



Attachment C

Definition: Climate Modeling and Research System Proposal Preparation Instructions

Solicitation Number 6400009257

Table of Contents

- 1. Proposal Preparation Instructions 3**
 - 1.1. *Conventions used in the CMRS Technical Specification*..... 3
 - 1.2. *General Requirements*..... 3
 - 1.3. *Format for the Technical Proposal* 4
 - 1.4. *Format for the Past Performance Volume* 4
 - 1.5. *Format for the Business Management Proposal*..... 4
- 2. Technical Proposal Preparation Instructions 5**
 - 2.1. *Qualification Criteria* 5
 - 2.2. *Technical Elements of the Offeror’s Proposal* 5
 - 2.2.1. High Level Overview 5
 - 2.2.2. Performance 5
 - 2.2.3. Strategy..... 6
 - 2.2.4. Software 7
 - 2.2.5. Resiliency, Reliability, Availability, Serviceability..... 8
 - 2.2.6. Warranty, Maintenance, and Support..... 9
 - 2.2.7. Facilities Requirements 10
 - 2.3. *Benchmark Performance of the Offeror’s Solution* 10
 - 2.4. *Delivery Schedule of the CMRS Elements* 11
 - 2.4.1. Upgrade Schedule for both Single and Multiple phase Deliveries..... 11
 - 2.4.2. Decommissioning Schedule for Single Phase Deliveries 11
 - 2.4.3. Decommissioning Schedule for Multiple Phase Deliveries 11
- 3. Past Performance Volume Preparation Instructions 12**
 - 3.1. *Past Performance*..... 12
 - 3.2. *Corporate Capability* 12
- 4. Life Cycle and Option Cost Assessment 12**
- 5. Business Management Proposal Preparation Instructions 12**
 - 5.1. *Signature*..... 12
 - 5.2. *Price Information* 12
 - 5.3. *Milestone Schedule* 13
 - 5.4. *Options*..... 13
 - 5.4.1. Memory Upgrade 13
 - 5.4.2. Extended Maintenance..... 14
 - 5.5. *Additional Information*..... 15



5.5.1. Royalty Information.....	15
5.5.2. Other Information.	15



Attachment C

Description: Proposal Preparation Instructions

Solicitation Number 6400009257

1. Proposal Preparation Instructions

1.1. Conventions used in the CMRS Technical Specification

Attributes of the CMRS Technical Specification are ranked according to their relative contribution to functionality, productivity, and usability. These conventions describe specific responsibilities of the Offeror as part of their response. The Offeror should take care to ensure that all items marked Critical are properly addressed. Offeror proposals should also address Significant and Enhancing items carefully to ensure that those contributions to the overall proposal are well understood.

The following conventions are used in the Technical Specification and repeated in this document.

Attribute Priority	Description
Critical [C]	Items considered the most important, or critical to the CMRS. Offeror shall describe any exceptions to items considered critical, and describe proposed methods for mitigating the impact of an offer that does not provide this item. Technical Specification Sections that include these items are marked with [C].
Significant [S]	Items that are of sufficient significance that the effectiveness of the CMRS would suffer if not provided. Offeror is encouraged to provide as many such items as possible. Technical Specification Sections that include these items are marked with [S].
Enhancing [E]	Items that enhance the utility of, and are desirable for, the CMRS. Offeror is encouraged to provide as many such items as possible. Technical Specification Sections that include these items are marked with [E].
Information [I]	Items that are provided as additional information to an Offeror regarding information about the NCCS or NOAA that may aid an Offeror in determining the most suitable system configuration. Technical Specification Sections that include these items are marked with [I].

Figure 1. Conventions used in the CMRS Technical Specification

1.2. General Requirements.

The Offeror’s proposal shall be in three parts, a Technical Proposal, a Past Performance Volume, and a Business Management Proposal. Proposals shall be submitted both in hard copy and electronically. Five complete sets of signed hardcopy documents shall be mailed to the ORNL Subcontract Administrator using the address found in Section A5 of the Solicitation and Offer form. Electronic submission is via email to the ORNL Subcontract Administrator using the email address hpcnoaaadm@ornl.gov.

The following guidelines shall govern submission of the hard copy version:

1. The Business Management Proposal, Technical Proposal, and Past Performance Volume must be in separate physical volumes.



