

| AWARD/CONTRACT | | 1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) <input checked="" type="checkbox"/> | RATING DO-C9 | PAGE 1 OF 49 | |
|--|---------------------------------------|---|--|--|------------------------------------|
| 2. CONTRACT (Proc. Inst. Ident.) NO. NNC08BA09B | | 3. EFFECTIVE DATE 9/1/08 | 4. REQUISITION/PURCHASE REQUEST/PROJECT NO. N/A | | |
| 5. ISSUED BY NASA Glenn Research Center Attn: Leahmarie Stervagi Institutional Services Branch 21000 Brookpark Road, Mail Stop 500-312 Cleveland, OH 44135-3191 | | CODE CHC/LS | 6. ADMINISTERED BY (If other than Item 5) CODE | | |
| 7. NAME AND ADDRESS OF CONTRACTOR (No., street, city, country, State and ZIP Code) DB Consulting Group Attn: Gerald Boyd, Jr. 8403 Colesville Road 10th Floor Silver Spring, MD 20910-6378 | | | 8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input type="checkbox"/> OTHER (See below) | | |
| | | | 9. DISCOUNT FOR PROMPT PAYMENT | | |
| | | | 10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN | | |
| CODE: | | FACILITY CODE (GF) | IN: <input checked="" type="checkbox"/> ITEM 12 | | |
| 11. SHIP TO/MARK FOR CODE | | CHC/LS | 12. PAYMENT WILL BE MADE BY CODE | | |
| | | | NASA Shared Services Center (NSSC) Financial Management Division (FMD) - Accounts Payable Bldg. 1111, C. Road Stennis Space Center, MS 39529 Email: NSSC-AccountsPayable@nasa.gov Fax: 866-209-5415 | | |
| 13. AUTHORITY FOR USING OTHER THAN FULL & OPEN COMPETITION: <input type="checkbox"/> 10 U.S.C. 2304(c) () <input type="checkbox"/> 41 U.S.C. 253(c) () | | | 14. ACCOUNTING AND APPROPRIATION DATA Funding on individual tasks | | |
| 15A. ITEM NO. | 15B. SUPPLIES/SERVICES | 15C. QUANTITY | 15D. UNIT | 15E. UNIT PRICE | 15F. AMOUNT |
| 1 | PACE III 3 Year Base Contract | 1 | JOB | \$51,647,034.00 | \$51,647,034.00 |
| 15G. TOTAL AMOUNT OF CONTRACT > | | | | | \$51,647,034.00 |
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| CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE | | | | | |
| 17. <input type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.) | | | 18. <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary. | | |
| 19A. NAME AND TITLE OF SIGNER (Type or print) Gerald Boyd, Jr. President/CEO | | | 20A. NAME OF CONTRACTING OFFICER (Type or print) Leahmarie Stervagi | | |
| 19B. NAME OF CONTRACTOR DBT | | 19C. DATE SIGNED 8/28/08 | 20B. UNITED STATES OF AMERICA USA | | 20C. DATE SIGNED 8/28/08 |
| BY _____ (Signature of person authorized to sign) | | BY _____ (Signature of Contracting Officer) | | | |

PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

B.1 SUPPLIES AND/OR SERVICES TO BE PROVIDED

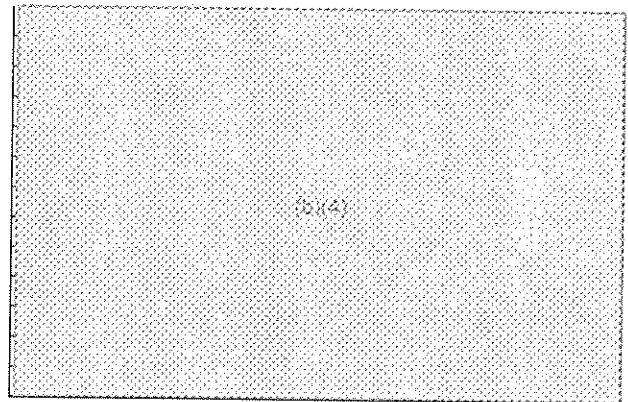
The Contractor shall provide all resources (except as may be expressly stated in the contract as furnished by the Government) necessary to deliver and/or perform the items below in accordance with the Statement of Work incorporated as Attachment J.1(a), entitled "Professional, Administrative, Computational, and Engineering Services III (PACE III)."

B.2 HOURLY RATES AND CONTRACT CEILING PRICE

The hourly rates for computation of payment and the contract ceiling price referred to in FAR clause 52.232 7, "Payments Under Time-and-Materials and Labor-Hour Contracts" of this contract are as follows:

| Labor Category | YR1 Rate | YR2 Rate | YR3 Rate | YR4 Rate | YR5 Rate |
|--|-------------|-------------|-------------|-------------|-------------|
| Sr. IT Project Director / Program Manager | | | | | |
| Data Entry Technician / Application Programmer Level 1 | | | | | |
| System Analyst I / Programmer I / Application Programmer Level 2 | | | | | |
| System Analyst II / Programmer II / Application Programmer Level 3 | | | | | |
| IT Project Manager / Business Analyst | | | | | |
| System Analyst III / Programmer III / Computer Security Systems Specialist Level 2 | | | | | |
| Senior Analyst II / Consultant Level 1 | | | | | |
| Senior Analyst II / Consultant Level 2 | | | | | |
| IT Project Director / Consultant Level 3 | | | | | |
| Sr. IT Project Director / Consultant Level 4 | | | | | |
| Data Entry Technician / Data Entry Clerk | | | | | |
| Database System Specialist / Data Validation/Standardization Specialist | | | | | |
| Senior Analyst II / Database Management Specialist Level 2 | | | | | |
| Senior Analyst II / Database Management Specialist Level 3 | | | | | |
| Desktop / Help Desk Support Technician / Documentation Specialist | | | | | |
| Senior Analyst II / Engineer Level 1 | | | | | |
| Senior Analyst II / Engineer Level 2 | | | | | |
| Senior Analyst II / Engineer Level 3 | | | | | |
| Senior Analyst II / Functional Analyst Level 1 | | | | | |
| Senior Analyst II / Functional Analyst Level 2 | | | | | |
| Data Entry Technician / Hardware/Network Installation Technician Level 1 | | | | | |
| Database System Specialist / Hardware/Network Installation Technician Level 2 | | | | | |
| Database System Specialist / Hardware/Network Specialist Level 1 | | | | | |
| Database System Specialist / Hardware/Network Specialist Level 2 | | | | | |
| System Analyst III / Programmer III / Information Engineer Level 1 | | | | | |
| Senior Analyst II / Internet/Intranet Engineer | | | | | |
| Senior Meeting Specialist / Program Administration Specialist Level 2 | | | | | |

Technical Assistance Coordinator / Project Control Specialist Level 1
 System Analyst III / Programmer III / Software Engineer Level 3
 Senior Analyst II / Subject Matter Expert Level 1
 Senior Analyst II / Subject Matter Expert Level 2
 IT Project Director / Subject Matter Expert Level 3
 IT Project Director / Subject Matter Expert Level 4
 Desktop / Helpdesk Support Technician / System Operator
 Database System Specialist / Systems Administrator
 Senior Analyst II / Systems Engineer Level 1
 Senior Analyst II / Systems Engineer Level 2
 Senior Analyst II / Systems Engineer Level 3
 Technical Assistance Coordinator / Training Specialist 1
 Technical Assistance Coordinator / Training Specialist 2



The estimated maximum limits of this BPA are as follows:

| | Total Estimated Maximum Costs |
|-----------------------------|-------------------------------|
| Base Period (36 months) | \$ 51,647,034.00 |
| Option Period 1 (24 months) | \$ 36,428,963.00 |

B.3 AVAILABILITY OF FUNDS (FAR 52.232-18) (APR 1984)

Funds are not presently available for this contract. The Government's obligation under this contract is contingent upon the availability of appropriated funds from which payment for contract purposes can be made. No legal liability on the part of the Government for any payment may arise until funds are made available to the Contracting Officer for this contract and until the Contractor receives notice of such availability, to be confirmed in writing by the Contracting Officer.

SECTION C - DESCRIPTION/SPECIFICATION/WORK STATEMENT

C.1 SPECIFICATION/STATEMENT OF WORK

The Contractor shall provide the item or services specified in Section B in accordance with the following Statement of Work entitled Professional, Administrative, Computational, and Engineering Services III (PACE III) dated February 11, 2008. (Attachment J.1(a))

SECTION D - PACKAGING AND MARKING

D.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in clause 52.252-2, Clauses Incorporated by Reference, of this contract.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

None included by reference.

