor.

For all seats, the Contractor shall provide the following:

a. Installs, Moves, Adds, and Changes (IMACs) (including seat desubscriptions), as defined and required below (with the IMAC pricing included in the base seat cost).

  Service Descriptions:

  i. An install is a deployment of new or temporary Computing, Cellular, Pager, and Network Peripheral seats.
  ii. A move is a physical or remote de-installation, move, and re-installation of system hardware or software. A move includes all necessary support to go from operational status at the old location to operational status at the new location, including preservation of end-user data and temporary storage en route as necessary. Seat moves include all attached peripherals.
  iii. An add is the addition of non-Standard Load software and/or hardware augmentations to a seat at the desk sight location on which the Contractor has full administrative responsibilities.
  iv. A change is one or more modifications to a Service Option (e.g., change to the Return To Service level) or configuration item (e.g., change to the funding organization or assigned end-user for a seat, and change to seat-related data that is stored in the CMDB).
  v. A desubscription occurs when an ACES seat is deleted.

  Requirements:

  The Contractor shall:

  i. Execute individual and group IMACs requiring physical access to the device through advance planning and coordination with the requestor and the appropriate organizational IT point of contact.
  ii. Acknowledge a request for IMAC service.
  iii. Coordinate with Center movers to schedule moves.
  iv. Complete IMAC requests in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SD-28, SD-29, SD-30, and SD-31).
  v. Process the closure of IMAC requests in the ESRS.

b. End-User Training

  The Contractor shall provide end-user familiarization training for ACES-provided/supported hardware and software products and services. Familiarization training is defined as training that acquaints the average-skilled end-user with the

features, capabilities, configuration (either as OEM-configured or as Contractor-configured, as applicable), and optional components of the product or service. This training shall be provided to ACES end-users who have just received their first ACES seat/system for all hardware and software included with the ordered ACES seat/service, and to existing ACES end-users for major upgrades to hardware and software. The Contractor shall detail its planned end-user training approach in Attachment I-19, *Management Plan*, prepared in accordance with Attachment I-2, *DPD*, DRD MA-01, *Management Plan*.

The Contractor shall offer a range of additional training courses covering the breadth of ACES-provided/supported products and services in the APC. Training facilities for both the familiarization and additional training types shall be located in a location convenient to individuals supported by ACES.

The Contractor shall provide assistance to end-users in the use of end-user-configurable services and settings for ACES-provided products and services, as well as guide them in the appropriate use of ACES-provided products and services.

c.   End-User Documentation

The Contractor shall provide end-user documentation, which may take several forms, including but not limited to online help, help files, tutorials, Portable Document Format (PDF) documents, and printed manuals. This end-user documentation shall include documentation on the end-user's specific system hardware to explain the functions of buttons on their device(s) and how to program the system's programmable function keys. The Contractor shall provide online end-user documentation on all ACES provided services, including commercially available products (e.g., Microsoft Office user guide), where available from the vendor. The documentation will show how to use each function of the provided version of the product or service. The Contractor shall also create and provide ACES online documentation for ACES services, such as an APC user's guide. The Contractor shall make available for purchase hardcopy documentation for commercial products and ACES services through the APC.

5.1 COMPUTING SEATS

5.1.1 Computing Seats Description

The Contractor shall provide Computing seats, which, in combination with the Base Services detailed in Section 4.0, *Base Services*, shall provide all of the services needed to perform standard end-user computing related activities. Computing seats shall be comprised of three service parts:

a.   The platform group providing the computing hardware (e.g., desktop, laptop), operating system (OS), monitor, docking station, and peripherals.
b.   Computing seat services.
c.   System administration.

Computing seats shall be made available in four types:

a. The "S" seat with a Standard set of pre-defined Services and Service Options.
b. The "M" seat with pre-defined Services and Modifiable (end-user-selectable) Service Options.
c. The "B" seat where services are "Built" to specific end-user requirements and Service Options.
d. The "GC" seat where services are delivered to government owned computers with a standard set of predefined services. Complete description of the "GC" service is found in Attachment I-27.

The term 'Service Option' is defined as the characteristics and metrics that define a particular type of support to be provided by the Contractor. Multiple Service Options, such as System Administration and Return To Service, may be needed to provide various types of support to the end-user.

5.1.2 Requirements for All Computing Seats

For all Computing seats, the Contractor shall:

a. Provide software requirements analysis, software product acquisition, testing of the software changes in relation to the rest of the software in the Standard Load, development and testing of the update deployment method at each Center, verification,   and installation, in accordance with item (d) below.
b. Provide the required operating system and application software defined in Section 5.1.6.3.8, *Standard Load*. For the "B" seat only the Standard Load is optional.
c. Provide updates/upgrades and patches of the operating system and application software to more effectively and efficiently perform basic system and application objectives of the relevant seat (i.e., the "S," "M," "B," and "GC" Computing seats that have subscribed to the Standard Load).
d. Provide a software refresh cycle of six (6) months based on the update cycle of NASA-STD-2804*x*, which is updated twice a year. The Contractor shall obtain approval by the Agency ACES CCB for software refresh installation for the Agency. The Contractor shall implement Standard Load changes on all Computing seats subscribed to the Standard Load Service Option, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-32).
e. Provide an Agency-wide technology refresh deployment methodology for Standard Load software.
f. Provide, as part of the existing seat cost, upgrade of the hardware platform when industry advances to Standard Load software require a hardware upgrade, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-33).
g. The requirement to provide removable storage devices is removed due to a change in NASA-STD-2805 Spring FY 2015 which was approved by the Agency CIO on May 6, 2015. (HPES will continue to provide a FIPS 140-2 validated removable media device for new seat orders placed against CLINs C-47, C-48, and C-49). Any removable storage

media device that has been previously provided by the contractor is considered a consumable and will not be returned to the contractor at the time a seat is de-subscribed.

h.   Provide necessary hardware and software to meet current NASA identity verification requirements (e.g., Smartcard readers) that meet the standards expressed in NIST SP 800-96, *PIV Card/Reader Interoperability Guidelines*.

i.   Provide a fully operational network cable to connect the Computing seat to the NICS demarcation point (e.g., network jack) and install the cable at the time of an IMAC.

j.   Follow Center naming guidelines until an Agency-wide naming convention is implemented, and follow the Agency naming convention once established.

k.   Provide the capability to support dual monitors on each hardware platform where such capability exists.

l.   Deliver new Computing seats to end-users, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SD-34, SD-35, SD-36, and SD-37).

m.   For those ACES Computing seats where the capability exists to remotely boot up devices that are powered down (e.g., vPro Intel Chipset), this capability shall be provided.

n.   Docking stations, monitors, mice, speakers, laptop bags, display port cables, and keyboards that are functional and/or compatible with the seat will not be refreshed as part of the Compute Seat refresh and will be available for re-use. Peripheral devices will be replaced only as necessary for break/fix or non-compatibility with the refreshed Compute Seat. Replacement/refresh of the peripheral devices listed will be at no cost to the government. In instances of failure of the peripheral devices, the contractor will respond to an incident ticket within the prescribed RTS.

o.   Test, package, deliver, and maintain software and configurations necessary to support NASA-approved smartcard authentication, secure single sign-on, and NASA-mandated configurations, as specified in the NASA STD 2804.x. The contractor shall perform timely patching and updates of this software and its configurations to comply with current standards as provided by the ICAM Device Integration (IDI) team through the EUSO change process. The contractor shall update related compute seat configurations, such as the maintenance of NASA Trust Anchor Management (NTAM) and IDI published browser configurations and extensions as requested by the NASA application owner and approved by EUSO.

    1.   Provide a method, through the ACES Website and/or Agency-wide Self-Service Manager (PWS section 3.23) to allow non-ACES systems to download and install the client-based software described above.

p.   Use Agency Approved Management Software to configure compute seats to Agency compute and security standards. Refer to PWS section 4.2 for related information.

5.1.3 "S" Computing Seat (Standard)

The "S" Computing seat is intended for overall general purpose computing in support of Center and Agency activities, and is packaged with a pre-defined set of Services and Service Options. It is intended to be the "best value" solution. Typical usage includes e-mail, Web browsing, standard office automation and desktop productivity enhancement software, including report preparation, presentation creation, meeting scheduling, spreadsheet generation, as well as general science and engineering application development and execution.

All "S" Computing seats shall be available in a desktop and a laptop version for both Microsoft and Apple operating systems. The "S" Computing seat shall not provide Service Options other than the ability to de-select the Monitor; however, user-purchased augmentations shall be available via the APC.

The Contractor shall allow the Government to change from an "S" to an "M" Computing seat. To accomplish this, the Government will alter any of the fixed "S" Computing seat SLAs away from the "S" Computing seat standards or change the operating system to Linux, thus moving the seat to a different classification.

