

QUESTIONS AND ANSWERS NUMBER 3

Question 1:

Who does NASA Ames NAS consider the stakeholders to be for the Statement of Work (SOW)?

Government Response 1:

The primary stakeholder for the SOW is the NAS Division. If HPC facilities at other NASA Centers utilize this contract, then the NASA organizations operating those HPC facilities would also be stakeholders. The stakeholders of the NAS Division and any other organizations operating NASA HPC facilities are the NASA Mission Directorates, and in particular their specific programs that are the major users of NAS' HPC resources and services. Other stakeholders of the HPC facilities are NASA Center management, the HPC Program Office at NASA Headquarters, and the Agency Chief Information Officer.

Question 2:

On page 4, the SOW mentions retaining and attracting highly qualified staff with significant accomplishments, can you elaborate on what is intended by 'significant accomplishments'? Does that also include the attracting of the outside scientific community for using the resources provided by the NS3 contract?

Government Response 2:

The term "significant accomplishments" will be removed from the final SOW. There are no requirements for the contractor to attract users for NASA HPC systems.

Question 3:

Can you provide specific Service Level Agreements (SLAs) and metrics for responding to changes in scope that are currently used now, or will these be developed in conjunction with the contract by the contractor and NASA?

Government Response 3:

For adding or modifying contract tasks, NASA will provide an expected time, such as 15 days, for the contractor to respond with a task plan once a valid Statement of Requirements is received.

Question 4:

What are the target budget deltas for schedule, cost, and performance?

Government Response 4:

The Government is unable to provide a response since the meaning of the question is not clear.

Question 5:

What is the current procedure for data exchange between ARC and contractors? Are there any interfacing contracts and if so, who holds them? Are the interactions among contracts formal processes or via web exchange and do the same procedures apply to the dissemination of scientific data?

Government Response 5:

Technical information exchange is through whatever is the most efficient and effective means in a given situation (e.g., file exchange, one-on-one discussions, group meetings, email, Division All-Hands meetings). If the contract requires specific reports, information, etc., then the reports, information, etc., are provided by the contractor as outlined in the contract terms and conditions. The NS3 contract will be the primary contract supporting the NAS Division. There are other ancillary contracts supporting NAS. The relationship and interaction processes between these contracts and NS3 will be specified in relevant task requests (statement of requirements) on a task-by-task basis. Different processes apply to the dissemination of scientific and technical data produced under NS3, which must go through the relevant NASA release processes.

Question 6:

For the web content maintenance, who provides and approves the content and scientific data released for dissemination?

Government Response 6:

Web content may come from many sources internal and external to the NAS Division. The Government approves all content put on the public web server.

Question 7:

Is there an available list of performance tracking tools utilized at ARC for electronic management to assist with processing task assignments, tracking performance, and documenting work products for contract baseline and ongoing contract performance?

Government Response 7:

No, there is no list of such tools. Currently, the NAS Division uses an electronic tool developed, owned and provided by the incumbent contractor that processes tasks and tracks performance and deliverables.

Question 8:

Is there an applicable ISO 14000 certification for safety and health maintenance? Are there any other ISO, CMMI, ASQ, etc., certifications for areas applicable to contract performance?

Government Response 8:

No, there is currently no ISO 14000 certification for safety and health maintenance requirement for NS3. At this time, ISO, CMMI, ASQ, or similar “formal quality standard” requirements are not expected (but not ruled out) in the performance of the NS3 contract. However, over the life of this contract, the contractor shall comply with any changes to regulations and policies that require certifications in specific areas of the contract.

Question 9:

Can we get an estimate of known conferences, meetings, ODC, travel costs under current contracts?

Government Response 9:

Yes, the Final NS3 RFP will provide an estimate for other direct costs (ODCs) and travel costs.

Question 10:

What Data Item Descriptions (DIDs) are being used for software development? What does Ames consider a complete software development documentation set?

Government Response 10:

NS3 will follow NPR 7150.2 (http://nodis3.gsfc.nasa.gov/lib_docs.cfm?range=2) and APR 7150 (under development) for development of software. NAS currently does not use DIDs for software development. Any software development documentation requirements will be specified in the Statement of Requirements for the associated NS3 task.

Question 11:

You state that “the contractor is to develop a risk management plan for each task which details how the contractor will integrate safety, reliability, maintainability and quality issues and correlate those issues with cost, schedule and probability of mission success such that the contractor routinely considers risk in the planning and day-to-day decision making processes. Include a risk assessment with the complete relationship of the assurance issues (safety, reliability, maintainability and quality) to program goals (cost, schedule and mission success) with each topic and issue brought to program management for resolution. The risk assessment shall include the contractor’s recommended means to mitigate the risk.” Are these being prioritized in any way or is such prioritization the responsibility of the contractor?