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

| CLAUSE NUMBER | DATE | TITLE |
|------------------|----------|---|
| 1852.211-70 | SEP 2005 | Packaging, Handling, and Transportation |

D.2 PACKAGING INSTRUCTIONS (GLENN SUPPLEMENTAL REQUIREMENTS) (SEP 2006)

All deliverables under this contract shall be packaged in accordance with: (1) best commercial practice that will afford protection against physical damage, degradation, and/or deterioration during direct shipment and (2) the regulations of the carriers for the mode of transportation employed.

SECTION E - INSPECTION AND ACCEPTANCE

E.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in clause 52.252-2, Clauses Incorporated by Reference, of this contract.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

| CLAUSE NUMBER | DATE | TITLE |
|------------------|----------|--|
| 52.246-6 | MAY 2001 | INSPECTION - TIME-AND-MATERIAL AND LABOR-HOUR |

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

None included by reference.

E.2 INSPECTION AND ACCEPTANCE (GRC 52.246-92) (JAN 1987)

Final inspection and acceptance of all work performed under this contract, including all deliverable items, will be performed at destination.

SECTION F - DELIVERIES OR PERFORMANCE

F.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in clause 52.252-2, Clauses Incorporated by Reference, of this contract.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

| CLAUSE NUMBER | DATE | TITLE |
|------------------|----------|----------------------------|
| 52.242-15 | AUG 1989 | STOP-WORK ORDER (AUG 1989) |

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

None included by reference.

F.2 PERIOD OF PERFORMANCE – BASIC AND OPTIONS

The initial period of performance (not including any phase-in) shall be for a period of thirty-six (36) months. Subsequent periods, if any, shall be for period of 24 months. If the Government requires performance of services after the initial contract period, notification to the Contractor of such requirement shall be in accordance with the clause 52.217-9 entitled "Option to Extend the Term of the Contract." The maximum period shall normally not exceed 5 years.

F.3 PLACE OF PERFORMANCE - SERVICES

The effort required under this contract shall be performed at the following location, on-site at the Glenn Research Center, NASA Plum Brook Station or other locations as indicated in the issued work orders:

NASA Glenn Research Center
21000 Brookpark Road
Cleveland, OH 44135

NASA Glenn Research Center
Plum Brook Station
6100 Columbus Ave.
Sandusky, OH 44870

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in clause 52.252-2, Clauses Incorporated by Reference, of this contract.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

| CLAUSE NUMBER | DATE | TITLE |
|------------------|------|-------|
|------------------|------|-------|

None included by reference.

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

| CLAUSE NUMBER | DATE | TITLE |
|------------------|----------|---|
| 1852.223-71 | DEC 1988 | FREQUENCY AUTHORIZATION |
| 1852.227-11 | MAY 2002 | PATENT RIGHTS - RETENTION BY THE CONTRACTOR (SHORT FORM) |
| 1852.227-70 | MAY 2002 | NEW TECHNOLOGY |
| 1852.227-71 | APR 1984 | REQUESTS FOR WAIVER OF RIGHTS TO INVENTIONS |
| 1852.245-72 | MAR 1989 | LIABILITY FOR GOVERNMENT PROPERTY FURNISHED FOR REPAIR OR OTHER SERVICES |
| 1852.227-72 | JUL 1997 | DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (a) NASA Glenn Research Center Attn: Kathleen Kerrigan Technology Transfer and Partnership Office M.S. 4-2 21000 Brookpark Road Cleveland, Ohio 44135 |

G.2 TECHNICAL DIRECTION (NFS 1852.242-70) (SEP 1993)

(a) Performance of the work under this contract is subject to the written technical direction of the Contracting Officer Technical Representative (COTR), who shall be specifically appointed by the Contracting Officer in writing in accordance with NASA FAR Supplement 1842.270.

"Technical direction" means a directive to the Contractor that approves approaches, solutions, designs, or refinements; fills in details or otherwise completes the general description of work or documentation items; shifts emphasis among work areas or tasks; or furnishes similar instruction to the Contractor. Technical direction includes requiring studies and pursuit of certain lines of inquiry regarding matters within the general tasks and requirements in Section C of this contract.

(b) The COTR does not have the authority to, and shall not, issue any instruction purporting to be technical direction that:

- (1) Constitutes an assignment of additional work outside the statement of work;
- (2) Constitutes a change as defined in the changes clause;
- (3) Constitutes a basis for any increase or decrease in the total estimated contract cost, the fixed fee (if any), or the time required for contract performance;
- (4) Changes any of the expressed terms, conditions, or specifications of the contract; or
- (5) Interferes with the contractor's rights to perform the terms and conditions of the contract.

(c) All technical direction shall be issued in writing by the COTR.

(d) The Contractor shall proceed promptly with the performance of technical direction duly issued by the COTR in the manner prescribed by this clause and within the COTR's authority. If, in the Contractor's opinion, any instruction or direction by the COTR falls within any of the categories defined in paragraph (b) of this clause, the Contractor shall not proceed but shall notify the Contracting Officer in writing within 5 working days after receiving it and shall request the Contracting Officer to take action as described in this clause. Upon receiving this notification, the Contracting Officer shall either issue an appropriate contract modification within a reasonable time or advise the Contractor in writing within 30 days that the instruction or direction is:

- (1) Rescinded in its entirety; or
- (2) Within the requirements of the contract and does not constitute a change under the changes clause of the contract, and that the Contractor should proceed promptly with its performance.

(e) A failure of the Contractor and Contracting Officer to agree that the instruction or direction is both within the requirements of the contract and does not constitute a change under the changes clause, or a failure to agree upon the contract action to be taken with respect to the instruction or direction, shall be subject to the Disputes clause of this contract.

(f) Any action(s) taken by the contractor in response to any direction given by any person other than the Contracting Officer or the COTR shall be at the Contractor's risk.

**G.3 NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING (NFS 1852.242-73)
(NOV 2004)**

- (a) The Contractor shall submit NASA Contractor Financial Management Reports on NASA Forms 533 in accordance with the instructions in NASA Procedures and Guidelines (NPR) 9501.2, NASA Contractor Financial Management Reporting, and on the reverse side of the forms, as supplemented in the Schedule of this contract. The detailed reporting categories to be used, which shall correlate with technical and schedule reporting, shall be set forth in the Schedule. Contractor implementation of reporting requirements under this clause shall include NASA approval of the definitions of the content of each reporting category and give due regard to the Contractor's established financial management information system.
- (b) Lower level detail used by the Contractor for its own management purposes to validate information provided to NASA shall be compatible with NASA requirements.
- (c) Reports shall be submitted in the number of copies, at the time, and in the manner set forth in the Schedule or as designated in writing by the Contracting Officer. Upon completion and acceptance by NASA of all contract line items, the Contracting Officer may direct the Contractor to submit Form 533 reports on a quarterly basis only, report only when changes in actual cost occur, or suspend reporting altogether.
- (d) The Contractor shall ensure that its Form 533 reports include accurate subcontractor cost data, in the proper reporting categories, for the reporting period.
- (e) If during the performance of this contract NASA requires a change in the information or reporting requirements specified in the Schedule, or as provided for in paragraph (a) or (c) of this clause, the Contracting Officer shall effect that change in accordance with the Changes clause of this contract.

**G.4 CONTRACTOR REQUESTS FOR GOVERNMENT-OWNED EQUIPMENT
(NFS 1852.245-70) (JUL 1997)**

- (a) 'Equipment,' as used in this clause, means commercially available items capable of stand-alone use, including those to be acquired for incorporation into special test equipment or special tooling.
- (b)(1) Upon determination of need for any Government-owned equipment item for performance of this contract, the contractor shall provide to the contracting officer a written request justifying the need for the equipment and the reasons why contractor-owned property cannot be used, citing the applicable FAR or contract authority for use of Government-owned equipment. Equipment being acquired as a deliverable end item listed in the contract or as a component for incorporation into a deliverable end item listed in the contract is exempt from this requirement.
- (2) The Contractor's request shall include a description of the item in sufficient detail to enable the Government to screen its inventories for available equipment or to purchase equipment. For this purpose, the Contractor shall (i) prepare a separate DD Form 1419, DOD Industrial Plant Equipment Requisition, or equivalent format, for each item requested and (ii) forward it through the Contracting Officer to the Industrial Property Officer at the cognizant NASA installation at least 30 days in advance of the date the Contractor intends to acquire the item. Multiple units of identical items may be requested on a single form.