2. The Business Management Proposal, Technical Proposal, and Past Performance Volumes shall be clearly marked on both the cover and spine.

The following guidelines shall govern submission of the electronic version:

1. The Business Management Proposal, Technical Proposal, and Past Performance Volume must be in separate files.
2. Only commonly used formats (such as Adobe PDF or Microsoft Office files) will be accepted. Executable files are blocked at the ORNL Email Gateway and are not accepted. In addition, there is a 10MB maximum file size restriction on individual emails. An Offeror may send the Response as a series of emails, or contact the ORNL Subcontract Administrator for instructions on using an ftp-based service for delivery of larger files.
3. File names shall clearly indicate which file(s) represent the Business Management Proposal, the Technical Proposal, and the Past Performance Volume.

1.3. Format for the Technical Proposal

The Technical Proposal shall not exceed 50 pages. The page size shall be standard 8.5x11. Foldouts for large or complex diagrams are permitted. Color is permitted. Font size should not be smaller than 11 pt, except where the readability of text in a Figure benefits from a smaller size.

The Offeror must provide technical information in sufficient detail to allow ORNL to fully evaluate the proposal against all evaluation factors. ORNL may assume that the Offeror fails to comply with the Technical Specifications if this section is incomplete.

The Offeror must provide the information associated with the execution of the benchmarks, as described in Attachment D of this Solicitation, as an Addendum to the Technical Proposal. This Addendum shall be clearly labeled as Benchmark Performance. The information in the Benchmark Performance Addendum does not count against the page limits for the Technical Proposal, nor does the Benchmark Performance Addendum have a page limit. However, information in the Benchmark Performance Addendum will be used only to assist in the evaluation of Criterion 2: Benchmark Performance of the Offeror's Solution, as described in Attachment B of the Solicitation. The page size shall be standard 8.5x11. Foldouts for large or complex diagrams are permitted. Color is permitted. Font size should not be smaller than 11 pt.

1.4. Format for the Past Performance Volume

The Past Performance Volume shall not exceed 15 pages. The page size shall be standard 8.5x11. Foldouts for large or complex diagrams are permitted. Color is permitted. Font size should not be smaller than 11 pt, except where the readability of text in a Figure benefits from a smaller size.

1.5. Format for the Business Management Proposal

The Business Management Proposal does not have a page limit. However, information in the Business Management Proposal will not be used to assist in any element of the technical elements evaluation. The page size shall be standard 8.5x11. Foldouts for large or complex diagrams are permitted. Color is permitted. Font size should not be smaller than 11 pt.



2. Technical Proposal Preparation Instructions

2.1. Qualification Criteria

The Offeror shall describe any exceptions taken to elements considered critical, and describe proposed methods for mitigating the impact of an offer that does not meet one or more critical elements. Responses in this section do not count against the Technical Proposal page count limitation.

2.2. Technical Elements of the Offeror's Proposal

2.2.1. High Level Overview

High level overviews of the CMRS are required. Those are defined as follows.

2.2.1.1. Subsystem Overview

The Offeror shall provide a high level overview of each subsystem, and each upgrade if applicable, of the proposed CMRS. This overview shall include an architectural diagram, labeling all component elements and providing bandwidth and latency characteristics of and between elements. The overview shall also include descriptions of the test and development system, system software, tools, and management solutions.

2.2.1.2. Node Type Architecture Descriptions

The Offeror shall provide an architectural block diagram for each CMRS node type, labeling all component elements and providing bandwidth and latency characteristics of and between elements. The node architectural diagrams will show and label all chips used and denote independent buses, on board interconnects, and expansion slots, all labeled with widths, frequencies and bit rates.

2.2.1.3. Low Level Technical Specifications

The Offeror shall provide technical specifications of the CPU, system board, and chipsets to be used in each node.

2.2.1.4. Interconnect Description

The Offeror shall provide an architectural block diagram of the proposed interconnect for the CMRS and shall specify in detail the topology provided and how the high speed interconnect requirements are met by the proposed topology.

2.2.1.5. Local Area Network Connectivity

The Offeror shall describe, in detail, and diagram all network interfaces, connections, and switch configurations for the proposed system(s), including connections to the production local area networks and any administrative or maintenance networks.