5.1.4 "M" Computing Seat (Modifiable)

The "M" Computing seat provides functionality similar to the "S" Computing seat while giving the end-user the ability to select other Service Options for the hardware platform, seat services, and system administration. Additional capabilities available with the "M" Computing seat include a Linux operating system and additional monitor selections.

The Contractor shall allow the Government to change from an "M" to an "S" Computing seat if the hardware platform is a Desktop or Laptop (not Lightweight or Tablet). To accomplish this, the Government will select the Service Options that match the "S" Computing seat standards.

5.1.5 "B" Computing Seat (Build as Required)

The "B" Computing seat is intended for more specialized requirements that are not met by either the "S" or "M" Computing seats. The "B" Computing seat provides the ability to "build" a platform solution and system administration support. The "B" Computing seat shall provide the flexibility to meet the diverse range of end-user computing needs typically found across the breadth of NASA's missions, such as end-user systems that utilize unique hardware, operating system configurations, and unique discipline-specific software tools. Unique hardware might include enhanced motherboards, quad processors, specialized peripherals, and accelerated high-resolution graphics cards. The "B" Computing seat gives the end-user the ability to immediately access new technology as it comes to market. Functionality includes the capability of running commonly used office automation applications, although typically at higher levels of performance than those found in the other two Computing seat types.

Examples of "B" Computing seats include but are not limited to seats that require extensive program development, computationally intensive scientific and engineering program execution, development and execution of graphically intensive visualization, and resource intensive application development or execution. Additionally, "B" Computing seats can be "built" to provide a very low cost solution to meet minimal requirements, such as simple data entry.

To meet the requirement to "build" as required, the service parts (platform group, Computing seat services, and system administration) shall be offered separately with specialized "build" Service Options offered only for the "B" Computing seat.

Invoicing for the hardware component of the "B" Computing seat shall be available on a one-time basis or amortized over 36 months. If the one-time basis is chosen, the Government will take ownership of the hardware.

5.1.6 Computing Seats Services

5.1.6.1 "S" Computing Seats Standard Services

The Contractor shall provide "S" Computing seat standard services as identified in Table 5.1.6.2-1, *Computing Seat Services and Service Options*, and defined in Section 5.1.6.3, *Computing Seats Service and Service Option Definitions*.

The Contractor shall allow a concurrent APC order for a monitor upgrade at the time of an "S" Computing seat order or hardware refresh. The order shall be a one-time charge that includes the non-recurring initial cost difference between the original "S" Computing seat standard monitor and the upgraded monitor. The monthly "S" Computing seat cost shall remain unchanged.

5.1.6.2 Computing Seats Services and Service Options

The following Services and Service Options, defined in Section 5.1.6.3, *Computing Seats Service and Service Option Descriptions*, shall be available for Computing seats, if commercially available. An "X" in the seat column indicates that the Service Option shall be offered for that seat type. Each hardware platform for the "M" Computing seat shall be a subset of the hardware family proposed for the "B" Computing seat. Each hardware platform for the "S" Computing seat shall be a subset of the hardware family proposed for the "M" Computing seat.

Table 5.1.6.2-1. *Computing Seats Services and Service Options*

Type of Service/Service Options	"S" Seat	"M" Seat	"B" Seat	"GC" Seat
Platform				
None			X	
Desktop	X	X		
Laptop	X	X		
Lightweight		X		
Ultra Lightweight		X		
Tablet		X		
Workstation		X		
Build			X	
Payment Method				
Lump Sum			X	
Amortized			X	
Operating System				
None			X	X
Microsoft	X	X	X	X
Apple	X	X	X	X
Linux		X	X	
UNIX (Workstation and Build only)		X	X	

Type of Service/Service Options	"S" Seat	"M" Seat	"B" Seat	"GC" Seat
Monitor				
None	X	X	X	X
NASA-STD-2805x Standard **	X	X	X	
NASA-STD-2805x + 10% minimum**		X	X	
NASA-STD-2805x + 20% minimum**		X	X	
Return To Service				
2 business hours		X	X	X
8 business hours	X	X	X	X
None			X	
Hardware Technology Refresh Cycle				
None			X	
3 years	X	X		
5 years				
System Administration				
None*			X	X
Microsoft	X	X	X	X
Apple	X	X	X	X
Linux		X	X	
UNIX		X	X	
Standard Load				
Included	X	X	X	X
None			X	X
Docking Station Solution				
Microsoft/Linux	X	X	X	
Apple	X	X	X	
None		X	X	
Managed Virtual Machine Service				
Local Virtual Machine		X	X	
Remote Virtual Machine		X	X	
None		X	X	
Backup Services				
None		X	X	X
Included	X	X	X	X

*The Contractor shall have no obligation for IT Security or C&A for any ACES-supported system ordered with "None" under System Administration. The end-user will be responsible for implementing any IT security requirements.

**Screen size rounded to the nearest whole number using standard rounding techniques.

5.1.6.3 Computing Seats Service and Service Option Definitions

All of the Service and Service Option definitions contained in this section apply to the "S," "M," and "B" Computing seats, which are defined in Sections 5.1.3, *"S" Computing Seat (Standard)*; 5.1.4, *"M" Computing Seat (Modifiable)*; and 5.1.5, *"B" Computing Seat (Build as Required)*, respectively. Computing seats "M" and "B" may have data that changes some of the definition; those changes are addressed in the specific seat sections.

5.1.6.3.1 Platform

The Contractor shall provide services to ensure computer hardware (e.g., processor, memory, disk, and network interface card) is available to the specified Seat Type. Contractor services include requirements analysis, hardware and software acquisition, testing, verification, and installation in accordance with the specific technology refresh cycles. Each platform shall meet or exceed the hardware definition as defined in NASA-STD-2805x. Each platform shall meet or exceed the minimum configuration recommended by the software manufacturer for the software installed with each seat.

Compute seats that have been previously de-subscribed by a NASA-submitted Service Request because there no longer is a need for the device that are less than one (1) year old (to be measured from the initial deployment date) can be re-deployed to fulfill new seat orders. (Note: this re-deployment policy does not apply to seats that have been removed from the environment due to break/fix incidents).
- The seat will be considered compliant with NASA-STD-2805x, provided that the compute seat was compliant with NASA-STD-2805x at the time of its initial deployment.
- Any calculation of ATV for a seat that has been re-used will be based upon the initial install date of the device, not the date that it was deployed to the user.

- *None*

No hardware shall be provided by the Contractor (only available for the "Build" or "GC" seat).

- *Desktop*

The Contractor shall provide Desktops, which are computer platforms in an enclosure that allow for expansion and that can be placed on a desk or on the floor. The Contractor shall provide a single monitor, keyboard, mouse, and external speakers with each Desktop seat. The Contractor shall deliver the same desktop hardware platform for the "S" and the "M" Computing seats. A monitor, keyboard, speakers, display port cable, and mouse may be re-used if it is fully functional and compatible with the seat.

- *Laptop*

The Contractor shall provide Laptops with a docking station solution for end-users who require seat mobility, performance, and lighter weight. The Contractor shall provide a laptop carrying case with each Laptop seat. The laptop carrying case shall be capable of holding the laptop, mouse, power cord, charger/power supply, modem cable, Ethernet cable, a DVD-ROM sized device, Smartcard reader, and an extra battery. The end-user may opt out of the docking station solution for the "M" Computing seat. The Contractor shall deliver the same laptop hardware platform for the "S" and the "M" Computing seats. A monitor, keyboard, docking station, speakers, laptop bag, display port cable, and mouse may be re-used if it is fully functional and compatible with the seat.

- *Lightweight Laptop*

The Contractor shall provide Lightweight Laptops with a docking station solution for end-users who require seat mobility, less weight, and extended battery life over performance. The weight of the Lightweight Laptop shall adhere to NASA-STD-2805x requirements (excluding external peripherals) and shall include all features and functionality of the Laptop platform and commercially available lightweight/ultra-portable laptops. The Contractor shall provide a laptop carrying case with each Lightweight Laptop seat. The laptop carrying case shall be capable of holding the lightweight laptop, mouse, power cord, charger/power supply, modem cable, Ethernet cable, a DVD-ROM sized device, Smartcard reader, and an extra battery. The end-user may opt out of the docking station solution. A monitor, keyboard, speakers, laptop bag, display port cable, docking station and mouse may be re-used if it is fully functional and compatible with the seat.