Instructions for preparing the DD Form 1419 are contained in NASA FAR Supplement 1845.7102. If a certificate of nonavailability is not received within that period, the Contractor may proceed to acquire the item, subject to having obtained Contracting Officer consent, if required, and having complied with any other applicable provisions of this contract.

(c) Contractors who are authorized to conduct their own screening using the NASA Equipment Management System (NEMS) and other Government sources of excess property shall provide the evidence of screening results with their request for contracting officer consent. Requests to purchase based on unsuitability of items found shall include rationale for the determined unsuitability.

G.5 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (DEVIATION) (NFS 1852.245-71)(SEPTEMBER 2007)

(a) The Government property described in paragraph (c) of this clause may be made available to the Contractor on a no-charge basis for use in performance of this contract. This property shall be utilized only within the physical confines of the NASA installation that provided the property unless authorized by the contracting officer under (b)(1)(iv). Under this clause, the Government retains accountability for, and title to, the property, and the Contractor shall comply with the following:

"See NASA Procedural Requirements (NPR) 4200.1, "NASA Equipment Management Manual", NPR 4200.2, "NASA Equipment Management User's Guide for Property Custodians", NPR 4300.1, "NASA Personal Property Disposal", and NPR 4310.4, "Identification and Disposition of NASA Artifacts", for applicable user responsibilities."

Property not recorded in NASA property systems must be managed in accordance with the requirements of FAR 52.245-1.

The Contractor shall establish and adhere to a system of written procedures to assure continued, effective management control and compliance with these user responsibilities. Such procedures must include holding employees liable, when appropriate, for loss, damage, or destruction of Government property.

(b)(1) The official accountable recordkeeping, financial control, and reporting of the property subject to this clause shall be retained by the Government and accomplished within NASA management information systems prescribed by the installation Supply and Equipment Management Officer (SEMO) and Financial Management Officer. If this contract provides for the Contractor to acquire property, title to which will vest in the Government, the following additional procedures apply:

(i) The Contractor's purchase order shall require the vendor to deliver the property to the installation central receiving area.

(ii) The Contractor shall furnish a copy of each purchase order, prior to delivery by the vendor, to the installation central receiving area.

(iii) The Contractor shall establish a record of the property as required by FAR 52.245-1, Government Property, and furnish to the Industrial Property Officer a DD Form 1149, Requisition

and Invoice/Shipping Document, (or installation equivalent) to transfer accountability to the Government within 5 working days after receipt of the property by the Contractor. The Contractor is accountable for all contractor-acquired property until the property is transferred to the Government's accountability.

(iv) Contractor use of Government property at an off-site location and off-site subcontractor use require advance approval of the Contracting Officer and notification of the Industrial Property Officer. The property shall be considered Government furnished and the Contractor shall assume accountability and financial reporting responsibility. The Contractor shall establish records and property control procedures and maintain the property in accordance with the requirements of FAR 52.245-1, Government Property, until its return to the installation. NASA Procedural Requirements related to property loans shall not apply to offsite use of property by contractors.

(2) After transfer of accountability to the Government, the Contractor shall continue to maintain such internal records as are necessary to execute the user responsibilities identified in paragraph (a) of this clause and document the acquisition, billing, and disposition of the property. These records and supporting documentation shall be made available, upon request, to the SEMO and any other authorized representatives of the Contracting Officer.

(c) The following property and services are provided if checked.

(1) Office space, work area space, and utilities. Government telephones are available for official purposes only.

(2) Office furniture.

(3) Property listed in N/A

(ii) If the Contractor acquires property, title to which vests in the Government pursuant to other provisions of this contract, this property also shall become accountable to the Government upon its entry into Government records.

(iii) The Contractor shall not bring to the installation for use under this contract any property owned or leased by the Contractor, or other property that the Contractor is accountable for under any other Government contract, without the Contracting Officer's prior written approval.

(4) Supplies from stores stock.

(5) Publications and blank forms stocked by the installation.

(6) Safety and fire protection for Contractor personnel and facilities.

(7) Installation service facilities: Library; Equipment calibration; Gov't-owned motor pool vehicles; Airport shuttle; Vehicle maintenance and fuel; Child care (Under similar terms and conditions applied to GRC civil servants); Fitness center (Under similar terms and conditions applied to GRC civil servants).

X (8) Medical treatment of a first-aid nature for Contractor personnel injuries or illnesses sustained during on-site duty.

X (9) Cafeteria privileges for Contractor employees during normal operating hours.

X (10) Building maintenance for facilities occupied by Contractor personnel.

X (11) Moving and hauling for office moves, movement of large equipment, and delivery of supplies. Moving services may be provided on-site, as approved by the Contracting Officer.

G.6 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (NFS 1852.245-73) (OCT 2003)

(a) The Contractor shall submit annually a NASA Form (NF) 1018, NASA Property in the Custody of Contractors, in accordance with the provisions of 1845.505-14, the instructions on the form, subpart 1845.71, and any supplemental instructions for the current reporting period issued by NASA.

(b)(1) Subcontractor use of NF 1018 is not required by this clause; however, the Contractor shall include data on property in the possession of subcontractors in the annual NF 1018.

(2) The Contractor shall mail the original signed NF 1018 directly to the cognizant NASA Center Deputy Chief Financial Officer, Finance, unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(3) One copy shall be submitted (through the Department of Defense (DOD) Property Administrator if contract administration has been delegated to DOD) to the following address: [Insert name and address of appropriate NASA Center office.], unless the Contractor uses the NF 1018 Electronic Submission System (NESS) for report preparation and submission.

(c)(1) The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that required reports be received no later than October 15. Some activity may be estimated for the month of September, if necessary, to ensure the NF 1018 is received when due. However, Contractors procedures must document the process for developing these estimates based on planned activity such as planned purchases or NASA Form 533 (NF 533 Contractor Financial Management Report) cost estimates. It should be supported and documented by historical experience or other corroborating evidence, and be retained in accordance with FAR Subpart 4.7, Contractor Records Retention. Contractors shall validate the reasonableness of the estimates and associated methodology by comparing them to the actual activity once that data is available, and adjust them accordingly. In addition, differences between the estimated cost and actual cost must be adjusted during the next reporting period. Contractors shall have formal policies and procedures, which address the validation of NF 1018 data, including data from subcontractors, and the identification and timely reporting of errors. The objective of this validation is to ensure that information reported is accurate and in compliance with the NASA FAR Supplement. If errors are discovered on NF 1018 after submission, the Contractor shall contact the cognizant NASA Center Industrial Property Officer (IPO) within 30 days after

discovery of the error to discuss corrective action.

(2) The Contracting Officer may, in NASA's interest, withhold payment until a reserve not exceeding \$25,000 or 5 percent of the amount of the contract, whichever is less, has been set aside, if the Contractor fails to submit annual NF 1018 reports in accordance with 1845.505-14 and any supplemental instructions for the current reporting period issued by NASA. Such reserve shall be withheld until the Contracting Officer has determined that NASA has received the required reports. The withholding of any amount or the subsequent payment thereof shall not be construed as a waiver of any Government right.

(d) A final report shall be submitted within 30 days after disposition of all property subject to reporting when the contract performance period is complete in accordance with (b)(1) through (3) of this clause.

G.7 NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTS (GLENN SUPPLEMENTAL REQUIREMENTS) (SEP 2006)

The following requirements are in addition to those stated in the NASA Contractor Financial Management Reporting clause (1852.242-73) of this contract.

a) The reporting categories for the NASA Form (NF) 533 reports are:

- i. Direct Labor Categories/Hours/Dollars
- ii. Labor Overhead Dollars
- iii. Other Indirect Dollars
- iv. Travel Dollars
- v. Materials/Supplies Dollars
- vi. Other Direct Cost Dollars
- vii. G&A Expense Dollars

b) IF THE VALUE OF THIS CONTRACT (including options, whether exercised or unexercised) EXCEEDS \$1 MILLION, and the Contractor is submitting Financial Reports that provide both actual expenditures from past months and estimated expenditures for current/future months, THEN the Contractor shall provide a short explanation (approximately one sentence) of any variance that exceeds 5%, between a previous estimated month-specific expenditure and the actual expenditure experienced. [Example: The March 533M states that Actuals for March were \$80K and Planned expenditures for April are \$100K. The April 533M states that Actuals for April were \$92K, which is a variance of 8% (from the "March Planned" number of \$100K). A short explanation -- "widget prices were unusually low" -- is required.]

c) IF THIS IS A TASK ORDER CONTRACT, the Contractor is required to submit one set of monthly Financial Reports that summarize the entire contract at the Task Order Level (total hours/dollars per Task Order), and a second set of monthly Financial Reports that address the individual reporting categories identified in paragraph (a) above, for each active Task Order.