The Offeror shall delineate connections to ORNL-provided resources (switches, routers, or other network equipment) separately from connections to Offeror-provided resources (switches, routers, or other network equipment).

2.2.2. Performance

2.2.2.1. Peak Performance



The Offeror shall describe the peak double-precision (64-bit) floating-point performance of each compute partition in the system.

2.2.2.2. Runtime Variability

Given a situation where the CMRS resources are heavily utilized (90% or more of cores are scheduled), the Offeror shall describe the attributes of their solution that will minimize run time variability, commit to a maximum run time variability for the class of applications described in the benchmarks, and describe the rationale for that calculation.

2.2.2.3. Bisection Bandwidth

The Offeror shall describe the sustained bisection bandwidth and how that supports system performance requirements.

2.2.2.4. Link Bandwidth

The Offeror shall describe the sustained link bandwidth in each direction and bidirectional and how that supports system performance requirements.

2.2.2.5. MPI Performance Requirements

The Offeror shall specify the MPI ping-pong, zero byte latency between nearest neighbors (not in the same node). The Offeror shall specify the MPI ping-pong, zero byte latency between any pair of nodes.

The Offeror shall specify the MPI unidirectional bandwidth and bidirectional bandwidth as measured between two nodes.

The Offeror shall specify the maximum time measured or projected from all nodes for a full-scale floating-point (32-bit & 64-bit) MPI_ALLREDUCE (maximum and sum operations).

The Offeror shall specify the maximum time measured or projected from all nodes for a full-scale MPI_BARRIER (maximum and sum operations).

2.2.2.6. Data Transfer Performance Targets Between FS and LTFS

The Offeror shall provide performance targets for data transfers from the FS to the LTFS using a parallel copy mechanism of their choosing using a data set with files whose size conforms to the distribution shown in Section 5.2 of the Technical Specification.

2.2.2.7. FS and LTFS Peak Bandwidth

The Offeror shall specify the offered FS peak bandwidth and how it differs from that delivered to the FSB.

The Offeror shall specify the LTFS peak bandwidth and how it differs from that delivered to the LTFSB.

2.2.3.Strategy

The Offeror shall describe how the proposed strategy best balances the capability, capacity, and RAS requirements of this solicitation.

The Offeror shall describe their rationale for proposing physically distinct subsystems, or partitioned subsystems.



The Offeror shall describe the features of their solution that will accommodate future application scalability and support the growth in model complexity and computational costs of climate modeling applications across the full lifetime of the proposed systems.

For a single-phased delivery, the Offeror shall describe the anticipated impact to both users and operations for this strategy.

For a multi-phase delivery, the Offeror shall describe the anticipated impact to both users and operations due to any architectural differences between the two subsystems and how that relates to the appropriateness of the proposed transition period. The level of effort required to transition applications to the Phase 2 system will be evaluated. Systems that are architecturally compatible across the delivery Phases (same ISA and compilers) are strongly preferred.

The Offeror shall describe the expected impact on application validation that may be associated with a multi-phase delivery.

The Offeror shall describe the expected impact on application validation that may be associated with any proposed upgrades.

2.2.4. Software

2.2.4.1. Operating System

The Offeror shall describe the software suite for the TDS and CMRS including

- The UNIX or Linux native 64-bit operating system, system interfaces, shell and utilities that comply with POSIX standards. The Offeror shall describe what system software is provided and describe compliance and non-compliance with POSIX standards.
- Resource and workload management software
- Accounting software
- System monitoring software
- File system(s)

2.2.4.2. User and Programming Environment

The Offeror shall provide a detailed description, including compliance with relevant standards, of the user and program development environments to be provided with the CMRS. The Offeror should note particular attributes that may aid the NOAA users community in optimizing their use of the proposed CMRS. The description shall include

- ANSI Standard Fortran 90/95, C and C++ compilers with OpenMP support
 - Compiler licensing
 - Macro-preprocessors
 - MPI 1.2, MPI-2 I/O and MPI-2 one-sided communication libraries. Support for MPI-2
 - Optimized serial and parallel numerical and scientific libraries
- Tools for placement and pinning of threads and processes to specific cpu cores.
- Libraries
- Serial and Parallel source-level debugger(s)
- Performance analysis tools including
 - Profiling
 - Tracing
 - Access to processor hardware counters
 - I/O
- Other programming environment software



2.2.4.3. Software Tools

The Offeror shall describe the provided license structure for the following tools, accounting for the license minimums provided in the Technical Specification.