- *Ultra Lightweight Laptop*

The Contractor shall provide Ultra Lightweight Laptops with a docking station solution for end-users who require seat mobility, less weight, and extended battery life over performance. The weight of the Ultra Lightweight Laptop shall adhere to NASA-STD-2805x requirements (excluding external peripherals) and shall include all features and functionality of the Laptop platform and commercially available Ultra Lightweight/ultra-portable laptops. The Contractor shall provide a laptop carrying case with each Ultra Lightweight Laptop seat. The laptop carrying case shall be capable of holding the Ultra lightweight laptop, mouse, power cord, charger/power supply, modem cable, Ethernet cable, a DVD-ROM sized device, Smartcard reader, and an extra battery. The end-user may opt out of the docking station solution. A monitor, keyboard, speakers, laptop bag, display port cable, docking station and mouse may be re-used if it is fully functional and compatible with the seat.

- *Tablet*

The Contractor shall provide Tablets with a docking station solution for end-users who need the capability to convert their computing unit to a touch screen, note-taking device.

The Tablet shall include a display that can be folded down over the keyboard, connections for peripherals, a stylus, and a touch-based OS. The weight of the Tablet shall adhere to NASA-STD-2805x requirements.

The Contractor shall provide a tablet carrying case with each Tablet seat. The tablet carrying case shall be capable of holding the tablet, mouse, power cord, charger/power supply, modem cable, Ethernet cable, a DVD-ROM sized device, Smartcard reader, and an extra battery. The end-user may opt out of the docking station solution. A mouse, power cord, charger/power supply, modem cable, Ethernet cable, a DVD-ROM device, Smartcard reader, and an extra battery may be re-used if it is fully functional and compatible with the seat.

- 2-in-1 Detachable Tablet

The 2-in-1 Detachable device shall include a display and keyboard that physically connect and integrate, but can also be disconnected for highly portable stand-alone mobile use of the display. The screen portion of the device shall include connections for peripherals, and a touch-based OS.

The weight of the device and other features or configurations shall adhere to NASA-STD-2805x requirements.

The Contractor shall provide 2-in-1 Detachable devices with a docking station solution for end-users who need the capability to quickly and reliably connect their device to the array of peripherals included in the NASA docking station solution. The end-user may opt out of the docking station solution.

The Contractor shall provide a carrying case with each 2-in-1 Detachable seat. The carrying case shall be capable of holding the 2-in-1 Detachable device with its keyboard attached, mouse, power cord, charger/power supply, Ethernet cable, Smartcard reader, and an extra battery.

- *Workstation*

The Workstation is a multi-processor system intended for application development and execution of higher-performance scientific and engineering programs. Workstations offer additional expansion options utilizing high-speed peripherals, system expansion slots, and additional processor sockets. The Contractor shall provide a single monitor, keyboard, mouse, and external speakers with each Workstation seat.

- *Build*

The "Build" platform Service Option provides for fully customizable solutions for the Laptop (including multi-processors), Lightweight Laptop, Ultra Lightweight Laptop, Desktop, Tablet, and Workstation hardware platforms. The Contractor shall provide at least one hardware vendor's full product line for Microsoft Windows-compatible, Apple-compatible, Linux-compatible, and UNIX hardware systems. The Contractor shall provide the full product line at a percentage discount below the manufacturer's suggested retail price.

5.1.6.3.2 Payment Method

The "Payment Method" Service Option provides for the ability to pay for the hardware up front at time of purchase or amortized over 36 monthly payments. This Service Option applies to the "B" Computing seat only, which is defined in Section 5.1.5, *"B" Computing Seat (Build as Required)*.

- *Lump Sum (pay for hardware fully at time of purchase)*

- *Amortized (pay over time in 36 monthly payments)*

5.1.6.3.3 Operating System (OS)

The Contractor shall provide an OS that is compatible with and supports the various functions of the selected Computing seats. The Contractor shall provide an OS as requested by the end-user for

the "M" and "B" Computing seats and assist in determining compatibility with the ordered hardware platform.

Services include requirements analysis, hardware and system software acquisition, testing, verification, and installation in accordance with the specific technology refresh cycles.

Each architecture shall follow the configuration requirements defined by the tables included in Addendum 2, *Software Standard Load*. (Note: These tables are a proper superset of NASA-STD-2804*x*.)

- *None*—No OS will be delivered by the Contractor (Only available for the "Build" seat).

- *Microsoft Windows*—The Contractor shall deliver a Microsoft Windows OS as specified in Addendum 2, *Software Standard Load*, Table 1-W.

- *Apple*—The Contractor shall deliver an Apple OS as specified in Addendum 2, *Software Standard Load*, Table 1-M.

- *Linux*—The Contractor shall deliver a compatible Linux OS for the "M" and "B" Computing seats as specified in Addendum 2, *Software Standard Load*, Table 1-L.

- *UNIX*—The Contractor shall deliver a compatible UNIX OS for "M" and "B" Computing seat workstation platforms, as specified in Addendum 2, *Software Standard Load*, Table 1-U.

5.1.6.3.4 Monitor

The Contractor shall provide monitors as specified in NASA-STD-2805*x*.

- *None*

- *NASA-STD-2805x Standard Monitor size*

- *NASA-STD-2805x + 10% minimum*

- *NASA-STD-2805x + 20% minimum*

5.1.6.3.5 Return To Service

The Contractor shall provide RTS, which is the restoration of an end-user's device to full operability when an Incident occurs that renders an ACES seat unstable or inoperable. RTS includes the tasks that are necessary to get an end-user's system back to an operational state within the scope of the Contractor's responsibility, including field services and any remote management. RTS is the primary objective of Incident Management.

For all "S" and "M" Computing seats, if the end-user's system is rendered unstable or inoperable and the system must be removed from the end-user's environment to perform the repair or the repair time will exceed the subscribed RTS Service Option, the Contractor shall offer the end-user a break/fix spare (outside of the Loaner Pool Management requirements addressed in Section 4.3, *Loaner Pool Management*). The break/fix spare shall be provided at no additional cost to the Government until the original system is made stable or operable again or replaced by a new system. The Contractor shall transfer any end-user required and recoverable data or software from the end-user's system to the loaner system to ensure continuity of the end-user's operations. The Contractor shall transfer any new data created during the loaner usage to the repaired or replaced system to ensure continuity of the end-user's operations.

To accomplish the RTS, the Contractor shall provide:

a.   Hardware, System, and Standard Load application diagnostics and troubleshooting.
b.   System and component maintenance.
c.   Hardware, System, and Standard Load application configuration changes, tracking, and documentation.

For the "GC" Computing Seat – Return to Service will be accomplished in accordance with CCP-ACES-0989 Version 1.3 – Attachment I-27.

For ACES seats located outside of Centers, the Contractor shall provide hardware maintenance services only. The Contractor shall provide the ordered service using drop ship methodology or other ACES COR-approved method.

The Contractor shall maintain each seat to the selected 'Return To Service' Service Option:

- *2 business hours*

- *8 business hours*

- *None*

5.1.6.3.6 Hardware Technology Refresh Cycle

The Contractor shall provide scheduled hardware technology refresh, defined as replacement of system hardware and standard non-APC peripherals (e.g., keyboard, mouse, and monitor) associated with the seat with new equipment to meet the objectives of the relevant ACES Seat Type. A monitor, mice, keyboard, speakers, docking station, display port cable, and laptop bag may be re-used if it is fully functional and compatible with the seat.

- *None*—There is no hardware technology refresh.

- *Refresh*—Hardware technology refresh is provided as follows: Compute seats initially deployed in Contract Years 1 – 3 will have a hardware technology refresh cycle of 4

years. For any compute seat deployed in Contract Years 4 – 10, the hardware technology refresh cycle will be every 3 years.

Previously de-subscribed Compute Seats that are less than one (1) year old (to be measured from the initial deployment date) can be re-deployed to fulfill new seat orders and will be considered compliant with NASA-STD-2805x, provided that the compute seat was compliant with NASA-STD-2805x at the time of its initial deployment.

For any compute seat that NASA pays an ATV for an early tech refresh in the initial year of deployment, HPES can redeploy the compute seat in accordance with the above paragraph. If HPES reuses the same device in the NASA environment, then HPES will credit back to the NASA organization, the amount of ATV that was paid out, less any time that the machine was not used.

NASA will receive a credit to the cost center which paid the ATV or to a cost center as directed by the I3P Business Office. The value will be the ATV of the asset on the redeployment date.

5.1.6.3.7 System Administration

The Contractor shall provide system administration services, such as platform network connectivity and management; printer setup and management; software installation, configuration, and update management; patch acquisition, testing, and deployment; and end-user assistance. The Contractor shall ensure that all systems are current with designated security patches.

The Contractor shall obtain any necessary security clearances and non-disclosure agreements and maintain the supporting documentation. The Contractor-supplied system administration services shall comply with NASA IT Security Requirements contained within NPR 2810.1*x*. Where system privileges are shared or the Government has exclusive rights, the Contractor shall provide guidance and assistance on the policies and procedures upon request by the ACES SME to ensure interoperability and system integrity are communicated to the Government administrators. The Contractor shall provide Government end-users or designees the ability to have elevated user privileges in accordance with Section 3.13, *Elevated User Privileges*.