G.8 TECHNICAL INCENTIVE FEE PLAN

The parties hereby agree to establish a Technical Incentive Fee in accordance with Contractor's proposal dated April 4, 2008.

This fee shall be reviewed and approved by the Government every 6 months.

The decisions of this technical incentive fee are final, and at the sole determination of the Government.

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference, with the same force and effect as if they were given in full text. Clauses incorporated by reference which require a fill-in by the Government include the text of the affected paragraph(s) only. This does not limit the clause to the affected paragraph(s). The Contractor is responsible for understanding and complying with the entire clause. The full text of the clause is available at the addresses contained in clause 52.252-2, Clauses Incorporated by Reference, of this contract.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

| CLAUSE NUMBER | DATE | TITLE |
|------------------|------|-------|
|------------------|------|-------|

None included by reference.

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

| CLAUSE NUMBER | DATE | TITLE |
|--------------------|-----------------|--------------------------------|
| 1852.216-80 | OCT 1996 | TASK ORDERING PROCEDURE |

H.2 PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL (FAR 52.204-9) (NOV 2006)

(a) The Contractor shall comply with agency personal identity verification procedures identified in the contract that implement Homeland Security Presidential Directive-12 (HSPD-12), Office of Management and Budget (OMB) guidance M-05-24, as amended, and Federal Information Processing Standards Publication (FIPS PUB) Number 201, as amended.

(b) The Contractor shall insert this clause in all subcontracts when the subcontractor is required to have routine physical access to a Federally-controlled facility and/or routine access to a Federally-controlled information system.

H.3 SAFETY AND HEALTH (NFS 1852.223-70) (APR 2002)

(a) Safety is the freedom from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment. NASA's safety priority is to protect: (1) the public, (2) astronauts and pilots, (3) the NASA workforce (including contractor employees working on NASA contracts), and (4) high-value equipment and property.

(b) The Contractor shall take all reasonable safety and occupational health measures in performing this contract. The Contractor shall comply with all Federal, State, and local laws applicable to safety and occupational health and with the safety and occupational health standards, specifications, reporting requirements, and any other relevant requirements of this contract.

(c) The Contractor shall take, or cause to be taken, any other safety, and occupational health measures the Contracting Officer may reasonably direct. To the extent that the Contractor may be entitled to an equitable adjustment for those measures under the terms and conditions of this contract, the equitable adjustment shall be determined pursuant to the procedures of the changes clause of this contract; provided, that no adjustment shall be made under this Safety and Health clause for any change for which an equitable adjustment is expressly provided under any other clause of the contract.

(d) The Contractor shall immediately notify and promptly report to the Contracting Officer or a designee any accident, incident, or exposure resulting in fatality, lost-time occupational injury, occupational disease, contamination of property beyond any stated acceptable limits set forth in the contract Schedule; or property loss of \$25,000 or more, or Close Call (a situation or occurrence with no injury, no damage or only minor damage (less than \$1,000) but possesses the potential to cause any type mishap, or any injury, damage, or negative mission impact) that may be of immediate interest to NASA, arising out of work performed under this contract. The Contractor is not required to include in any report an expression of opinion as to the fault or negligence of any employee. In addition, service contractors (excluding construction contracts) shall provide quarterly reports specifying lost-time frequency rate, number of lost-time injuries, exposure, and accident/incident dollar losses as specified in the contract Schedule.

(e) The Contractor shall investigate all work-related incidents, accidents, and Close Calls, to the extent necessary to determine their causes and furnish the Contracting Officer a report, in such form as the Contracting Officer may require, of the investigative findings and proposed or completed corrective actions.

(f) (1) The Contracting Officer may notify the Contractor in writing of any noncompliance with this clause and specify corrective actions to be taken. When the Contracting Officer becomes aware of noncompliance that may pose a serious or imminent danger to safety and health of the public, astronauts and pilots, the NASA workforce (including contractor employees working on NASA contracts), or high value mission critical equipment or property, the Contracting Officer shall notify the Contractor orally, with written confirmation. The Contractor shall promptly take and report any necessary corrective action.

(2) If the Contractor fails or refuses to institute prompt corrective action in accordance with subparagraph (f)(1) of this clause, the Contracting Officer may invoke the stop-work order clause in this contract or any other remedy available to the Government in the event of such failure or refusal.

(g) The Contractor (or subcontractor or supplier) shall insert the substance of this clause, including this paragraph (g) and any applicable Schedule provisions and clauses, with appropriate changes of designations of the parties, in all solicitations and subcontracts of every tier, when one or more of the following conditions exist:

- (1) The work will be conducted completely or partly on premises owned or controlled by the Government.
 - (2) The work includes construction, alteration, or repair of facilities in excess of the simplified acquisition threshold.
 - (3) The work, regardless of place of performance, involves hazards that could endanger the public, astronauts and pilots, the NASA workforce (including Contractor employees working on NASA contracts), or high value equipment or property, and the hazards are not adequately addressed by Occupational Safety and Health Administration (OSHA) or Department of Transportation (DOT) regulations (if applicable).
 - (4) When the Contractor (or subcontractor or supplier) determines that the assessed risk and consequences of a failure to properly manage and control the hazard(s) warrants use of the clause.
- (h) The Contractor (or subcontractor or supplier) may exclude the provisions of paragraph (g) from its solicitation(s) and subcontract(s) of every tier when it determines that the clause is not necessary because the application of the OSHA and DOT (if applicable) regulations constitute adequate safety and occupational health protection. When a determination is made to exclude the provisions of paragraph (g) from a solicitation and subcontract, the Contractor must notify and provide the basis for the determination to the Contracting Officer. In subcontracts of every tier above the micro-purchase threshold for which paragraph (g) does not apply, the Contractor (or subcontractor or supplier) shall insert the substance of paragraphs (a), (b), (c), and (f) of this clause).
- (i) Authorized Government representatives of the Contracting Officer shall have access to and the right to examine the sites or areas where work under this contract is being performed in order to determine the adequacy of the Contractor's safety and occupational health measures under this clause.
- (j) The Contractor shall continually update the safety and health plan when necessary. In particular, the Contractor shall furnish a list of all hazardous operations to be performed, and a list of other major or key operations required or planned in the performance of the contract, even though not deemed hazardous by the Contractor. NASA and the Contractor shall jointly decide which operations are to be considered hazardous, with NASA as the final authority. Before hazardous operations commence, the Contractor shall submit for NASA concurrence:
- (1) Written hazardous operating procedures for all hazardous operations; and/or
 - (2) Qualification standards for personnel involved in hazardous operations.

H.4 SAFETY AND HEALTH PLAN (NFS 1852.223-73) (NOV 2004)

- (a) The Offeror shall submit a detailed safety and occupational health plan within 30 days of contract award (see NPR 8715.3, NASA Safety Manual, Appendices). The plan shall include a detailed discussion of the policies, procedures, and techniques that will be used to ensure the safety and occupational health of Contractor employees and to ensure the safety of all working conditions throughout the performance of the contract.

(b) When applicable, the plan shall address the policies, procedures, and techniques that will be used to ensure the safety and occupational health of the public, astronauts and pilots, the NASA workforce (including Contractor employees working on NASA contracts), and high-value equipment and property.

(c) The plan shall similarly address subcontractor employee safety and occupational health for those proposed subcontracts that contain one or more of the following conditions:

(1) The work will be conducted completely or partly on premises owned or controlled by the government.

(2) The work includes construction, alteration, or repair of facilities in excess of the simplified acquisition threshold.

(3) The work, regardless of place of performance, involves hazards that could endanger the public, astronauts and pilots, the NASA workforce (including Contractor employees working on NASA contracts), or high value equipment or property, and the hazards are not adequately addressed by Occupational Safety and Health Administration (OSHA) or Department of Transportation (DOT) regulations (if applicable).