- Allinea DDT
- IDL, version 7.1 or later
- Matlab, release R2009B or later
- NAG, including at a minimum the Numerical Components C, Fortran, Fortran 90, Toolbox for
- TotalView

2.2.4.4. Checkpoint/Restart

The Offeror shall describe system support for and user compliance requirements for checkpointing of jobs

2.2.5. Resiliency, Reliability, Availability, Serviceability

2.2.5.1. RAS System Initialization and Reboot

The Offeror shall detail their specific initialization process to illustrate the sequence of events and anticipated time for a full system initialization. The Offeror shall detail the LTFS and FS initialization and verification processes, and how they impact the CMRS initialization.

2.2.5.2. System Mean Time Between Interrupt

The Offeror shall calculate the System Mean Time Between Interrupt (SMTBI) for each subsystem.

The Offeror shall describe the process for estimating the SMTBI of each proposed subsystem.

2.2.5.3. System Mean Time Between Failure

The Offeror shall calculate the hardware System Mean Time Between Failure (SMTBF) for each subsystem.

The Offeror shall describe the process used for estimating the SMTBF of each proposed subsystem

2.2.5.4. Mean Time To Data Loss

The Offeror shall calculate the Mean Time To Data Loss (MTTDL) for a RAID set of the FS. The specification for calculating MTTDL is

$$MTTDL = \frac{MTBF^3}{(N * (N - 1) * (N - 2) * MTTR^2)}$$

where MTBF is Mean Time Between Failure, MTTR is the Mean Time to Recovery, and N is the number of disk drives in the RAID set.

The Offeror shall calculate the MTTDL for a RAID set of the LTFS.

2.2.5.5. Resiliency

The Offeror shall describe features of their hardware monitoring system(s). The Offeror shall describe their methods for executing predictive failure analysis. The Offeror shall describe their anticipated preventative maintenance (PM) schedule, and how predictive failure analysis (PFA) is integrated into or affects that schedule. The PM schedule shall consider the impact to users, including the executing of PM during normal business hours.



The Offeror shall describe features of the proposed system that, as available, support an ability to migrate existing jobs.

The Offeror shall describe features of the LTFS and FS that improve its resiliency and support rapid recovery from hardware failures. The Offeror shall describe features of the proposed system that support an ability to migrate data from failing hardware components within the LTFS or FS, or to migrate data from one storage device to another to support planned maintenance operations.

The Offeror shall provide estimates of the time required to recover from various file system faults due to hardware and/or software faults. These calculations shall include, at a minimum, analysis of the time to recover from the loss of individual disks, disk arrays, storage servers and the fabric components.

The Offeror shall provide estimates of the time required to verify the filesystem integrity for the LTFS and FS, situations that dictate a need to verify filesystem integrity for the LTFS or FS, and features of the proposed system configuration that reduce need for explicit integrity checks.

The Offeror shall describe the resiliency features of the proposed LTFS and FS that ensure the accuracy of read/write operations, guard against single point of failure, and protect file system integrity.

The Offeror shall identify any single point of failure in the CMRS. Offeror shall describe the degree to which interactive nodes are decoupled from compute nodes.

2.2.5.6. Reliability

The Offeror shall describe the features of the proposed solution that enhance reliability.

2.2.5.7. Availability

The Offeror shall describe features of the proposed solution that enhance availability. The Offeror shall describe a preferred schedule of downtime for scheduled maintenance, security management, and preventative maintenance.

The Offeror shall state the proposed effectiveness level of the CMRS and LTFS.

The Offeror shall describe the process used for calculating the effectiveness level of each proposed subsystem.

2.2.5.8. Serviceability

The Offeror shall describe the features of the proposed solution that enhance serviceability.

The Offeror shall describe the field replaceable components in the proposed system(s) and how the field replacement strategy affects serviceability.

The Offeror shall describe the hardware support personnel structure that they will employ.