Government Response 11:

The final SOW will not include the requirement of a risk management plan for each NS3 task. Instead, the final SOW will require each NS3 contractor task plan to identify major risks of not meeting task requirements and their mitigation strategies.

Question 12:

What evaluation processes are currently utilized to determine which of the identified best practices get implemented onto Columbia or the next generation HPC?

Government Response 12:

Best practices may involve all areas of the NS3 SOW, not just HPC operation. There is no single evaluation process for best practices. Each best practice proposal is handled on a case-by-case basis depending on its potential impact to the organization.

Question 13:

What is the long-term vision and action plan to optimize costs, develop innovative best practices, enhance the contractor-Government team, etc.

Government Response 13:

The NS3 Contractor will support the Government in developing plans to optimize costs and incorporate innovative best practices.

Question 14:

For the procurement of the next HPC and services, can the 12 - 18 months be broken down by step based on most relevant procurements first?

Government Response 14:

The 12-18 month acquisition cycle applies to the procurement of HPC systems and supporting hardware, not to services. Regarding HPC system procurements, all components of the system are equally essential (relevant), must work well together, and are therefore typically procured together. However, innovative approaches to acquiring HPC systems are of interest, as long as they reflect NASA's interests (such as the HPC workload) and constraints (e.g., federal laws and regulations).

Question 15:

Are there NASA Ames specific security specifications, or are you guided by overall NASA specs for web security, HPC access, network access, and data/software dissemination?

Government Response 15:

NAS is subject to IT security policies at multiple levels: NAS-specific, Ames, NASA, and federal. IT security policies derive from the FISMA (Federal Information Security Management Act).

Question 16:

What tools are used for monitoring network performance and HPC uptime?

Government Response 16:

NAS currently uses Nagios, iperf, nuttcp, and NAS-developed tools to monitor network status and performance. NAS uses standard Unix functions to check HPC system uptime. A NAS-developed tool is used to monitor many aspects of HPC status and performance. A portion of the status is available at <http://www.nas.nasa.gov/cgi-bin/nas/status>.

Question 17:

For Help Desk support services, what tracking tool is currently used? And, is NASA Ames looking for consolidation of any Help Desk services?

Government Response 17:

NAS currently uses OTRS (On-Line Tracking and Reporting System) to track trouble tickets. NAS is currently exploring consolidating this help desk with those of other NASA HEC facilities. We do not know NASA Ames' plans for consolidation of help desk services.

Question 18:

Can you provide a full breakdown of what is provided to all users vs. services provided to just NASA ARC NAS? Is the Help Desk tasked to fully support remote users 24x7? Does the required response time differ between prime and off-peak hours?

Government Response 18:

For all HPC users, NAS provides end-to-end support for HPC-related problems. For NAS staff, NAS also provides laptop/desktop system administration and support, IT security services, and office equipment and infrastructure support. The NAS helpdesk is staffed 24x7. The required response time is the same during off-peak hours, but depending on severity, problem resolution may wait until normal business hours.

Question 19:

Can you provide Help Desk statistics on the number of tickets received per week?

Government Response 19:

NAS opens an average of about 150 Help Desk tickets per week. About 2/3 of these are high-end computing related, with the remainder being for local support.

Question 20:

You state "To minimize user "down-time", meet the following responsiveness goals:

- Respond to users' problems within four hours;
- Resolve 95% of problems to the user's satisfaction within 48 hours; and
- Monitor and report to facility management on the problem resolution.

- Conduct cost-benefit trade-off studies to determine the level of helpdesk expertise needed at various times during the 24x7 week, in order to cost-effectively meet the user responsiveness goals. Implement this staffing plan as approved by the Government.”

Is this problems vs. service calls, and if not, how are service calls currently handled? Has this been done before and if so, is the historical data available for seasonal/holiday changes?

Government Response 20:

Regarding helpdesk, the terms “problem,” “trouble ticket,” and “service call” are used interchangeably at NAS, and are handled the same. Trouble tickets may be opened as a result of a service call, email to the helpdesk, or direct communication of a problem to NAS staff. Trouble tickets are handled at the lowest service level possible, and are escalated to more expert NAS staff as necessary. The requirement for optimizing staffing (“Conduct cost-benefit trade-off studies”) will be reflected only in the Program Management section of the SOW.

The meaning of the last question - “Has this been done before and if so, is the historical data available for seasonal/holiday changes?” - is not clear; therefore, the Government cannot provide a response.

Question 21:

What is the yearly goal for number of people trained for HPC utilization? Does the requests training also include training on the software that is running on the cluster?