(4) When the assessed risk and consequences of a failure to properly manage and control the hazards warrants use of the clause.

(d) This plan, as approved by the Contracting Officer, will be included in any resulting contract.

H.5 Supplement to SAFETY AND HEALTH PLAN (NFS 1852.223-70) (MAY 2001) SAFETY AND HEALTH PLAN CONTENT

Upon notification of award, the Offeror shall submit its **SITE SPECIFIC Safety and Health Plan within 30 days of official contract award**. It is generally expected that the plan will be a single document addressing both safety and health. Failure to submit an acceptable Safety and Health Plan may result in delays to the schedule.

For a Safety and Health Plan to be approved, it shall contain as a minimum the following written requirements:

1. A statement of the company's safety and health goals and objectives.
2. A general management and organizational plan for scoping and managing the safety and health programs. Include the name(s) and qualifications of the individual(s) assigned responsibilities to ensure Safety and Health Plan compliance at the work site. Indicate their position(s) within the company's organization and the position to which they report.
3. Describe the company's actual performance and accident experience within the last five (5) years in performing jobs similar in size and scope.
4. Describe methods used to foster and promote motivation and awareness in employees of safety and health matters. Include any regularly scheduled safety and/or health meetings for supervisors, foremen, and employees; and other forms of training.

5. Describe the methods by which improvement of safety and health practices by employees of any subcontractors will be encouraged and rewarded, including any flow down of safety and health requirements to lower tier subcontractors.
6. Provide a job hazard analysis pursuant to paragraph (g) of the Safety and Health clause in Section H, including the content described therein.
7. Safety and Health procedures will be administered by the project Superintendent. All employees will be instructed on safety and health prior to beginning their work.
8. The safety and health rules will be reviewed with the subcontractor's job foreman as he arrives on the site to start work. All employees of subcontractors will be given safety and health rules prior to beginning their work on the project.
9. A safety meeting will be held in accordance with the clause entitled "Safety and Health (Construction)", paragraph (b), in section H of this contract.
10. The NASA emergency telephone number, contract number, and site location or building number will be posted on the job site; i.e., dial 911 from any NASA (beige) phone.
11. Fire extinguishers provided by the contractor will be located on site and readily accessible for use. No flammable liquids or hazardous materials will be stored on the site of the job without prior approval of the COTR.
12. The project Superintendent will conduct safety inspections daily and notify individuals of any violations. Violations will be corrected immediately and documented on the Contractor's Daily Inspection Report.
13. All employees will perform daily clean up and keep all areas free of debris or other potential hazards.
14. The Superintendent will telephone the NASA inspector daily upon arrival to identify the number of employees working, the type of trade, work location, and the work planned for the day.
15. Contractor provided first aid kits will be available at the work site at all times. Advanced medical assistance other than first aid may be requested by dialing 911 on any NASA telephone.
16. In the event that suspected asbestos containing materials are encountered, the work will be stopped immediately and the NASA COTR will be notified and consulted for further direction.
17. Arrangements will be made for any systems testing to be witnessed by the COTR or designated representative. It is understood that no pneumatic pressure testing is permitted without the prior approval of the COTR and the appropriate NASA Area Safety Committee.
18. All trench excavation will be performed in a safe manner and in accordance with applicable OSHA requirements. Proper barricades and lighting as will be provided by the contractor as required by the COTR.

19. All personnel protection including hard hats, hearing and eye protection will be provided by the Contractor.

20. All contractor employees shall abide by the provisions set forth in the NASA Electrical Applications Safety Permit if one has been issued.

21. Welding and cutting operations will be in accordance with applicable OSHA standards. Adequate ventilation of exhaust fumes will be provided. Work on a daily basis will not proceed until clearance is authorized from the NASA Safety Assurance Office and a fire watch is established.

22. Due to the proximity of the NASA Glenn Research Center to the Cleveland Hopkins Airport, erection and use of any cranes requires advance approval from the COTR. Signal men will be on duty and warning signs posted, as required by OSHA.

23. If employees require hospital or emergency medical aid a NASA Mishap Report (NASA Form 1627) will be completed and submitted to the Contracting Officer's Technical Representative for distribution.

24. The contractor will cooperate with NASA to insure that every precaution is taken in establishing a safe working environment for employees.

25. The contractor will continue to update this Safety and Health Plan as appropriate as contract performance progresses.

26. The foregoing Safety and Health policies are not to be considered as waiving or replacing OSHA standards and requirements.

The NASA Glenn Safety Manual which is incorporated by reference can be accessed from the following web site: http://osat-ext.grc.nasa.gov/gso/manual/chapter_index.shtml

H.6 MAJOR BREACH OF SAFETY OR SECURITY (NFS 1852.223-75) (FEB 2002)

(a) Safety is the freedom from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment. Safety is essential to NASA and is a material part of this contract. NASA's safety priority is to protect: (1) the public; (2) astronauts and pilots; (3) the NASA workforce (including contractor employees working on NASA contracts); and (4) high-value equipment and property. A major breach of safety may constitute a breach of contract that entitles the Government to exercise any of its rights and remedies applicable to material parts of this contract, including termination for default. A major breach of safety must be related directly to the work on the contract. A major breach of safety is an act or omission of the Contractor that consists of an accident, incident, or exposure resulting in a fatality or mission failure; or in damage to equipment or property equal to or greater than \$1 million; or in any willful or repeat violation cited by the Occupational Safety and Health Administration (OSHA) or by a state agency operating under an OSHA approved plan.

(b) Security is the condition of safeguarding against espionage, sabotage, crime (including computer crime), or attack. A major breach of security may constitute a breach of contract that entitles the Government to exercise any of its rights and remedies applicable to material parts of this contract, including termination for default. A major breach of security may occur on or off

Government installations, but must be related directly to the work on the contract. A major breach of security is an act or omission by the Contractor that results in compromise of classified information, illegal technology transfer, workplace violence resulting in criminal conviction, sabotage, compromise or denial of information technology services, equipment or property damage from vandalism greater than \$250,000, or theft greater than \$250,000.

(c) In the event of a major breach of safety or security, the Contractor shall report the breach to the Contracting Officer. If directed by the Contracting Officer, the Contractor shall conduct its own investigation and report the results to the Government. The Contractor shall cooperate with the Government investigation, if conducted.

H.7 RESERVED

H.8 RESERVED

H.9 OBSERVANCE OF LEGAL HOLIDAYS

(a) The on-site Government personnel observe the following holidays:

New Year's Day
Labor Day
Martin Luther King, Jr.'s Birthday
Columbus Day
President's Day
Veterans Day
Memorial Day
Thanksgiving Day
Independence Day
Christmas Day

Any other day designated by Federal statute, Executive order, or the President's proclamation.

(b) When any holiday falls on a Saturday, the preceding Friday is observed. When any holiday falls on a Sunday, the following Monday is observed. Observance of such days by Government personnel shall not by itself be cause for an additional period of performance or entitlement of compensation except as set forth within the contract.

(c) On-site personnel assigned to this contract may be granted access to the installation during the holidays in paragraph (a) of the clause, except as follows: the Contractor shall provide sufficient on-site personnel to perform round-the-clock requirements of critical work already in process, unless otherwise instructed by the Contracting Officer or authorized representative. If the Contractor's on-site personnel work during a holiday other than those in paragraph (a) of this clause, no form of holiday or other premium compensation shall be reimbursed as either a direct or indirect cost. However, this does not preclude reimbursement for authorized overtime work that would have been overtime regardless of the status of the day as a holiday.

(d) The Contractor shall place identical requirements, including this paragraph, in all subcontracts that require performance of work on-site, unless otherwise instructed by the Contracting Officer.

(e) When the NASA installation grants administrative leave to its Government employees (e.g., as a result of inclement weather, potentially hazardous conditions, or other special circumstances), Contractor personnel working on-site should also be dismissed. However, the contractor shall provide sufficient on-site personnel to perform round-the-clock requirements of critical work already in process, unless otherwise instructed by the Contracting Officer or authorized representative.

(f) Whenever administrative leave is granted to Contractor personnel pursuant to paragraph (e) of this clause, it shall be without loss to the Contractor. The cost of salaries and wages to the Contractor for the period of any such excused absence shall be a reimbursable item of cost under this contract for employees in accordance with the Contractor's established accounting policy.