2.2.5.9. Failure in Time (FIT) Rates

The Offeror shall provide the anticipated FIT rates for common field replaceable components in the CMRS, FS, and LTFS.

2.2.6. Warranty, Maintenance, and Support

The Offeror shall describe in detail the proposed hardware and software warranty, maintenance, and services to be provided with the proposed system(s), including staffing plans.



The Offeror shall describe all warranty, maintenance, and support activities such that no activities extend past September 30, 2014.

2.2.7. Facilities Requirements

2.2.7.1. Response Requirements

The Offeror shall provide a rack layout diagram for the proposed system.

The Offeror shall describe the requirements for quantity, current rating, and number of poles for the breakers to be installed in the switchboards supplying power to the CMRS.

The Offeror shall provide power consumption figures for each individual node type, each type of rack (for example, switching equipment racks, compute racks), and for the aggregate over the entire CMRS. The Offeror shall provide aggregate cooling requirements for the system. The Offeror shall describe the air intake and flow requirements for each rack and aisle.

The Offeror shall provide cooling information required for the CMRS computing system, and other significant consumers including storage systems.

For consumers of chilled water, the Offeror shall provide the following:

- Maximum heat load removed directly by chilled water in (refrigeration) tons
- Supply temperature requirements in degrees F
- Minimum differential temperature in degrees F
- Maximum flow rate in gallons per minute
- Maximum pressure differential required in pounds per square inch
- Chemistry if different from typical chilled water systems
- Maximum particulate size permitted in microns

For consumers of computer room air, the Offeror shall provide the following:

- Maximum heat load removed by computer room air in (refrigeration) tons
- Supply temperature requirements in degrees F
- Supply dew point temperature requirements in degrees F
- Special filtration requirements

Condensate is removed from the computer room by a gravity system under the access floor. CRU condensate is removed by this drainage system. Condensate drainage information required for the CMRS shall be provided as follows:

- Maximum condensate flow in gallons per minute
- Special connections required

2.2.7.2. Site Visits

The selected Offeror shall conduct a site visit prior to installation of their initial system.

2.3. Benchmark Performance of the Offeror's Solution

For the purposes of this Solicitation, ORNL has assembled a series of application codes and data sets that will comprise a benchmark suite.

The description of the benchmark suite, and the Instructions to Offerors relative to reporting the results of the benchmarks are described in detail in Attachment D of the Solicitation. This information must be reported as an Addendum to the Technical Proposal as described in Section 1.3.



2.4. Delivery Schedule of the CMRS Elements

The Offeror shall describe the system description and delivery schedule for the proposed TDS and CMRS subsystem(s). The delivery schedule will reflect the Offeror’s decision to propose either a single phased delivery or a multiple phase delivery. A suggested format for that schedule is shown in Figure 2.

	System Description	Delivery Date	Upgrade Description	Upgrade Date	Decommissioning Date
Phase 1 TDS		/ /2010			
Phase 1 CMRS Subsystem		/ /2010			
Phase 2 TDS					
Phase 2 CMRS Subsystem					

Figure 2. Offeror Delivery Schedule Summary

The Offeror should describe known risks, whether they are related to third party suppliers, fabrication, manufacturing, software, or similar issues, and factors that reduce risk to the proposed delivery schedule. The Offeror should describe internal design, engineering, and manufacturing schedules, internal milestones, and other programmatic schedule elements that describe the confidence of the limited and general availability of the proposed system(s). The Offeror should describe the position of the proposed systems within their manufacturing pipeline, and describe risks to delivery schedules, and methods for mitigating those risks.

2.4.1. Upgrade Schedule for both Single and Multiple phase Deliveries

If the Offeror proposes an upgrade to any delivery, either for Phase 1, Phase 2, or both, the Offeror shall describe the terms of each upgrade relative to the disposition of the excess property or material. The Offeror shall state whether terms of each upgrade require that replaced parts be returned to the Offeror, or whether the replaced parts remain property of the Government.

As described in the Technical Specification, an upgrade to either Phase must also include the same upgrade to the associated TDS.

2.4.2. Decommissioning Schedule for Single Phase Deliveries

The decommissioning schedule for a Single Phase delivery shall meet the warranty, maintenance, and support terms described in the Technical Specification. After the single phase system is decommissioned, it will remain the property of the Government.

