

Ames Consolidated Information Technology Services (A-CITS) Statement of Work

C.1 Mission Functions

C.1.1 IT Systems & Facilities Support

System Administration: The Contractor shall provide products and services in order to maintain a stable, efficient, and productive computer system and computing environment. These activities include: system software maintenance and updates, ensuring compliance with Center IT security requirements, user account management, configuration management, system upgrade / improvement, computing operations, maintenance of systems documentation and procedures, and contingency planning.

IT Security: The Contractor shall provide a safe and secure computing and communication environment through the protection of IT based systems, components, and information such as computers, networks, other computing and communication devices, software applications, operating systems, and data.

Technical areas of focus for IT Security include: risk analysis and assessment; system monitoring and intrusion detection; penetration testing; incident response plans and capabilities; firewall design, development, monitoring, maintenance, and upgrades; development, integration and deployment of advanced encryption and security services; public key infrastructure and services; disaster planning and recovery; security education and training for security staff and the user community; and security coordination with other NASA Centers, NASA HQs, other U.S. Government departments and agencies, and other relevant organizations.

Facility Support: The Contractor shall provide technical and administrative support to specific IT facilities and infrastructure that require environmental controls, regulation, and/or conditioning above and beyond what an average professional office complex would provide.

Hardware / Software Maintenance: The Contractor shall provide for the repair and replacement of hardware components and software modules, applications, and systems necessary to ensure the operability of all covered computing and communication systems. Supporting functions include problem diagnosis, repair or replacement of failing or failed components, verifying that components, modules, and applications meet applicable standards, system performance testing and verification, data integrity and restoration, and an understanding of applicable security considerations regarding sensitive or classified data or systems.

Application Management: The Contractor shall provide products and services to ensure that the suite of software applications in use by the ARC user community

- are compatible within and across covered systems;
- are purchased, maintained, and upgraded in a cost effective and legal manner;
- and
- allow for effective communication between ARC customers and suppliers.

The Contractor shall provide products and services to ensure that that custom software is maintained and upgraded using documented processes that guarantee proper configuration control, traceability, and computing integrity.

Data Storage Retrieval and Archival: The Contractor shall provide the IT systems and related services necessary to store and to have reliable and secure access to large amounts of electronic data. Technical areas of focus include: systems engineering, deployment, and operations; storage for near-term, long term, and archival requirements; shared access and security features; data integrity, disaster plans, and backup systems; user interface / access systems; identifying potential sources for required products and services; and assessing new relevant technologies and technical approaches.

Records Management: The Contractor shall provide for the design, development, installation, maintenance, operations, upgrades, configuration management, archiving, customer support, training; and security of electronic records systems and related applications including tracking systems for technical reports and data. The Contractor shall provide technical support and coordination to ensure effective and efficient Records Management, including but not limited to entering records into the system; reviewing policies and procedures; supporting day to day operations; and archiving records.

Customer Support: The Contractor shall provide products and services to assist customers with basic use of equipment and applications and also providing prompt response and resolution to user problems. Services include establishing and maintaining a call support center / help desk, a response plan, a response team, and a continuous improvement plan based on customer feedback and benchmarking.

Technical Planning, Analysis, & Training: The Contractor shall provide technical support in the conduct of: IT related technical planning associated with IT resources management; planning for new IT systems and IT facilities; definition of near and long range IT requirements; and evaluation of new standards, practices, and policies. The Contractor shall provide technical resources to support: engineering analysis and evaluation of new IT concepts, technologies, architectures, and systems; definition of functional requirements and synthesis of IT systems requirements; identification of relevant solutions, systems, and products; and development of cost / benefit estimates.

The Contractor shall provide technical support and coordination to ensure effective and efficient IT training, including defining requirements; identifying potential sources for required products and services; designing, developing, and updating relevant training materials; scheduling, coordinating, and conducting relevant training classes; assessing new relevant technologies and technical approaches to improve training effectiveness.

C.1.2 Network / Communication Systems & Support

The Network / Communication Systems & Support area is focused on operating, maintaining, managing and improving the infrastructure necessary to enable and enhance communications between human and/or computer customers and clients.

Network Design & Development: The Contractor shall define network requirements; identify potential sources for required products and services; maintain proficiency with legacy systems; assess new relevant technologies and technical approaches; recommend relevant solutions; estimate costs and benefits; and design, develop, deploy, and test hardware and/or software systems.

Network Services: The Contractor shall provide for the installation, operation, management, monitoring, maintenance, repair, documentation, and upgrade of computer networks at the Center including local area networks, wide area networks, private networks, and remote access services. The Contractor shall provide coordination with other NASA

Centers, Common Carriers, and commercial providers in support of external network links and services.