H.10 CONTRACTORS' DUTIES AND RESPONSIBILITIES ON-SITE (GRC 52.209-90) (AUG 2006)

(a) **BADGES.** All Contractor personnel having a need to enter areas of the Glenn Research Center or Plum Brook Station shall have an identification badge or pass. This badge or pass shall be obtained at the entrance of the Glenn Research Center or Plum Brook Station. In addition to the requirements contained herein, the Contractor shall comply with Glenn Procedures and Guidelines GLPG 3730.1, Managing Conduct and Other Employee Issues, incorporated herein by reference and made a part hereof.

(1) Resident Contractors (employees with picture badges):

(i) The on-site company supervisor will notify the Main Gate Badge Clerk at PABX 3-2206 when a new employee is reporting to work. The Badge Clerk will give the company supervisor specific instructions as to how the new employee will be badged, photographed, fingerprinted, etc.

(ii) When an employee terminates and/or resigns employment, the company shall issue to the employee NASA Form C-10087, Non-NASA Separation Clearance Record. The company shall be responsible for making an inquiry of all offices listed on the form to see if the employee has any outstanding Government items. The employee shall then take this form to all offices that list he/she as having outstanding items. The employee's last stop is for the return of their Government issued I.D. badge.

(iii) The Contractor shall ensure that the terminated and/or resigned employee has returned his/her badge to the Main Gate Badge Clerk. Final clearance of a Contractor upon completion of a contract will depend in part upon accounting for all badges issued to employees during the performance of the contract. It should be recognized that security badges are Government property and any alteration or misuse of these badges may be prosecuted as a violation of Section 499, Title 18, U.S. Code.

(2) Non-Resident Contractors (employees with non-picture badges). The Contractor's on-site manager shall comply with the Badge and Property Regulations (NASA Form C-421) a copy of which will be given the Contractor's supervisors at the time of the Construction Site Showing. The Badge and Property Regulations are quoted below:

(i) Ensure that each company employee is in possession of NASA Form C-9975 prior to reporting to work for badging purposes. Employees not in possession of the above mentioned for will be delayed at the gate until such time as the company supervisor/foreman or his representative reports to the Main Gate with the appropriate paperwork for badging.

(ii) Report lost badges immediately.

(iii) Upon termination of duties, each employee's badge will be collected and returned to the Main Gate by the Contractor. Final clearance of a Contractor upon completion of a contract will depend in part upon the accounting for all badges issued to employees during the performance of the contract. It should be recognized that security badges are Government property and any alteration or misuse of these badges may be prosecuted as a violation of Section 499, Title 18, U.S. Code.

(b) NASA-OWNED PROPERTY

(1) The term "NASA-Owned Property" refers to all controlled (tagged) and non-tagged equipment, library property, security badges, computer passwords and other property furnished by the Government during the course of the contract.

(2) The Contractor shall ensure that all NASA-Owned property issued to its employees is returned and in satisfactory condition upon termination of an employee's duties. In cases where accountability for the property is transferred from one employee to another, the NASA Equipment Management System (NEMS) Control office of the Logistics Management Division must be notified. At the completion of the Government contract, all property will be returned, and the contract value will be adjusted for any property not accounted for.

(3) When access to Federal computer systems has been granted, the Contractor shall ensure that its employees comply with the clause of the contract entitled "SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION RESOURCES (NFS 1852.204-76)".

(c) EMERGENCIES

(1) The Contractor shall ensure that its employees are informed that Emergency, Fire, Medical, Safety, and Security assistance can be summoned by Dialing "911" on the Center's PABX telephone system. Emergencies are defined as incidents involving serious personal injury or damage that causes a possible hazardous condition, or any incidents that require immediate attention of the Plant Protection Department or Security. All other medical treatment is the responsibility of the Contractor.

(2) For incidents not classified as an emergency, contractor personnel shall be instructed to immediately notify the Contracting Officer's Technical Representative (COTR)(rather than dialing "911") in the event of an accident involving either personal injury or damage to property whether public or private, including damage to motor vehicles. They shall cooperate fully with the Government Accident Investigator and the Center Accident Investigation Board. This cooperation shall include interviews at the accident site and/or at a Board meeting.

(3) The Chairman of the appropriate Accident Investigation Board will notify the Contractor through the COTR as to the date and time and location of the Board meeting. The Board meetings will be held between the hours of 8:15 a.m. and 4:45 p.m. regular work days Monday through Friday.

(4) For Contractor duties where continuous manning of posts is mandatory during a work shift, the Contractor shall provide substitute personnel as required for manning these posts during the meeting of the Accident Investigation Boards.

(d) TRAFFIC

(1) The Contractor agrees to comply, and agrees to require that all of its personnel will comply with all posted traffic signs, signals and instructions of personnel assigned for traffic control and parking purposes and with the provisions of NPD 1600.2 and NHB 1620.1 incorporated herein by reference and made a part hereof.

(2) The Government reserves the right to bar from the Glenn Research Center any Contractor employee who has failed to comply with such signs, signals, instructions and the provisions of NPD 1600.2 and NHB 1620.1. The period of the bar shall be as determined appropriate by the Contracting Officer subject to the provisions of NPD 1600.2 and NHB 1620.1. The Contracting Officer will notify the Contractor in writing, setting forth the name(s) of the affected employees(s) and the time period(s) of the bar(s). No action by the Government in barring any Contractor employee from the Glenn Research Center shall be the basis for any claim whatever by the Contractor under this contract, nor shall it excuse the Contractor from complying with any provision of this contract.

(e) ON-SITE STANDARDS OF CONDUCT

(1) The Contractor's entry onto the Center shall be pursuant to fulfilling its contractual obligations, and any related activities thereto. Contractor personnel gaining access to Glenn facilities are required to certify that they meet the minimum ethical standards for entry onto a Government facility. Falsification of this certification could lead to criminal prosecution.

(2) The Contractor agrees to comply, and agrees to require that all of its personnel will comply with all applicable Federal and State statutes and regulations, NASA policy and guidance documents, Glenn policy and guidance documents, and other regulations pertaining to personal conduct while on-site. Any conduct prejudicial to the efficient operation of the Center shall be cause for removal from the Center.

(f) PROHIBITION OF FIREARMS. Firearms or weapons of any kind are strictly prohibited at the Glenn Research Center.

(g) SECURITY INCIDENTS. Theft of Property, Bomb threats, malicious damage and any other threat or violent situations shall be immediately reported to the Security Office.

(h) PROPERTY PASSES. A Contractor Property Pass (NASA Form C-702) is required for the removal of all Contractor owned property and equipment and must be presented to the gate guard upon exit. This form can be obtained from the COTR (or designee) or the Glenn employee responsible for the Contractor's presence at the Center. This form must contain a complete description of the material/equipment being removed and should be signed by the authorized Government employee. Material relating to a specific contract or purchase order must be identified by insertion of the appropriate contract/purchase order number on the pass by the COTR or designee.

(i) **AFTER-HOUR ACCESS.** During normal working hours, 7:00 a.m. to 5:30 p.m. Monday through Friday, the guards at the gates will permit your entrance and departure. At any other time (other than normal hours), advance clearance is required, and may be obtained through the Glenn/Plum Brook COTR or Inspector who will then make the request to the Main Gate Sergeant PABX 3-2204 at Glenn and 3-3221 at Plum Brook. After-hour clearances as approved by the COTR Inspector are certification to the guards as authority for admittance of a contractor during off hours, including Saturdays, Sundays, and Holidays.

(j) **CONTRACTOR IDENTIFICATION.** To avoid situations whereby the actions of onsite contractor employees can be construed as that of Government officials, the onsite Contractor shall take the following actions:

(1) Insure that employees properly display their badge at all times.

(2) Institute a policy whereby employees who, in their normal course of duties, answer telephone inquiries, participate in meetings with Government and other contractor personnel or deal with the general public appropriately identify themselves so their actions cannot be construed as that of Government officials.

(3) Institute a policy whereby business correspondence, including emails and memoranda, includes the name of the company in the signature line. Use company letterhead for internal company matters and letters/memos signed by company personnel.

(4) For onsite office space primarily occupied by company personnel, clearly indicate on the exterior of the office space the company name.

H.11 PERSONAL IDENTITY VERIFICATION (PIV) CARD ISSUANCE PROCEDURES (GRC 52.204-96) (AUG 2006)

"PIV Card Issuance Procedures", posted on the World Wide Web at:
<http://www.grc.nasa.gov/WWW/Procure/PIVCardIssuanceProcedures.doc>, are incorporated herein by reference and made a part hereof.