Government Response 21:

There is currently no specific annual goal for user training. Currently, training is offered online on the use of HPC systems. NAS also provides training in response to specific user requirements.

Question 22:

Can you expand on what is expected for the monthly report summarizing HPC usage?

Government Response 22:

Currently, the HPC usage report includes CPU-hours allocated and used by each project, CPU-hours lost to system engineering and down-time, and a summary of utilization across the system. The format and content for this report is subject to change.

Question 23:

You state that “In April 2006, the development of a HPC enterprise architecture for NASA is a new initiative, having begun in earnest in November 2005. Thus, planning and implementation are currently at a formative stage. Potential activities include:

- Plan, conduct, and document market surveys to assess the state of the art in relevant distributed information system technologies and solutions.

- Develop, implement, and test an effective, efficient, and reliable approach for HPC facility data backup and recovery.
- Develop, implement, test, and (if necessary) employ an effective incident response and disaster recovery plan that minimizes the impact of HPC system or facility down-time.
- Develop and implement an HPC accessibility improvement plan for all NASA Centers.
- Develop and implement (where approved) Agency-wide approaches to improve the efficiency, effectiveness, and ease-of-use of NASA's HPC resources, potentially involving sharing of knowledge, websites and information access, facility operations databases and processes, help desk functions, user accounts and single sign-on, job submission, and remote file access.
- Develop and implement mechanisms for real-time, system-wide monitoring and sharing HPC workloads and resources.
- Improved coordination with, and reporting to, key EA stakeholders such as the Center and Agency Chief Information Officers (CIOs)."

Which of these currently exist vs. a need to build from the ground up?

Government Response 23:

None of these activities need to be built from the ground up. All of these activities are in planning or initial stages of implementation.

Question 24:

Is the contractor responsible for reporting to any external NASA organizations, such as NASA Headquarters or NASA Goddard?

Government Response 24:

No. Reporting to external NASA organizations is the responsibility of NAS civil servant managers.

Question 25:

On Page 18, you state that the contractor must provide 8x5 POC for resolution of applications; this seems inconsistent with the 24x7 service statement? Can you clarify?

Government Response 25:

Problems are captured 24x7 by the help desk, but in most cases, application issues requiring escalation to 2nd level support are resolved during normal 8x5 business hours.

Question 26:

Will the Contractor be required to price any of the functional SOW areas in relation to the Goddard Center for Computational Sciences or will they be added tasking as a contract modification?

Government Response 26:

No, the Contractor will not be required to price any of the functional SOW areas in relation to the NASA Center for Computational Sciences (NCCS) at Goddard. Any NS3 services at another NASA Center would be added as a new task.

Question 27:

Draft Statement of Work (SOW) Section 7.2 Major HPC Procurements, page 22 Paragraph 7.2 of the draft Statement of Work (SOW) states "For this technical area, NASA would negotiate with the NS3 contractor to have the contractor procure a major HPC system or provide additional hardware, software, and service required to support the facility." We interpret this to mean that individual and specialized procurements may be required, the nature of which will not be known at the time the RFP is issued. As such the government intends to negotiate with NS3 Prime Contractor at some point during the contract execution to provide procurement of specific hardware items. Will contract revenue realized as a result of significant hardware procurements on behalf of NASA be subject to the 25% small business subcontracting goals established by the government via Highlights #3?

Government Response 27:

Yes.

Question 28:

Draft SOW Section 8, Phase-In/Phase-Out, page 23, What potential impact does the government foresee related to new Department of Homeland Security and NASA security requirements including personnel badges and background checks, and how do they intend to address it in the Draft Request for Proposal (RFP)?

Government Response 28:

Current NASA contractors who transfer to the NS3 contract will retain their badge, background check, and ability to access IT systems. New NASA contractor employees will be impacted, since they must wait for their background check to receive a NASA badge (allowing them on Ames unescorted) and to access IT systems required to accomplish their duties.

Question 29:

Can you tell us the staffing/skill mix by SOW element?

Government Response 29:

Yes, the NS3 Final RFP will provide a sample staffing/skill mix plan for the NS3 requirement.

Question 30:

What is the workload data associated with each SOW element; for example, while workload data is provided in the Networking and Communications and Facility Operations areas, it is not provided in the User Services area?

Government Response 30:

For all areas, the sample staffing plan provided in the Final NS3 RFP will indicate the workload in each technical area of the SOW. The sample staffing plan is FOR INFORMATION ONLY and is not intended to represent a binding requirement since the exact skill mix and work distribution are dependent on task orders issued after the contract is awarded.

Question 31:

Does NASA Ames plans to set up a procurement library (via a web link) for providing access to the detailed design and configuration information on the current architecture and configurations of the NAS HPCs?