Network / Communications Infrastructure: The Contractor shall provide support for the administration, configuration management, maintenance, documentation, and improvement of the network / communication infrastructure such as the underground and in-building cable plants utilized to provide communication services at ARC. These activities include: engineering planning and design; installation and termination; maintenance of inventory and documentation; and testing / trouble-shooting/repair. The Contractor shall provide coordination with other NASA Centers, Common Carriers, and commercial providers in support of external network links and services.

Distributed Systems: The Contractor shall provide for the installation, operation, management, monitoring, maintenance, repair, and upgrade of distributed systems, which generally consist of clusters of networked computers and other computer and/or communication equipment, located at various sites throughout the Center.

Audio, Video, and Voice Communication Systems: The Contractor shall provide for the administration, operation, maintenance, repair, and installation of audio, video, and voice systems. The Contractor shall provide coordination with other NASA Centers, Common Carriers, and commercial providers in support of external network links and services. Audio Systems include portable public address systems, auditorium audio systems, individual building intercom systems, and paging systems.

Video Systems include surveillance systems; auditorium video systems; closed-circuit video; the Center's cable access television system; digital video systems coordination and integration; Direct Satellite Service; VIDNET; video teleconferencing centers (VITS); desktop video conferencing; and the distribution of video signals via the Video Control Center across the campus as well as to and from the satellite ground stations.

Voice Communication Systems include voice only teleconferencing (VOTS); PBX lines, non-switched phone lines; facsimile machines; digital telephone switching (PBX) systems; voicemail services; telephone management systems; secure voice communication systems; operator services; message center services; and ARC telephone directory services.

Wireless / Emergency Communication Systems: The Contractor shall provide for the technical support, maintenance, and repair of wireless (e.g. RF and optical) communication devices such as radios, cell phones, pagers, and other communication devices. The Contractor shall provide coordination with other NASA Centers, Common Carriers, and commercial providers in support of external network links and services.

The Contractor shall provide for the operation and technical support of emergency communication services and the management of ARC's use of the RF frequency spectrum under the guidance of the ARC RF Spectrum Manager.

C.1.3 Business Systems & Support

This area consists of IT systems and support required for the day to day business processes and services necessary to operate the Center such as financial services, human resources, security, logistics, and business system infrastructure.

Coordination and integration with current and future business systems at the Center and across the Agency is critical to the efficient and effective operations of NASA in general. Specific Business Systems may be managed and operated from a single NASA organization for the entire Agency, while other systems are managed and operated separately by each NASA Center.

Financial Services: The Contractor shall provide for the design, development, implementation, modification, maintenance, and operation of software tools and applications

that support accounting, finance, acquisition and procurement, contracting, and payroll functions.

Human Resources, Security, & Logistics: The Contractor shall provide for the design, development, implementation, modification, maintenance, and operation of software tools and applications that support employee training, employee benefits, other human resource services, security management, cardkey / electronic access, and logistics and property management.

Business Systems Infrastructure: The Contractor shall provide for the design, development, installation, modification, maintenance, operations, upgrades, configuration management, and security of business systems databases, application servers, and web servers.

C.1.4 Scientific Computing Systems & Support

Scientific Computing consists of designing, developing, installing, modifying, configuring, operating, and maintaining software and computing systems in order to solve computationally intensive and/or complex engineering and scientific problems in support of ARC missions, programs, and projects.

General requirements include developing and supporting relevant software tools, their computing platforms, and user interfaces; creating models and algorithms and modifying them to be compatible with specific tools; analyzing models and computational integrity; data acquisition and analysis; computational analysis; tool integration; and maintaining legacy software and systems.

Although specific areas of Scientific Computing are described below, it is not practical or desirable to list all of the current or future ARC mission areas, programs, and projects that this SOW will support. During the life of this contract, task orders may be written to support similar work within the Center (by Programs or Organizations) that also fall within these information technology areas.

Scientific Applications: Areas in which support shall be required include: The design, development, implementation, modification, integration, maintenance, and operation of software algorithms, tools, and applications that address complex and / or computationally intensive scientific and engineering problems.

Data Acquisition & Analysis: Areas in which support shall be required include: Acquiring and analyzing data and other useful information in support of ARC missions, programs, and projects. This area includes data acquisition, data exchange and/or translation, data reduction, data distribution, and data archival; developing and using data analysis and visualization tools and techniques; and other types of computational analysis.

Modeling & Tool Development: Areas in which support shall be required include: Creating accurate representations in time and/or dimensional space of scientific phenomena, aerospace systems, and other physical systems and developing software tools to assist human operators in the performance of complex tasks. This area includes algorithm development; surface and multi-dimensional modeling; the integration of computational software and/or systems with physical systems; real time simulations; user interface design, development, implementation, and integration; and tool design, development, implementation, and integration.

C.1.5 Outreach / Informational Systems & Support

This information technology area is dominated by rich content that needs to be distributed efficiently and effectively to customers, whether they are internal to ARC, to NASA, or for the general public.