These PIV Card Issuance Procedures are in accordance with FAR clause 52.204-9, "Personal Identity Verification of Contractor Personnel" and NASA Procurement Information Circular (PIC) 06-01 entitled "Personal Identity Verification of Contractors", dated January 18, 2006.

H.12 Waste Reduction Reporting (June 2008)

In addition to the requirements of FAR clause 52.223-10, Waste Reduction Program, the Contractor shall submit an annual report for all operations and facilities covered by this contract about its program to promote and implement cost effective waste reduction and affirmative procurement programs required by 42 U.S.C. 6962 for all products designated in EPA's Comprehensive Procurement Guideline (40 CFR Part 247). Both the FAR 23.404(b) and NPG 8830.01 require that Government purchases of EPA-designated items contain the specified amount of recovered materials unless a request for waiver or justification documentation has been processed. The reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted December 15. The report shall be submitted at the address listed at <http://netsdata.grc.nasa.gov>. Copies of the report shall also be provided to the Contracting Officer and the GRC Environmental Management Branch. The

Contractor's programs shall comply with applicable Federal, State, and local requirements, NASA Environmental policy, and the NASA Glenn Research Center Environmental Program Manual, specifically including Section 6002 of the Resource Conservation and Recovery Act (42 U.S.C. 6962, et seq.) and implementing regulations (40 CFR Part 247). A complete listing of all categories and products designated in EPA's Comprehensive Procurement Guideline can be found at <http://www.epa.gov/cpg/products.htm> .

SECTION I - CONTRACT CLAUSES

I.1 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

Federal Acquisition Regulation (FAR) clauses:

<http://www.acqnet.gov/far/>

NASA FAR Supplement (NFS) clauses:

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

NOTICE: The following contract clauses pertinent to this section are hereby incorporated by reference:

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

| CLAUSE NUMBER | DATE | TITLE |
|---------------|----------|--|
| 52.202-1 | JUL 2004 | DEFINITIONS |
| 52.203-3 | APR 1984 | GRATUITIES |
| 52.203-5 | APR 1984 | COVENANT AGAINST CONTINGENT FEES |
| 52.203-6 | JUL 1995 | RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT |
| 52.203-7 | JUL 1995 | ANTI-KICKBACK PROCEDURES |
| 52.203-8 | JAN 1997 | CANCELLATION, RESCISSION AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY |
| 52.203-10 | JAN 1997 | PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY |
| 52.203-12 | JUN 2003 | LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS |
| 52.204-4 | AUG 2000 | PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER |
| 52.204-7 | JUL 2008 | CENTRAL CONTRACTOR REGISTRATION |
| 52.209-6 | SEP 2006 | PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT |
| 52.215-2 | JUN 1999 | AUDIT AND RECORDS--NEGOTIATION |
| 52.215-8 | OCT 1997 | ORDER OF PRECEDENCE - UNIFORM |

| | | |
|-----------|----------|---|
| | | CONTRACT FORMAT |
| 52.216-18 | OCT 1995 | ORDERING [insert contract effective date through the contract expiration date in paragraph (a).] |
| 52.216-19 | OCT 1995 | ORDER LIMITATIONS [insert (a) \$100, b(1) \$5,000,000.00, b(2) \$5,000,00.00, b(3) 5 days, (d) 2 days] |
| 52.216-22 | OCT 1995 | INDEFINATE QUANTITY [insert 1 year from the end of the contract's expiration date] |
| 52.217-8 | NOV 1999 | OPTION TO EXTEND SERVICES [insert 1 month] |
| 52.217-9 | MAR 2000 | OPTION TO EXTEND THE TERM OF THE CONTRACT [insert 60 days, 60 days, 5 years 6 months] |
| 52.219-14 | DEC 1996 | LIMITATIONS ON SUBCONTRACTING |
| 52.222-1 | FEB 1997 | NOTICE TO THE GOVERNMENT OF LABOR DISPUTES |
| 52.222-3 | JUN 2003 | CONVICT LABOR |
| 52.222-20 | DEC 1996 | WALSH-HEALEY PUBLIC CONTRACTS ACT |
| 52.222-21 | FEB 1999 | PROHIBITION OF SEGREGATED FACILITIES |
| 52.222-26 | APR 2002 | EQUAL OPPORTUNITY |
| 52.222-35 | SEP 2006 | EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS |
| 52.222-36 | JUN 1998 | AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES |
| 52.222-37 | DEC 2001 | EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS |
| 52.222-41 | NOV 2007 | SERVICE CONTRACT ACT OF 1965 |
| 52.223-5 | AUG 2003 | POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION |
| 52.223-6 | MAY 2001 | DRUG-FREE WORKPLACE |
| 52.223-10 | AUG 2000 | WASTE REDUCTION PROGRAM |
| 52.225-13 | JUN 2008 | RESTRICTIONS ON CERTAIN FOREIGN PURCHASES |
| 52.227-1 | JUL 1995 | AUTHORIZATION AND CONSENT |
| 52.227-2 | AUG 1996 | NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT |
| 52.227-14 | DEC 2007 | RIGHTS IN DATA - GENERAL |
| 52.227-19 | DEC 2007 | COMMERCIAL COMPUTER SOFTWARE LICENSE |
| 52.228-5 | JAN 1997 | INSURANCE--WORK ON A GOVERNMENT INSTALLATION |
| 52.229-3 | APR 2003 | FEDERAL, STATE, AND LOCAL TAXES |
| 52.232-9 | APR 1984 | LIMITATION ON WITHHOLDING OF PAYMENTS |
| 52.232-17 | JUN 1996 | INTEREST |
| 52.232-23 | JAN 1986 | ASSIGNMENT OF CLAIMS |
| 52.232-34 | MAY 1999 | PAYMENT BY ELECTRONIC FUNDS TRANSFER-- OTHER THAN CENTRAL CONTRACTOR REGISTRATION |
| 52.233-1 | JUL 2002 | DISPUTES |
| 52.233-3 | AUG 1996 | PROTEST AFTER AWARD |
| 52.233-4 | OCT 2004 | APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM |

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| 52.237-3 | JAN 1991 | CONTINUITY OF SERVICES |
| 52.239-1 | AUG 1996 | PRIVACY OR SECURITY SAFEGUARDS |
| 52.242-1 | MAY 2001 | NOTICE OF INTENT TO DISALLOW COSTS |
| 52.242-3 | JUL 1995 | PENALTIES FOR UNALLOWABLE COSTS |
| 52.242-13 | JUL 1995 | BANKRUPTCY |
| 52.244-2 | AUG 1998 | SUBCONTRACTS (e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts: [TBD] (k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which were evaluated during negotiations: [Wyle Labs, Verizon] |
| 52.244-6 | MAR 2007 | SUBCONTRACTS FOR COMMERCIAL ITEMS |
| 52.245-1 | JUN 2007 | GOVERNMENT PROPERTY |
| 52.249-6 | MAY 2004 | TERMINATION (COST-REIMBURSEMENT) - ALTERNATE IV |
| 52.249-14 | APR 1984 | EXCUSABLE DELAYS |
| 52.251-1 | APR 1984 | GOVERNMENT SUPPLY SOURCES |
| 52.253-1 | JAN 1991 | COMPUTER GENERATED FORMS |

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

| CLAUSE NUMBER | DATE | TITLE |
|---------------|----------|---------------------------------|
| 1852.219-76 | JUL 1997 | NASA 8 PERCENT GOAL |
| 1852.223-74 | JUL 1997 | DRUG-AND ALCOHOL-FREE WORKFORCE |
| 1852.225-70 | FEB 2000 | EXPORT LICENSES |
| 1852.237-70 | DEC 1988 | EMERGENCY EVACUATION PROCEDURES |

I.2 ALLOWABLE COST AND PAYMENT (FAR 52.216-7) (FEB 2002)

(a) Invoicing.

(1) The Government will make payments to the Contractor when requested as work progresses, but (except for small business concerns) not more often than once every 2 weeks, in amounts determined to be allowable by the Contracting Officer in accordance with Federal Acquisition Regulation (FAR) subpart 31.2 in effect on the date of this contract and the terms of this contract. The Contractor may submit to an authorized representative of the Contracting Officer, in such form and reasonable detail as the representative may require, an invoice or voucher supported by a statement of the claimed allowable cost for performing this contract.