System Administration tasks include:

a. Network protocol administration.
b. Access to and management of Center's domain-available peripherals and services (e.g., network time and DNS).
c. Network security management.
d. User account management.

    e.   Provision of Configuration Guidelines and/or remote or on-site system software installed according to those guidelines.

    f.   Workstation host-level security, including information about and access to system/application security patches, network services access control mechanisms, and/or anti-virus mechanisms with installation guidelines and/or remote or on-site installation.

    g.   System software Problem resolution.

    h.   Hardware procurement configuration consultation.

    i.   Local, customized backup, restore, and archive service.

    j.   Site-specific license management for ACES Support Level 2 and 3 applications.

    k.   Direct on-site end-user education and assistance.

    l.   Site-specific consistent system configurations.

    m.   Site-specific system documentation.

    n.   Desk side system administration functions to support the installation and effective execution of organizational specific applications.

    o.   Daily system monitoring.

    p.   System-level performance monitoring, tuning, and optimization.

    q.   Site-specific client-server and network configuration management.

    r.   System account management (e.g., create, lock, and remove IDs).

    s.   Site-specific peripheral management.

    t.   Addressing ongoing and emerging life cycle system administration issues for the installed computing environment.

- *None*—The Contractor shall not perform any system administration tasks on the seat. This Service Option is only applicable to the "Build" seat.

- *Microsoft*—The Contractor shall be responsible for all system administration tasks on the seat.

- *Apple*—The Contractor shall be responsible for all system administration tasks on the seat.

- *Linux*—The Contractor shall be responsible for all system administration tasks on the seat.

- *UNIX*—The Contractor shall be responsible for all system administration tasks on the seat.

5.1.6.3.8 Standard Load

The Contractor shall provide the software defined in NASA-STD-2804*x* (Tables 3.3.1, 3.3.2, and 3.3.3) and Addendum 2, *Software Standard Load* (Tables 1-W, 2-W, 1-M, 2-M, 1-L, 2-L, 1-U, and 2-U)*,* for each Computing seat that has the Standard Load Service Option selected. ACES Support Level 1 software licenses shall be the property of the Contractor. The Contractor shall maintain agreements with the software vendor for any Support Level 1 software for which software assurance agreements are commercially available. The Contractor shall acquire, maintain, and manage the licenses for all software provided as part of the Standard Load, with the exception of any Government-owned software licenses that are provided to the Contractor for inclusion in the Standard Load. For such Government-owned licenses, the Contractor shall maintain and manage the licenses, but the Government retains ownership of the licenses. Any hardware technology

refreshes or memory upgrades necessary to meet ACES Support Level 1 software requirements shall be performed at no additional cost to the Government.

The Contractor shall semi-annually (or upon Government request) evaluate the baseline configuration of ACES-supported software to identify potential updates and improvements (i.e., by applying maintenance or technology refresh enhancements). In effecting these evaluations, the Contractor shall:

a.   Maintain interoperability among the various seat configurations.
b.   Maintain interoperability (including testing and verification) with the existing baseline configuration after any software/hardware modification has been implemented.
c.   Coordinate and integrate with all affected contractors to perform testing of the supported software packages.
d.   Meet the Government implementation schedule.
e.   Coordinate system, product, and service rollouts with the ACES COR, ACES SMEs, and all affected contractors to facilitate implementation and minimize impact to end-users.
f.   Provide test loads to the Government for validation.
g.   Build and test deployment packages for each Center prior to Center-wide and Agency-wide deployment.
h.   Document the process for upgrades and maintenance release.
i.   Work to ensure that Government-supplied applications that were interoperable (as documented in vendor specifications) in the original baseline configuration are interoperable in the new baseline configuration.
j.   Make available the Standard Load and test procedures to the Government to allow the Government to test and validate any additional software not covered by the Standard Load as defined in NASA-STD-2804*x*.

- *Included*—A standard software load and configuration will be included with the seat.

- *None*—No standard software load or configuration will be included with the seat.

5.1.6.3.9 Docking Station Solution

The Contractor shall provide a docking station solution, defined as a base station for a Laptop, Lightweight Laptop, Ultra Lightweight Laptop, or Tablet that provides the equivalent of a desktop system. It includes a docking station, keyboard, mouse, external speakers, and expansion ports. (Note: Port replicators are acceptable only when no base station solution exists.)

- *Docking Station Solution*—A docking station solution compatible with the delivered hardware and OS will be delivered.

- *None*—No docking station solution will be delivered.

5.1.6.3.10 Managed Virtual Machine Services

The Contractor shall provide the services and installation to ensure the capability for computers to run concurrent operating systems.. The virtual machine shall consist of two offerings: (1) Local Virtual Machine and (2) Remote Virtual Machine.

- *Local Virtual Machine*—This service, available on the "M" and "B" Computing seats, shall provide all the functionalities of an "S" Computing seat (Microsoft or Apple*) running concurrently with the host OS. This virtual service shall include the Agency Standard Load for the virtual machine(s) created by this service. The Local Virtual Machine shall be considered a service on the ACES seat and therefore have the same Service Options (e.g., return to service) assigned to the "M" or "B" seat with which it is associated. If System Administration is subscribed for the associated seat, system administration functions to support the virtual machine shall be included.

- *Remote Virtual Machine*—This service, available on the "M" and "B," Computing seats, shall provide all the functionalities of an "S" Computing seat (Microsoft or Apple*) running on a server-based Virtual Desktop Infrastructure (VDI) provided and maintained by the Contractor. End-users will access the virtual desktop service over a network connection using a remote desktop client application or browser. The virtual desktop will be provided to the end-user via an application window displayed by their host OS. The Contractor shall ensure that all instances of the VDI delivered to the end-user have all Agency standard security patches and fixes installed. The VDI delivered to the end-user shall include the Agency Standard Load for the virtual machine(s) created by this service. The VDI shall provide a mechanism to allow storage of all end-user data and non-standard programs. The Contractor shall provide means for data backup and restore functions on an individual account basis.

  * If commercially available.

- *None*—Virtual Machine services are not included with the seat.

5.1.6.3.11 Data Backup and Restore

The Contractor shall provide a means for backup and restore services for a seat's local disk storage. The Contractor shall provide:

a. End-user-selectable frequency and time/day.
b. End-user-selectable data.
c. Data storage off-site and in a secure location.
d. Deleted files recoverable for a minimum of 60 days.
e. Capability for end-user to restore data on an individual file basis without Contractor involvement.
f. Protection of backed up data on an account basis.
g. Data backup validation and reporting, in accordance with Attachment I-2, *DPD*, DRD IT-09, *Data Backup and Restore Services Report*, and investigational support of problem resolution (i.e., contacting the end-user to resolve the issue (ITIL Incident Management)).

h.   Backup of open files (e.g., e-mail PST files).

i.   Government access to information, down to the user or group level, listed in Attachment I-2, *DPD*, DRD IT-09, *Data Backup and Restore Services Report*, Item 15.3.

• *Included*—The Contractor shall provide weekly (or at an alternate frequency set by the end-user) data backup services.

• *None*—Data backup services are not included with the seat.

5.1.7 Reserved

5.1.8 "GC" Government Owned Computing Seat (Hardware Only or All Inclusive)

The Contractor shall provide "GC" Computing seat standard services as identified in Table 5.1.6.2-1, Computing Seats Services and Service Options, and as defined in Section 5.1.6.3, Computing Seats Services and Service Option Definitions.

The Contractor shall ensure the "GC" seat provides Return to Service a defined in Section 5.1.6.3.5, System Administration as defined in Section 5.1.6.3.7, Standard Load (Gold Build) as defined in Section 5.1.6.3.8, and Data Backup and Restore as defined in Section 5.1.6.3.11 for all "GC" seats that subscribe to those service options.

5.2 CELLULAR SEATS

The Contractor shall provide Cellular seats according to two types: Cellular Phone (CELL) seats and Smartphone seats (such as BlackBerrys and iPhones). Prior to any installation of antenna systems, the Contractor shall coordinate with each Center Radio Frequency Spectrum Manager and obtain Government approval. The Contractor shall ensure nationwide coverage and end-user connectivity across all NASA facilities. The Contractor shall provide an Agency shared minute pooled voice plan (per provider) for domestic (not international) voice services. The Contractor shall allow for all calls within the same carrier with no deduction from the pooled minutes plan. The Contractor shall provide free evening and weekend minutes regardless of carrier. The Contractor shall inform the Government of the timeframe for free evening and weekend calling by carrier.

The Contractor shall provide unlimited text messaging services for all Cellular seats.