Government Response 31:

No. Due to security constraints, NASA does not plan to set up a procurement library (via a web link) for providing access to the detailed design and configuration information on the current architecture and configurations of the NAS HPC systems. However, the current NAS website, <http://www.nas.nasa.gov>, provides sufficient information about the current NAS HPC systems to respond effectively to the RFP.

Question 32:

Is the incumbent currently performing all of the 11 functions described in the NS3 Draft SOW? If no, could you please list the NS3 functions the incumbent is performing now?

Government Response 32:

With the exception of Technical Area 11, the incumbent and its subcontractors are performing in all 11 technical areas of the NS3 Baseline Requirements.

Question 33:

What is the current staffing level on the current NS3 contract? What labor categories are required/used on the current NS3 contract?

Government Response 33:

Staffing levels and labor categories on task order NNA05AC20T vary based on government requirements. The NS3 Final RFP will provide a sample staffing/skill mix for the NS3 requirement.

Question 34:

Is there any financial data available on the current contract; e.g., actuals for the last couple of years?

Government Response 34:

Information on the current task order NNA05AC20T can be requested through the ARC FOIA office at (650) 604-1181. Contractor proprietary information will not be released.

Question 35:

Are the posted small business goals the final small business goals?

Government Response 35:

No changes are expected in the posted small business goals, although they cannot be considered final except in the Final NS3 RFP.

Question 36:

What commercial and special hardware and software tools are being used now to monitor, analyze, evaluate and project the workload and performance of the current NS3 configurations?

Government Response 36:

Interpreting the phrase "current NS3 configurations" as "current HPC and networking systems"; see Response 16.

Question 37:

SOW 6.2, Technical Integration - What are the critical issues the IPTs are currently working on?

Government Response 37:

IPTs change dynamically, and may include expertise from any of the Baseline technical areas in the draft SOW. Typical IPT issues include system inefficiencies, application performance and productivity, large-scale data analysis, and visualization.

Question 38:

SOW 6.2 - What best practices being used now on the current contract standardized across all NS3 systems/facilities for achieving maximum benefits?

Government Response 38:

We interpret the question to mean: "In which areas of HPC is NAS considered a world leader?" NAS, working with its industry partners, leads the world in these areas:

- Setting the benchmark in procuring and installing leadership HPC systems

- Integration and operation of large single-system-image computing
- Extending the capability of the CXFS global file system
- Global queueing to enhance system flexibility, usability, and utilization
- Advanced HPC usage monitoring and analysis
- Secure unattended file transfer capability
- Hyperwall-based visualization
- Concurrent visualization (during the computation)

Question 39:

SOW 6.3, Supercomputing and Storage Systems - Regarding the 4-phase system life cycle defined for the NAS's HPCs, at least how many life-cycle strings are active in parallel at any one times? Is there a mission schedule available for the next couple of years to project the need for planning and tracking multiple system enhancement life cycles for a given set of HPCs?

Government Response 39:

At least two HPC lifecycles are active at any time, as is the case now, with the Columbia system in production and the next system being researched for acquisition. It is possible that many lifecycles can be active at once, for example if HPC systems are purchased every year rather than acquired via a 3-year lease, as Columbia was. NAS does not have a firm, multi-generation HPC lifecycle schedule. Instead, NAS seeks to leverage industry advancements and partnerships to cost-effectively enhance NAS' ability to support NASA's growing leadership and capacity HPC requirements at a rate at least equal to Moore's Law (~4X increase every 3 years).

Question 40:

Follow-up to previous question - Is replacement of Columbia the only mission that is driving future upgrades of the NAS HPCs? What specific list of missions (real needs) are driving the upgrade/replacement of the Columbia System? How does the future Columbia system get its new workload/processing load requirements?

Government Response 40:

Replacement of Columbia is not a driver for upgrade of NAS HPC systems. NAS supports all agency missions, and their programs that require HPC. NAS develops HPC requirements in a number of ways, including analyzing and extrapolating usage and job queue trends, analyzing the most demanding emerging applications (especially high-resolution science applications and rapid response, high-fidelity, ensemble CFD computations for Shuttle stewardship and exploration vehicle development), surveys of users, and feedback from major customers (programs and missions).

Question 41:

SOW 6.5, User Services - What statistics are available on users services for the past couple of years? Average number of weekly/monthly problems called in and resolved, service response times, etc.

Government Response 41:

See Government Response 19 above. Current service response times are essentially the same as those in the draft SOW.

Question 42:

Would NASA Ames consider reclassifying the NAICS code (presently 541519) to a different NAICS code?

Government Response 42:

No, based on the requirements of NS3, the NAICS Code of 541519 - Other Computer Related Services is appropriate.