Web Applications: The Contractor shall provide for the design, development, installation, maintenance, operations, upgrades, configuration management, archiving, customer support, and security for ARC websites and web applications.

Information-Based Systems: The Contractor shall provide for the design, development, installation, maintenance, operations, upgrades, configuration management, archiving, customer support, and security for content-rich, IT based data systems. Examples include scientific databases and collections, geographical information systems, and digital image archive and retrieval systems.

Library Systems: The Contractor shall provide for the design, development, installation, maintenance, operations, upgrades, configuration management, archiving, customer support, and security of library computer systems and related applications including tracking systems for technical reports and data.

Conference / Presentation / Advocacy Support: The Contractor shall provide products and services associated with supporting internal and external conferences, presentations, or other public events that support, describe, and / or advocate ARC Missions, Programs, and Projects such as scientific proceedings or formal programmatic meetings. In support of this activity, the Contractor shall develop and/or acquire presentation materials as well as coordinate, logistically prepare for, and conduct such events.

Technical Documentation: The Contractor shall provide administrative functions to ensure that reports and documentation are prepared in accordance with the requirements defined in each task order.

C.2 Management and Administration

The Contractor shall utilize best practices throughout its management and administrative activities in order to provide the best value while meeting the defined requirements. The goal is to provide expertise such that best practices will be developed and implemented in a useful timeframe. Specifically, the Contractor shall be cognizant of and employ best practices when practical in all relevant management areas including personnel management, contract management, project management, software management, facility management, safety, and security.

C.2.1 Management Structure

A management structure is required that can effectively manage a professional and technical work force engaged in a wide range of IT related services and development activities. The Contractor shall have organizational structure, procedures, and administrative support functions to effectively and efficiently manage the work performed under this contract. The management and administrative structure shall provide a single point of contact for interface to the Contracting Officer's Technical Representative (COTR) and shall provide procedures and management supervision to ensure compliance with applicable Government regulations for all material and work performed under this SOW.

C.2.2 Task Management

Each task shall have a Task Manager (TM) who shall be the single point of contact with the Task Requester (TR). The Contractor shall ensure that all task plans clearly identify all products and services that the Contractor is responsible for delivering or providing. When appropriate, subtasks may be subdivided into work assignments. Subtasks will be labeled as follows:

task_order_number.work_assignment_number.version_number

C.2.3 Software Management

Software management includes the design, development, implementation, modification, maintenance, and operations of software algorithms, applications, and tools. Customers

include individual users, local work groups, ARC-wide functions, and extended work groups that have members at other NASA Centers, in other parts of the U.S. Government, in Academia, and in Industry. Software management issues include standards, reuse, training, upgrades, compatibility, licensing, intellectual property rights, and security.

The Contractor shall be cognizant of and employ best software practices. Before developing software, the Contractor shall first determine if there is a more cost effective solution such as acquiring reusable software from ARC sources, other NASA or U.S. Government sources, or purchasing off-the-shelf commercial software.

The Contractor shall maintain software libraries. The Contractor shall make use of these libraries by utilizing reusable software before any software development occurs and by contributing new software to the libraries.

C.2.4 Other Direct Charges

It is anticipated that substantial quantities of hardware, software and/or subcontracted activities shall be purchased by the Contractor and billed under this award as ODCs. Other ODCs may include training, travel, and other miscellaneous expenses. ODCs will be labeled as follows:

task_order_number.ODC_unique_number

C.3 Quality Assurance

In support of CTOs issued, the Contractor shall comply with, and be an integral part of the Ames Management System. This includes following applicable Ames' procedures that are subject to audit. The Contractor shall attend relevant training, provided by the Government, as required for all on-site employees. Specific procedures will be indicated on each task order response. These procedures include, but are not limited to, the following AMS documents:

NPD 1280.1 NASA Management Systems

APR 1280.1 Ames Management System (AMS)

NPD 8730.5 NASA Quality Assurance Program Policy

The Ames' Quality System documents can be found at: <http://ams.arc.nasa.gov>

C.4 Deliverables

Products and services requirements shall be defined in each task order.

C.5 Phase-In/Phase-Out

Phase-In: The phase-in process shall be accomplished as expeditiously as possible, with a maximum phase-in period of 30 days. The phase-in process shall not adversely impact the work being done by the outgoing contractor. It shall be conducted in a manner consistent with safe operation requirements. The incoming contractor is responsible for providing a qualified contractor staff by the end of the phase-in period.

Phase-Out: Upon completion of this contract, the outgoing contractor is responsible for the orderly transfer of duties and records to the incoming contractor. This should be accomplished in an expeditious manner, consistent with any contract phase-in schedule, while minimally impacting ongoing task orders. The contractor shall submit a phase-out plan no later than 60 days before the end of the contract for Government review and approval.