The Contractor shall deliver new Cellular seats to end-users, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SD-38 and SD-39).

The Contractor shall maintain the current cellular numbers assigned to existing Cellular seats.

The Contractor shall make available a detailed report showing individual usage of all services for all Cellular seats, in accordance with Attachment I-2, *DPD*, DRD IT-01, *Agency Cellular Seat Detail Report*. Excess usage will be assessed through a process jointly determined by the ACES Project Office and the ACES CTMs. If the Government user-combined usage of the pooled minute services exceeds the pooled minutes by carrier, the Contractor shall invoice the Government for the excess usage as prescribed under Other General Services. The Contractor shall make available a report that enables the Government to sort the excess usage data by the individual and Center levels, in accordance with Attachment I-2, *DPD*, DRD IT-01, *Agency Cellular Seat Detail Report*.

All Cellular seats shall have the following minimum set of services:

- High Resolution Color screen (minimum 64K color palette)
- Voicemail
- Password protection and keyboard lock
- Silent/Vibrate notification mode
- Mute control
- Automatic redial
- Caller ID
- Caller waiting
- Wireless, hands-free capability (e.g., Bluetooth)
- Speaker Phone
- SMS/Text Messaging capable

The Contractor shall submit to the Government for review and approval an initial performance and operational analysis for each device. The Contractor shall deliver all devices to the end-user fully configured for immediate use. The Contractor shall offer all Government-approved accessory

options for each device in the APC. Any device battery found to be defective during the normal deployment cycle will be considered a warranty item and shall be replaced as part of the regular seat maintenance option.

The Contractor shall provide for scheduled technology refresh of Cellular seats and initial delivery of application software. The Contractor shall provide the Cellular seats with new versions, upgrades, and modifications associated with the system, and appropriate Cellular seat application software. Software patches are those that enhance the capabilities of the device or provide security and/or bug fixes. The Contractor shall include patch and upgrade acquisition, testing, verification, and installation. Software technology refresh of Cellular seats shall occur in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-40). The Contractor shall ensure that end-users are able to keep existing phone numbers when refreshing ACES Cellular seats. The Contractor shall transfer all contact information and other data stored on a Cellular seat from the old device to the new device at time of refresh.

5.2.1 Cellular Seats Services and Service Options

The Contractor shall provide the following Services and Service Options for all Cellular seats, if commercially available. An "X" in the seat column indicates that the Service Option shall be offered for that seat type.

Table 5.2.1-1 Cellular Seats Services and Service Options

Type of Service/Service Options	"S" Seat	"B" Seat
Voice Mail		
Included	X	X
None		X
International Calling Plan		
Included		X
None	X	X
Camera		
Included	X	X
None		X

5.2.1.1 Voice Mail

The Contractor shall provide the services required for a voice mail system with the following capabilities: recorded announcements; audio and visual indicators of messages awaiting retrieval; forwarding capability; as well as creation, deletion, and retrieval of messages.

5.2.1.2 International Calling Plan

The Contractor shall provide an international voice plan for voice communications outside of the United States. This voice plan shall provide the capability to both make and receive calls to and from the United States to foreign countries and carry the device to foreign countries and make and receive calls to and from there. The Contractor shall make available to the end-user the

information, costs, and guidelines associated with International Calling Plans. All costs associated with International Calling Plans shall be no greater than the current cellular carrier's published voice/data plan rates.

5.2.1.3 Camera

The Contractor shall ensure that the instrument delivered for Cellular seats is equipped with a camera unless the Government end-user specifically chooses to exclude this option for "Build" seat orders.

5.2.2 Cellular Phone Seat (CELL)

5.2.2.1 CELL Seat Definition/General Requirements

The Contractor shall provide a standard Cellular Phone (CELL) seat. The Contractor shall include any services or accessories that the OEM includes as part of the standard packaging. In addition, the Contractor shall provide the battery, wall and car chargers, carrying case (holster), and hands-free headset. The Contractor shall provide all required software licenses for the devices.

The "Build" platform Service Option provides for fully customizable solutions for Cellular Phone hardware. The Contractor shall provide two cellular carrier's hardware vendor's full consumer product line for "B" seat Cellular Phone seats. The Contractor shall provide the full product line for "B" CELL seats at a percentage discount below the manufacturer's suggested retail price.

5.2.2.2 CELL Seat Services and Service Options

In addition to the Cellular standard Service Options described in Section 5.2.1, *Cellular Seats Services and Service Options*, the following Service Options shall be available for the CELL seat, if commercially available. An "X" in the seat column indicates that the Service Option shall be offered for that seat type.

Table 5.2.2.2 CELL Seat Services and Service Options

Type of Service/Service Options	"S" Seat	"B" Seat
Instrument		
Cell Phone	X	█
Product Line	█	X
Hardware Technology Refresh Cycle		
None	█	X
18 Month	X	█
Domestic Calling Plan		
500 Anytime Voice Minutes	X	X
1,200 Anytime Voice Minutes	█	X
Unlimited Anytime Voice Minutes	█	X
Return To Service		

Type of Service/Service Options	"S" Seat	"B" Seat
2 business hours	■	X
8 business hours	X	X

5.2.2.3 CELL Seat Service Descriptions

5.2.2.3.1 Instrument

The Contractor shall provide a choice of color display cellular phones across multiple vendors.

5.2.2.3.2 Hardware Technology Refresh

The Contractor shall provide scheduled technology refresh of device hardware and required peripherals to more effectively and efficiently perform the objectives of the CELL seat type.

5.2.2.3.3 Domestic Calling Plan

The Contractor shall provide a domestic voice plan for anywhere in the Continental United States (CONUS) with no roaming or long distance charges.

5.2.2.3.4 Return To Service

The Contractor shall provide standard hardware and software maintenance services for the seat that includes: system diagnostics and troubleshooting; system and component maintenance; hardware configuration, tracking, and documentation; and appropriate CELL seat software, patch and upgrade acquisition, testing, verification, and installation.

5.2.3 Smartphone Seat

5.2.3.1 Smartphone Seats Definition/General Requirements

The Contractor shall provide a fully managed and supported Smartphone with wireless enterprise solution services capable of providing voice, Broadband/high-speed data transfer (e.g., SMS, Internet Browsing, and Multimedia Messaging Service (MMS)), Microsoft Exchange-based calendar and e-mail capable data communications, International voice/data communication, and Bluetooth capability. The Contractor shall include any services or accessories that the OEM includes as part of the standard packaging. In addition, the Contractor shall provide the battery, computer synchronization cable where necessary, wall and car chargers, cradle, carrying case (holster), and hands-free headset. The Contractor shall provide all required software licenses for the devices. In addition, the Contractor shall provide the appropriate software that supports synchronization between the Smartphone seat and the associated end-user's Computing seat. The Contractor shall maintain the device to be compatible with ACES Desktop/Laptop systems/software as it relates to the synchronization and transfer of data. All functionality of such a device shall be governed by the server-based policies as defined by the NOMAD service and a corresponding server-based environment that supports device-level policy enforcement and device-level data encryption. The Contractor-provided device shall have Over-The-Air (OTA)

provisioning capability for device-level software/firmware/patching. The Contractor shall provide hardware technology refresh of the devices according to the Service Option selected. The Contractor or device shall provide the applicable application software to enable the viewing of word processing, spreadsheets, presentation, and Portable Document Format (PDF) data files on such devices as defined in NASA-STD-2804x. The Contractor shall provide and support the necessary hardware, software, installation, server activation, and interface with the NOMAD service in support of the Cellular seats. The configured system(s) shall be incorporated into the ACES institutional IT support structure.

The Contractor shall ensure that any Smartphone device deployed to the end-users is compliant with NASA IT Security Requirements, as defined in NPR 2810.1x (e.g., password protection, keyboard lock, and S/MIME encryption) and is compatible with and able to support the NASA DAR solution. Data storage for this device, both internal and removable (e.g., microSD card), must conform and adhere to the current DAR standard/guideline (to be determined).

In addition to the minimal set of Cellular seat services, the Smartphone seat shall include the following feature set:

- QWERTY keyboard (physical or screen-based).
- Instant Messaging capable.
- Internet Browser.
- Internal or Removable Storage (such as SD or microSD card).
- OTA.
- Wireless, seamless, and near real-time data synchronization of the end-user's desktop e-mail, calendar, contacts, notes, and tasks.
- DAR compliant (Hardware and/or Software encryption capable).

The "Build" platform Service Option provides for fully customizable solutions for PDA hardware platforms. The Contractor shall provide a minimum of two cellular carrier's hardware vendor's full consumer product line for "Build" seat Smartphone hardware platforms. The Contractor shall provide the full product line at a Contractor-specified percentage discount below the manufacturer's suggested retail price and lower than any commercially available price for the "Build" Smartphone seat.