2.4.3. Decommissioning Schedule for Multiple Phase Deliveries

The decommissioning schedule for all systems shall meet the warranty, maintenance, and support terms described in the Technical Specification. The Offeror shall describe whether the decommissioning schedule for the first system of a multiple-phase delivery includes the return of that system to the Offeror as part of a trade-in, or whether the system remains titled to the Government.

The selected Offeror is responsible for any costs associated with the physical return of a decommissioned system.



Decommissioned Phase 2 systems shall remain titled to the Government.

3. Past Performance Volume Preparation Instructions

3.1. Past Performance

The Offeror shall provide a written description of projects similar in type and complexity as this project that the Offeror has completed in the past 3 years. The Offeror shall include technical and business contact points by name, title, address, telephone number and, if available, an e-mail address. The Offeror is encouraged to include a self-assessment of their performance on these projects. The Offeror should discuss lessons learned from these projects and how those lessons have been incorporated into improved products and processes.

3.2. Corporate Capability

The Offeror shall address the following elements:

- Commitment to high performance technical computing including a strong product roadmap and commitment to advancing the HPC state of the art through investment in development and research appropriate for the size of the company. If open source solutions are proposed, this should include contributions to open source software relevant to HPC.
- Management and corporate capability, including identifying and managing risk throughout the project.
- Assessment of project risks with regard to how the Offeror shall meet the technical, support, and schedule requirements of this solicitation.
- Assessment of named individuals assigned to roles on this Project.

4. Life Cycle and Option Cost Assessment

The Offeror shall ensure that the facilities related information that is described in Section 2.2.7 is sufficient to allow ORNL to calculate the anticipated life cycle cost of the proposed systems. The Offeror may contribute additional information, subject to the page restrictions of the Technical Proposal, which will assist with this calculation.

5. Business Management Proposal Preparation Instructions

5.1. Signature

The Offeror shall provide a completed, signed copy of the Solicitation and Offer and Subcontract forms. ORNL shall assume that the Offeror failed to comply with the requirements for a response if this section is incomplete.

5.2. Price Information

The Offeror shall submit the following information in a Microsoft Excel spreadsheet format. The Microsoft Office Open XML Format Spreadsheet (.xlsx) is preferred. The Microsoft Excel 97-2004 format (.xls) version is also acceptable.

1. Separate prices for purchase, delivery, installation, setup, and testing for each test and development system, each subsystem, the LTFS, the FS, and the software.



2. Separate prices for the extended warranty for each test and development system, each subsystem, the LTFS, the FS, and the software.
3. Separate annual prices for the provided personnel, including the site support advocate, the system administrators, storage system administrators, the application support staff, the hardware support staff. Include a description of the assumptions that are made about each position's time including on-site or remote, and hours dedicated to the position on an annual basis.
4. Separate prices, if any, for drawings, documentation, and manuals.
5. Separate prices, if any, for training.
6. A detailed equipment list for each test and development system, each subsystem, the LTFS, the FS, and the software with the manufacturer name and part number and Offeror price for all significant items.

5.3. Milestone Schedule

The Offeror shall provide a payment milestone schedule that coincides with the proposed single phase or multiple phase delivery. This milestone schedule may reflect separate milestone payments for hardware acceptance and full system acceptance for subsystem deliveries, and upgrades.

The Offeror shall provide the acquisition and extended warranty/maintenance prices, per TDS and system, as separate items. Extended warranty/maintenance prices should reflect annual prices, or partial annual prices for a system that is decommissioned early as part of a multi-phase delivery strategy.

The Offeror shall delineate the prices for on-site personnel separately. ORNL will provide standard items for on-site staff, including office space and furniture. Other items that Offeror staff require including computers are the responsibility of the selected Offeror.

The Offeror shall describe the personnel staffing plan. The Offeror is strongly encouraged to designate key personnel that will fill Advocate, Administrative, Application Support, and other roles, and provide resume summaries for those staff.

The Offeror shall provide the price for acquisition, installation, integration, warranty/maintenance, and support for the LTFS as a separately priced item.