5.2.3.2 Smartphone Seats Services and Service Options

In addition to the Cellular standard Service Options described in Section 5.2.1, *Cellular Seats Services and Service Options*, the following Service Option definitions apply to the Smartphone seat, if commercially available. An "X" in the seat column indicates that the Service Option shall be offered for that seat type.

Table 5.2.3.2-1 Smartphone Seats Services and Service Options

Type of Service/Service Options	"S" Seat	"M" Seat	"B" Seat
Instrument			
None			X
Research-In-Motion (RIM)-based	X	X	X
Apple-based	X	X	X
Other Architecture		X	X
Hardware Technology Refresh Cycle			
None			X
18 Month	X	X	
Domestic Calling Plan			
Data Only			X
500 Voice Minutes	X	X	X
1,200 Voice Minutes		X	X
Unlimited Voice Minutes		X	X
Return To Service			
None			X
2 business hours		X	X
8 business hours	X	X	X
Tethering			
None	X	X	X
Included		X	X
Mobile Hotspot			
None		X	X
Included		X	X

5.2.3.3 Smartphone Seats Service Descriptions

5.2.3.3.1 Instrument

The Contractor shall provide a choice of color display devices, including but not limited to a RIM-based device, Apple-based device, or Windows Mobile capable device.

5.2.3.3.2 Hardware Technology Refresh

The Contractor shall provide for scheduled technology refresh of device hardware and required peripherals to more effectively and efficiently perform the objectives of the Smartphone seat type.

5.2.3.3.3 Domestic Calling Plan

The Contractor shall provide domestic voice plan for anywhere in the United States with no roaming or long distance charges. All service plans for the Smartphone seats shall include the unlimited data service plan.

5.2.3.3.4 Return To Service

The Contractor shall provide standard hardware and software maintenance services for the seat that includes: system diagnostics and troubleshooting; system and component maintenance; hardware configuration, tracking, and documentation; Smartphone operating system and appropriate Smartphone seat software; and patch and upgrade acquisition, testing, verification, and installation.

5.2.3.3.5 Tethering

The Contractor shall provide the capability to utilize a Smartphone as a cellular modem to access the Internet when connected to a Computing seat.

5.2.4 Other Mobile (OM) Seat

5.2.4.1 Other Mobile Seats Definition/General Requirements

The Contractor shall provide a fully managed and supported mobile device with wireless enterprise solution services capable of providing Broadband/high-speed data transfer (e.g., Internet Browsing), Microsoft Exchange-based calendar and e-mail capable data communications, International data communication, and Bluetooth capability. The Contractor shall include any services or accessories that the OEM includes as part of the standard packaging. In addition, the Contractor shall provide the synchronization cable where necessary, wall charger, cradle, and carrying case. The Contractor shall provide all required software licenses for the devices. In addition, the Contractor shall provide the appropriate software that supports synchronization between the OM seat and the associated end-user's computing seat. The Contractor shall maintain the device to be compatible with ACES Desktop/Laptop systems/software as it relates to the synchronization and transfer of data. All functionality of such a device shall be governed by the server-based policies as defined by the NOMAD service and a corresponding server-based environment that supports device-level policy enforcement and device-level data encryption. The Contractor-provided device shall have Over-The-Air (OTA) provisioning capability for device-level software/firmware/patching. The Contractor shall provide hardware technology refresh of the devices according to the Service Option selected. The Contractor or device shall provide the applicable application software to enable the viewing of word processing, spreadsheets, presentation, and Portable Document Format (PDF) data files on such devices as defined in NASA-STD-2804x. The Contractor shall provide and support the necessary hardware, software, installation, server activation, and interface with the NOMAD service in support of the OM seats. The configured system(s) shall be incorporated into the ACES institutional IT support structure.

The Contractor shall ensure that any OM device deployed to the end-users is compliant with NASA IT Security Requirements, as defined in NPR 2810.1x (e.g., password protection, keyboard lock, and S/MIME encryption) and is compatible with and able to support the NASA DAR solution. Data storage for this device, both internal and removable (e.g., microSD card), must conform and adhere to the current DAR standard/guideline (to be determined).

In addition to the minimal set of OM seat services, the OM seat shall include the following feature set:

- QWERTY keyboard (physical or screen-based).
- Instant Messaging capable.
- Internet Browser.
- Internal or Removable Storage (such as SD or microSD card).
- OTA.
- Wireless, seamless, and near-real-time data synchronization of the end-user's desktop e-mail calendar, contacts, notes, and tasks.
- DAR compliant (Hardware and/or Software encryption capable).

5.2.4.2 Other Mobile Seats Services and Service Options

The following Service Option definitions apply to the Other Mobile seat, if commercially available. An "X" in the seat column indicates that the Service Option shall be offered for that seat type.

Table 5.2.4.2-1 Other Mobile Seats Services and Service Options

Type of Service/Service Options	"S" Seat	"M" Seat
Instrument		
Apple-based	X	X
Hardware Technology Refresh Cycle		
24 Month	X	X
Data Plan		
None (Wi-fi)	X	X
Unlimited Domestic	X	X
International	X	X
Return to Service		
None	■	X
2 business hours	■	X
8 business hours	X	X

5.2.4.3 Other Mobile Seats Service Descriptions

5.2.4.3.1 Instrument

The Contractor shall provide an Apple-based color display device.

5.2.4.3.2 Hardware Technology Refresh

The Contractor shall provide for scheduled technology refresh of device hardware and required peripherals to more effectively and efficiently perform the objectives of the OM seat type.

5.2.4.3.3 Data Plan

The Contractor shall provide a domestic data plan for anywhere in the United States to include an unlimited data service plan with no roaming or long distance charges.

5.2.4.3.4 Return to Service

The Contractor shall provide standard hardware and software maintenance services for the seat that includes: system diagnostics and troubleshooting; system and component maintenance; hardware configuration, tracking, and documentation; other mobile operating system and appropriate OM seat software; and patch and upgrade acquisition, testing, verification, and installation.

5.2.5 NON-ACES OTHER MOBILE "GM" SEAT

The Contractor shall provide unlimited domestic data plans for non-ACES devices such as iPads, Android tablets, etc. Following addition of the proposed CLINs to ESRS, the Contractor will begin providing domestic data plans within 30 days. The CLINs described herein are for Government-owned, non-ACES, tablet-type devices (iPad, Android, etc.). The device must be carrier-capable, meaning it must be usable on the selected carrier's service. Return to Service (RTS) is available for domestic data plan issues only for non-ACES devices. No Mobile Device Management is included. The Contractor is not responsible for the device. The Contractor only provides the data plans which the device will use. If a device with a data plan is not operable, data plan charges are still incurred until the service is de-subscribed. To order, the user will select the appropriate data service that will reference the new CLINs in ESRS (for example, GM-2 AT&T). The Contractor will provide a domestic data plan within three days of receipt of a validated and approved ESRS order. The end-user can specify when they would like for service to start. The service will be billed for a minimum of one month. To turn off data plan service, the end-user must de-subscribe the service.

5.2.5.1   Non-ACES Other Mobile "GM" Seats Services and Service Options

The following Service Option definitions apply to the Non-ACES Other Mobile "GM" seat, if commercially available. An "X" in the seat column indicates that the Service Option shall be offered for that seat type.

Table 5.2.5.1-1 Non-ACES Other Mobile "GM" Seats Services and Service Options

Type of Service/Service Options	"GM" Seat
Instrument	
Government Owned iPad, Android Tablet, etc…	X
Hardware Technology Refresh Cycle	
24 Month	■
Data Plan	
None (Wi-fi)	■
Unlimited Domestic	X
International	X
Return to Service	
None	■
2 business hours	■
8 business hours for domestic data only	X

5.2.5.2 Data Plan

The Contractor shall provide a domestic data plan for anywhere in the United States to include an unlimited data service plan with no roaming or long distance charges.

5.2.5.3 International

The Contractor has provided an Option to Add International Data Plans for non-ACES Other Mobile Device (iPad, Android, etc.). The user must subscribe to a domestic plan to add an international plan. International data plans for devices are already available for ordering under International Cellular Services.

5.2.5.4 Return to Service

The Contractor shall provide 8 hour return to service for domestic data plan issues only.

5.3 PAGER SEAT

5.3.1 Pager Seat Definition/General Requirements

The Contractor shall provide pager services that shall be made available via the ordering of Pager seats. Each Pager seat shall include a pager instrument that is appropriate to the Service Option ordered, a belt clip, and end-user documentation. The Contractor shall include the following elements within this service:

- Numeric, alphanumeric, and 2-way alphanumeric paging
- Statewide and nationwide coverage areas
- Voicemail notification
- Local and toll-free number services
- Return To Service features

The Contractor shall deliver Pager seats to end-users, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-41).

The Contractor shall maintain the current pager numbers assigned to existing pagers. For numeric and alphanumeric offerings, the Contractor shall include in the seat price up to 500 messages per month. For two-way alphanumeric offerings, the Contractor shall include in the seat price up to 500 message blocks per month (1 message block = 100 characters maximum). The Contractor shall identify, evaluate, and report to the Government any questionable or unusually high usage of pager services.

The following Service Options shall be available for the Pager seat, if commercially available.

Table 5.3.1-1 Pager Seat Services and Service Options

Type of Service/Service Options
Instrument
Numeric (500 pages/month)
Alphanumeric (200 pages/month, e-mail) One-way/Alias
Alphanumeric (200 pages/month, e-mail) Two-way/Alias
Service Plan
Local Only
Statewide
Nationwide
800 Number
Voice Mail Notification
None
Sent to Pager
Octel Message Notification (Outcalling)
None
Enabled
Return To Service
2 business hours
8 business hours

5.3.2 Pager Seat Service and Service Option Descriptions

5.3.2.1 Instrument

The Contractor shall provide a choice of several pager devices across multiple vendors.

5.3.2.2 Service Plan

The Contractor shall provide the required communication service plan-based domestic usage for use anywhere in the continental United States with no roaming or long distance charges.

- *Local*—Unlimited messaging (local coverage)

- *Statewide*—Unlimited messaging (statewide coverage)

- *Nationwide*—Includes 500 pages/messages per month (CONUS coverage)

- *800 Number*—Toll-free pager number

5.3.2.3 Voice Mail

The Contractor shall provide the services required for the pager to receive notification from a voice mail system.

5.3.2.4 Octel Message Notification (Outcalling)

The Contractor shall provide the end-user with the capability to set up a telephone number where he or she is notified of messages received. The end-user can specify a time range to receive notification.

5.3.2.5 Return To Service

The Contractor shall provide standard hardware and software maintenance services for the seat that includes: System diagnostics and troubleshooting; system and component maintenance; hardware configuration, tracking, and documentation; appropriate pager seat software; and patch and upgrade acquisition, testing, verification, and installation.

5.4 NETWORK PERIPHERAL SEATS

The Contractor shall provide Network Peripheral seats, which are comprised of Network Printer (PRN) seats and Multi-Functional Device (MFD) seats. The Contractor shall provide Agency shared impression pools for Black and White (B&W) and Color impressions, respectively. The Contractor shall total all B&W impressions and all Color impressions monthly.

The Contractor shall make available a detailed report showing individual usage of all services for all Network Peripheral seats, in accordance with Attachment I-2, *DPD*, DRD IT-08, *Agency*

Network Peripheral Seats Detail Report. Excess usage will be assessed through a process jointly determined by the ACES EUSO Office and the ACES SMEs. If the Government seat-combined usage of the pooled impression services exceeds the pooled impressions, the Contractor shall invoice the Government for the excess usage as prescribed under Other General Services. The Contractor shall make available a report that enables the Government to sort the excess usage data by seat and Center levels, in accordance with Attachment I-2, *DPD*, DRD IT-08, *Agency Network Peripheral Seats Detail Report*.

5.4.1 Network Peripheral Seats Definition/General Requirements

PRN and MFD seats include hardware, maintenance, support, and network connectivity, and can interface with authorized computers to provide, at a minimum, print functionality. The Contractor shall coordinate with the network provider to ensure the availability of connectivity for these devices. The subscriber will identify the specific physical location of each PRN/MFD seat and will identify each customer who will have operational access to each PRN/MFD seat. The Contractor shall provide a diagram of where the PRN and MFD seats are located at each Center.

The Contractor shall deliver new Network Peripheral seats to end-users, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Target SD-42).

All MFDs will be refreshed in 60 month intervals for the remainder of the ACES contract performance period. Previously de-subscribed MFDs with less than three (3) years of usage can be re-deployed to fulfill new seat orders.

- A Network Peripheral seat that is less than 3 years old from the initial installation date can be re-deployed to fulfill new seat orders.
- For any network peripheral seat (MFD or printer) that repeatedly fails (more than 3 times) due to a hardware related problem, HPES shall replace the network peripheral seat in lieu of repair, at no additional cost to NASA, and remove the failed seat from service. The failed seat will not be put back in service at NASA during the period of the contract.
- For any network peripheral seat that has changing requirements and needs to be replaced with a device that has different print bands or B&W or color requirements, the device will require an early tech refresh where an amount to payout the device will be required. If HPES reuses the same device in the NASA environment, then HPES will credit back to the NASA organization, the amount of ATV that was paid out, less any time that the machine wasn't used.
- NASA will receive a credit to the cost center which paid the ATV or to a cost center as directed by the I3P Business Office. The value will be the ATV of the asset on the redeployment date.

The Contractor shall be responsible for taking accurate meter readings (remotely, if possible) monthly of each machine at each MFD and PRN seat location during the last week of each month. Where physical access to machines located in restricted areas is necessary, the Contractor shall coordinate access with the ACES SMEs. Meter readings shall be taken for scan, fax, copy, and print services for MFD seats and print services for PRN seats. The Contractor shall report MFD

and PRN meter readings to the Government, in accordance with Attachment I-2, *DPD*, DRD IT-08, *Agency Network Peripheral Seats Detail Report*.

The Contractor shall provide features for Network Peripheral seats as defined in Addendum 3, *Minimum Hardware Requirements*.

If the Contractor plans to replace the currently installed manufacturer/model for any installed PRN or MFD seat, the Contractor shall provide advance written notification of the proposed replacement to the ACES COR or designee for approval.

For each PRN or MFD seat to be replaced, the replacement manufacturer/model shall meet or exceed the capabilities of the device being replaced and fit within the original device footprint unless waived by the ACES COR or designee.

All Network Peripheral Seats shall be refreshed every 5 years (i.e. 5 year refresh cycle).

The Government is responsible for supplying paper for the PRN and MFD seats. The Contractor shall provide all other consumables needed to maintain the functionality of any PRN and MFD seat, including toner, staples, other replenishable items, and repair parts.

5.4.1.1 Network Printer (PRN) Seats

The Contractor shall provide the PRN seats defined in Sections 5.4.1.1.1, *PRN B&W Seat*, and 5.4.1.1.2, *PRN Color Seat*. The Contractor shall provide PRN seats that meet the speed bands defined in Table 5.4.1.3-1, *Network Peripheral Seats Speed Bands*.

5.4.1.1.1 PRN B&W Seat

The Contractor shall provide a PRN B&W seat that is a high-performance black and white printer.

5.4.1.1.2 PRN Color Seat

The Contractor shall provide a PRN Color seat that is a high-performance color printer.

Table 5.4.1.1-1. Network Printer Seats Services and Service Options

Type of Service/Service Options
Model Type B&W
Monthly Volume Band
5,000 B&W impressions per machine per month
Return To Service (4-hour RTS included)
2 business hours
Model Type Color
Monthly Volume Band
2,000 Color/5,000 B&W impressions per machine per month
Return To Service (4-hour RTS included)
2 business hours

5.4.1.2 Multi-Functional Device (MFD) Seats

The Contractor shall provide the mandatory minimum features for MFD seats as defined in Addendum 3, *Minimum Hardware Requirements*. The MFD base services provide functionality such as copying, printing, scanning, faxing, and the option of enabling multiple fax lines.

The Contractor shall provide two networkable MFD seat types (one black and white; and color with black and white capability) that are configured to perform copy, print, scan, and fax functions. A fully-functional, network-ready MFD seat is defined as follows: Upon activation of the start button, the MFD is able to perform the following requested functions:

- Copy hardcopy to hardcopy.
- Print hard copy from electronic source.
- Scan hardcopy to a designated location.
- Send and receive fax hardcopy to/from a designated telecommunication location.

The Contractor shall be responsible for reading the meter counters for invoicing and reports.

The Contractor shall deliver additional equipment minimum features by model type as well as mandatory minimum features for all MFD seats as follows:

5.4.1.2.1 B&W MFD Desktop Model

- No unique requirements.

5.4.1.2.2 Color MFD Desktop Model

- No unique requirements.

5.4.1.2.3 B&W MFD Floor Model

- No unique requirements.

5.4.1.2.4 Color MFD Floor Model

- No unique requirements.