5.4. Options

The Offeror shall provide a firm fixed price for each option described below. Option pricing shall include all delivery, installation, warranty, maintenance, and support for three years. Offerors should include relevant technical, business, and price information for the following options:

5.4.1. Memory Upgrade

The Offeror shall provide a fully priced option for delivering each proposed system with no less than 10%, and up to 100%, of the nodes configured with an effective memory configuration equal to 4GB/core.



The Offeror shall indicate price points for memory upgrades that reflect volume or price discount positions that can be tied directly to architectural positions. As applicable, the Offeror shall describe the number of nodes with the revised memory configuration, configuration of the DIMMS, with respect to density, component specifications, speed, power consumption, impact to performance due to rank, or other factor.

A suggested format for providing that information is shown in Figure 3. The Offeror may revise the suggested price points to reflect realistic system boundaries and manufacturing or delivery price points, and their delivery and upgrade strategy.

	System Description	Core Count at 2GB/core	Core Count at 4GB/core	% of System with 4GB/core	Option Price above Base Configuration with 100% of cores at 2GB/core
Phase 1 TDS				50%	\$
				100%	\$
Phase 1 CMRS Subsystem				10%	\$
				25%	\$
				50%	\$
				75%	\$
				100%	\$
Phase 2 TDS				10%	\$
				50%	\$
				100%	\$
Phase 2 CMRS Subsystem				10%	\$
				25%	\$
				50%	\$
				75%	\$
				100%	\$

Figure 3. Suggested Format for Memory Upgrade Pricing Schedule

5.4.2. Extended Maintenance

5.4.2.1. Systems

The Offeror shall provide a fully priced option for extending the maintenance on each proposed system, the FS, and the LTFS for a total of two additional years, in one year, renewable increments. The Offeror shall describe the features of these extended warranties.

5.4.2.2. Personnel

The Offeror shall provide a fully priced option for extending the personnel support contract, by position for a total of two additional years, in one year renewable increments. The Offeror shall describe any limitations of this extended support contract.



5.5. Additional Information

5.5.1. Royalty Information.

The Offeror shall include in this section:

Cost or charges for royalties. If your proposal includes costs or charges for royalties totaling more than \$250, you must include the following information for each separate item of royalty or license fee:

- a. Name and address of licensor
- b. Date of license agreement
- c. Patent numbers, patent application serial numbers, or other basis on which the royalty is payable
- d. Brief description, including any part or model numbers of each contract item or component on which the royalty is payable
- e. Percentage or dollar rate of royalty per unit
- f. Unit price of contract item
- g. Number of units; and
- h. Total dollar amount of royalties

Copies of current licenses. In addition, at our request before execution of the subcontract, you must furnish a copy of the current license agreement and an identification of applicable claims of specific patents or other basis upon which the royalty may be payable.

5.5.2. Other Information.

The Offeror shall include in this section:

- a. Any exceptions that you take to the provisions of this solicitation.
- b. A completed, signed copy of the form entitled "Representations and Certifications."
- c. If you are not a small business concern and your proposal exceeds \$650,000, a completed, signed copy of the form entitled Cost Accounting Standards Notices and Certification.
- d. If your proposal exceeds \$500,000 and you are not a small business, either a copy of your Small Business Subcontracting Plan or the Company form Representations Regarding Subcontracting Plans with an explanation of why no subcontracting possibilities exist. [Instructions on the contents and format of subcontracting plans are in the clause entitled Small Business Subcontracting Plan (July 2006), which is made a part of this solicitation. A sample subcontracting plan (adapted from Appendix 9 of SBA Standard Operating Procedure 60 03 5) is available at http://www.ornl.gov/adm/contracts/art_forms.shtml]. At a minimum, your plan is to mirror the Company's most recent Small Business Goals available at the following website: <http://www.ornl.gov/adm/contracts/smallbusgoals.shtml>
- e. A completed, signed copy of the form entitled "Exhibit 2 - Representation of Limited Rights Data and Restricted Computer Software."
- f. If your proposal exceeds \$10 million, a copy of the EEO Preaward Clearance Request form with items 3, 4, 8, 9, 11, and 12 completed. [Prospective awardees of subcontracts



of \$10 million or more are subject to preaward compliance evaluations by the Office of Federal Contract Compliance Programs (OFCCP), unless within the preceding 24 months OFCCP has conducted an evaluation and found the prospective awardee to be in compliance with Executive Order 11246.]