5.4.1.2.5 Scanning

The Contractor shall provide the following scanning features for all MFDs:

- Scan from B&W, grayscale, and color (where supported by the hardware)
- Ability to scan single-sided or duplex originals without manual intervention
- Scans maximum paper size ledger at 600 dpi in 256 grayscale increments
- Scans "Off the glass" – job build multiple pages of various sizes into a single file
- Embedded scan to e-mail with Lightweight Directory Access Protocol (LDAP)
- Ability to use Simple Mail Transfer Protocol (SMTP) and SMTP authentication
- Ability to use PIV II Smartcard authentication

5.4.1.2.6 Facsimile

The mandatory minimum facsimile requirements are:

- Minimum one fax line
- Fax to fax
- Group dialing
- Quick dialing
- Page by page job status at the machine
- Transmission confirmation
- Ring tone adjustable
- G3 33.6 Kbps Modem with auto fallback
- Automatically stores incoming faxes in memory in the event paper or toner runs out or the machine experiences a jam

5.4.1.2.7 Printing

The Contractor shall provide drivers to the end-user systems, and shall maintain functional compatibility with ACES systems. The mandatory minimum printing requirement is to provide a secure print function, which permits the end-user to print using an identification code/name of up to 10 digits.

Table 5.4.1.2-1. Networkable Black and White MFD Seat Services and Service Options

Type of Service/Service Options
Model Type Desktop
Monthly Volume Band
5,000 B&W impressions per machine/month
Return To Service (4-hour RTS included)
2 business hours
Model Type Floor
Monthly Volume Bands
Vol. Band 1 7,500 B&W impressions per machine/month
Vol. Band 2 15,000 B&W impressions per machine/month
Vol. Band 3 30,000 B&W impressions per machine/month
Return To Service (4-hour RTS included)
2 business hours
Fax Enabled (1 fax line included)
Added second fax line
Capacity Tray
Capacity Tray
Optional Large-Capacity Tray
2-Hole/3-Hole Punch
None
Optional 2-Hole/3-Hole Punch

Table 5.4.1.2-2. Networkable Color MFD Seat Services and Service Options

Type of Service/Service Options
Model Type Desktop
Monthly Volume Bands
2,000 Color/5,000 B&W impressions per machine/month
Return To Service (4-hour RTS included)
2 business hours
Model Type Floor
Monthly Volume Bands
Vol. Band 1 2,000 Color/7,500 B&W impressions per machine/month
Vol. Band 2 4,000 Color/15,000 B&W impressions per machine/month
Vol. Band 3 High-End Fiery Graphics 4,000 Color/15,000 B&W impressions per machine/month
Return To Service (4-hour RTS included)
2 business hours
Fax Enabled (1 fax line included)
Added second fax line
Large-Capacity Tray
Optional Large-Capacity Tray
2-Hole/3-Hole Punch
Optional 2-Hole/3-Hole Punch

5.4.1.3 Network Peripheral Seat Service and Service Option Definitions

5.4.1.3.1 Model

The Contractor shall provide two types of MFD models: (a) floor model (including cabinet) and (b) a desktop model.

5.4.1.3.2 Volume Bands

The Contractor shall provide volume bands, which determines the number of pages that the Contractor includes in the seat price. All pages up to the volume band are included in the seat price. The Contractor shall invoice the Government for all pages exceeding the volume band on a per-page cost. Although billed monthly for accounting and management purposes, unused impressions will be banked and any unused impressions at the end of the year will be adjusted against any monthly overages and credited back to the Government.

5.4.1.3.3 Speed Bands

The Contractor shall provide Network Peripheral seats that meet the speed bands defined in Addendum 3, *Minimum Hardware Requirements*. A solution that exceeds the pages per minute (PPM) listed for a particular speed band can be offered.

5.4.1.3.4 Return To Service

The Contractor shall provide a 4-hour Return To Service with an option for a 2-hour Return To Service, which determines the period of time allotted for repairs to be made to return the device to full operational status.

5.4.1.3.5 Additional Facsimile Line

The Contractor shall provide an option for a second facsimile line to be enabled for the service.

5.4.1.3.6 Large-Capacity Tray

The Contractor shall provide large-capacity tray options, which determines the number of sheets of paper available in the feeder tray. The large capacity tray shall provide at least 1,500 sheets.

5.5 VIRTUAL TEAM SERVICE (VTS) SEAT

5.5.1 VTS Seat Description

The Contractor shall provide and manage a VTS seat. The Contractor shall make the VTS service and seats available beginning with the Contract Implementation date for Wave 1 (see Attachment 14, *Phase-In Schedule*). The VTS seat shall provide a Web browser-based system that enables the NASA end-user community and external partners to conduct Web conferencing discussions

inclusive of Sensitive But Unclassified (SBU) data and materials regulated by International Traffic in Arms Regulations (ITAR) during Web conferencing.

The Contractor shall provide and deliver new VTS accounts to end-users for VTS seat subscriptions, in accordance with Attachment I-3, *Retainage Pools and Performance Metrics* (SLA Targets SD-43).

The Contractor shall support three types of VTS meetings:

    a.   <u>Standard</u>: Minimum credentials are required. Capability for end-users to communicate SBU or ITAR data is not required. VTS meetings shall be secured by protocol to allow participant access via a unique meeting number and password distributed with the meeting invitation without requiring additional authentication.

    b.   <u>Authenticated</u>: Requires authentication with NASA's electronic authentication service (currently Sun Access Manager Electronic Authentication). Authenticated meetings require participants to possess a NASA-issued credential to be used for identification and authentication.

    c.   <u>Invitation Only</u>: A sub-category of authenticated meetings in item (b) above in which only those who are invited may attend.

The VTS seat owner will be the primary seat host and delegator. Voice communications are accomplished via office telephones or any other means and are not within the scope of this service.

5.5.2 VTS Requirements

The Contractor shall provide a Virtual Team Service that meets the following functional requirements.

For Standard meetings, the VTS shall:

    a.   Provide the capability to conduct unauthenticated online meetings with participants (i.e., NASA and external end-users).

    b.   Provide the capability to add an invitee to a standard meeting while the meeting is in session.

For Authenticated meetings, the VTS shall:

    c.   Integrate into NASA eAuthentication service using the SAMLv2 protocol, thus ensuring only persons with a valid account in the NASA eAuthentication service are able to access authenticated meetings.

    d.   Provide the capability to add an invitee to a meeting while the meeting is in session, consistent with item (a) above.

For Invitation Only meetings, the VTS shall:

e.   Integrate into NASA eAuthentication service using the SAMLv2 protocol, thus ensuring only persons with a valid account in the NASA eAuthentication service are able to access authenticated meetings.

f.   Enable limited-access authenticated meetings by restricting meeting access to valid accounts in the NASA eAuthentication service, for invitee list attendees only.

g.   Validate each invitee against the invitee list.

h.   Provide the capability to add an invitee to a limited-access authenticated meeting while the meeting is in session, consistent with items (a), (b), and (c) above.

i.   Prevent forwarded meeting notices from providing access to a meeting.

For all meetings, the VTS shall:

j.   Require meeting invitations to be sent by the host from within the VTS Web-based interface.

k.   Allow anyone in the NASA eAuthentication service to be a meeting participant.

l.   Allow only seat owners to create and host meetings.

m.   Integrate contact lists from NASA-STD-2804x-approved e-mail clients.

n.   Provide seat owners with the capability to host, schedule, and delegate meetings.

o.   Provide meeting attendees with a standard "Authorized Government System" usage banner during login.

p.   Provide the capability to delegate meeting scheduling and hosting of meetings.

q.   Make available monthly utilization and trend data by customer.

r.   Provide secure (FIPS 140-2-compliant encryption applied to all sessions) and non-sensitive Web conferencing.

s.   Ensure all infrastructure required to provide the service resides in the United States only in a segregated environment which meets FISMA requirements and is separate from other commercial environments. In addition, ensure support staff for the VTS are comprised of only United States citizens.

t.   Provide secure online collaboration via any HTTPS Internet connection worldwide.

u.   Support display of documents of all formats.

v.   Support sharing of desktops and remote applications.

w.   Provide unlimited minutes (i.e., no charge for amount of time spent in meeting).

x.   Provide the capability to conduct meetings with up to 1,000 concurrent attendees.

y.   Provide the capability to have additional concurrent meeting attendees beyond the meeting limitation (i.e., 1,000 concurrent attendees) on a per-attendee charge.

z.   Provide the capability (and associated cost model) to accommodate planned events of up to a maximum of 3,000 concurrent meeting attendees in limited functionality mode only (no expectation of switching presenters between all 3,000 people).

5.5.3 Current NASA VTS Implementation

The current Virtual Team Service seat and service (currently known in NASA as Virtual Team Meeting), is described in the documents entitled *ODIN Virtual Team Meeting Service Description* and *ODIN VTM Infrastructure Upgrade Proposal (IUP) for eAuthentication*, which are provided in the I^{3}P Technical Library for ACES. This service is a scalable Web collaboration system based on WebEx technology that enables the NASA end-user community and external partners to discuss SBU and ITAR data during Web conferencing.