(2) Contract financing payments are not subject to the interest penalty provisions of the Prompt Payment Act. Interim payments made prior to the final payment under the contract are contract financing payments, except interim payments if this contract contains Alternate I to the clause at 52.232-25.

(3) The designated payment office will make interim payments for contract financing on the "30th" day after the designated billing office receives a proper payment request.

In the event that the Government requires an audit or other review of a specific payment request to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the specified due date.

(b) Reimbursing costs.

(1) For the purpose of reimbursing allowable costs (except as provided in subparagraph (b)(2) of this clause, with respect to pension, deferred profit sharing, and employee stock ownership plan contributions), the term "costs" includes only:

(i) Those recorded costs that, at the time of the request for reimbursement, the Contractor has paid by cash, check, or other form of actual payment for items or services purchased directly for the contract;

(ii) When the Contractor is not delinquent in paying costs of contract performance in the ordinary course of business, costs incurred, but not necessarily paid, for:

(A) Supplies and services purchased directly for the contract and associated financing payments to subcontractors, provided payments determined due will be made:

(1) In accordance with the terms and conditions of a subcontract or invoice; and

(2) Ordinarily within 30 days of the submission of the Contractor's payment request to the Government;

(B) Materials issued from the Contractor's inventory and placed in the production process for use on the contract;

(C) Direct labor;

(D) Direct travel;

(E) Other direct in-house costs; and

(F) Properly allocable and allowable indirect costs, as shown in the records maintained by the Contractor for purposes of obtaining reimbursement under Government contracts; and

(iii) The amount of financing payments that have been paid by cash, check, or other forms of payment to subcontractors.

(2) Accrued costs of Contractor contributions under employee pension plans shall be excluded until actually paid unless:

(i) The Contractor's practice is to make contributions to the retirement fund quarterly or more frequently; and

(ii) The contribution does not remain unpaid 30 days after the end of the applicable quarter or shorter payment period (any contribution remaining unpaid shall be excluded from the Contractor's indirect costs for payment purposes).

(3) Notwithstanding the audit and adjustment of invoices or vouchers under paragraph (g) of this clause, allowable indirect costs under this contract shall be obtained by applying indirect cost rates established in accordance with paragraph (d) of this clause.

(4) Any statements in specifications or other documents incorporated in this contract by reference designating performance of services or furnishing of materials at the Contractor's expense or at no cost to the Government shall be disregarded for purposes of cost-reimbursement under this clause.

(c) Small business concerns.

A small business concern may receive more frequent payments than every 2 weeks.

(d) Final indirect cost rates.

(1) Final annual indirect cost rates and the appropriate bases shall be established in accordance with Subpart 42.7 of the Federal Acquisition Regulation (FAR) in effect for the period covered by the indirect cost rate proposal.

(2)(i) The Contractor shall submit an adequate final indirect cost rate proposal to the Contracting Officer (or cognizant Federal agency official) and auditor within the 6-month period following the expiration of each of its fiscal years. Reasonable extensions, for exceptional circumstances only, may be requested in writing by the Contractor and granted in writing by the Contracting Officer. The Contractor shall support its proposal with adequate supporting data.

(ii) The proposed rates shall be based on the Contractor's actual cost experience for that period. The appropriate Government representative and the Contractor shall establish the final indirect cost rates as promptly as practical after receipt of the Contractor's proposal.

(3) The Contractor and the appropriate Government representative shall execute a written understanding setting forth the final indirect cost rates. The understanding shall specify (i) the agreed-upon final annual indirect cost rates, (ii) the bases to which the rates apply, (iii) the periods for which the rates apply, (iv) any specific indirect cost items treated as direct costs in the settlement, and (v) the affected contract and/or subcontract, identifying any with advance agreements or special terms and the applicable rates. The understanding shall not change any monetary ceiling, contract obligation, or specific cost allowance or disallowance provided for in this contract. The understanding is incorporated into this contract upon execution.

(4) Failure by the parties to agree on a final annual indirect cost rate shall be a dispute within the meaning of the Disputes clause.

(5) Within 120 days (or longer period if approved in writing by the Contracting Officer) after settlement of the final annual indirect cost rates for all years of a physically complete

contract, the Contractor shall submit a completion invoice or voucher to reflect the settled amounts and rates.

(6)(i) If the Contractor fails to submit a completion invoice or voucher within the time specified in paragraph (d)(5) of this clause, the Contracting Officer may:

(A) Determine the amounts due to the Contractor under the contract; and

(B) Record this determination in a unilateral modification to the contract.

(ii) This determination constitutes the final decision of the Contracting Officer in accordance with the Disputes clause.

(e) Billing rates. Until final annual indirect cost rates are established for any period, the Government shall reimburse the Contractor at billing rates established by the Contracting Officer or by an authorized representative (the cognizant auditor), subject to adjustment when the final rates are established. These billing rates:

(1) Shall be the anticipated final rates; and

(2) May be prospectively or retroactively revised by mutual agreement, at either party's request, to prevent substantial overpayment or underpayment.

(f) Quick-closeout procedures.

Quick-closeout procedures are applicable when the conditions in FAR 42.708(a) are satisfied.

(g) Audit.

At any time or times before final payment, the Contracting Officer may have the Contractor's invoices or vouchers and statements of cost audited. Any payment may be:

(1) Reduced by amounts found by the Contracting Officer not to constitute allowable costs; or

(2) Adjusted for prior overpayments or underpayments.

(h) Final payment.

(1) Upon approval of a completion invoice or voucher submitted by the Contractor in accordance with paragraph (d)(5) of this clause, and upon the Contractor's compliance with all terms of this contract, the Government shall promptly pay any balance of allowable costs and that part of the fee (if any) not previously paid.

(2) The Contractor shall pay to the Government any refunds, rebates, credits, or other amounts (including interest, if any) accruing to or received by the Contractor or any assignee under this contract, to the extent that those amounts are properly allocable to costs for which the Contractor has been reimbursed by the Government. Reasonable expenses incurred by the Contractor for securing refunds, rebates, credits, or other amounts shall be allowable costs if approved by the Contracting Officer. Before final payment under this contract, the Contractor and each assignee whose assignment is in effect at the time of final payment shall execute and deliver -

(i) An assignment to the Government, in form and substance satisfactory to the Contracting Officer, of refunds, rebates, credits, or other amounts (including interest, if any) properly allocable to costs for which the Contractor has been reimbursed by the Government under this contract; and

(ii) A release discharging the Government, its officers, agents, and employees from all liabilities, obligations, and claims arising out of or under this contract, except:

(A) Specified claims stated in exact amounts or in estimated amounts when the exact amounts are not known;

(B) Claims (including reasonable incidental expenses) based upon liabilities of the Contractor to third parties arising out of the performance of this contract; provided, that the claims are not known to the Contractor on the date of the execution of the release, and that the Contractor gives notice of the claims in writing to the Contracting Officer within 6 years following the release date or notice of final payment date, whichever is earlier; and

(C) Claims for reimbursement of costs, including reasonable incidental expenses, incurred by the Contractor under the patent clauses of this contract, excluding, however, any expenses arising from the Contractor's indemnification of the Government against patent liability.

I.3 RIGHTS TO PROPOSAL DATA (TECHNICAL) (FAR 52.227-23) (JUN 1987)

Except for data contained on pages Volume 1, Mission Suitability, pages i - iv, 1 - 70, A1 - A24; Volume 2, Past Performance and Experience, pages i-ii, 1 - 49, A1 - A10; Volume 3, Cost and Pricing, pages I - ii, 1 - 18, A1 - A11; B1 - B16, it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the Rights in Data - General clause contained in this contract) in and to the technical data contained in the proposal dated April 4, 2008, upon which this contract is based.

I.4 PAYMENTS UNDER TIME-AND-MATERIALS AND LABOR-HOUR CONTRACTS (FAR 52.232-7) (FEB 2007)

The Government will pay the Contractor as follows upon the submission of vouchers approved by the Contracting Officer or the authorized representative:

(a) Hourly rate.

(1) Hourly rate means the rate(s) prescribed in the contract for payment for labor that meets the labor category qualifications of a labor category specified in the contract that are:

(i) Performed by the Contractor;

(ii) Performed by the Subcontractors; or

- (iii) Transferred between divisions, subsidiaries, or affiliated of the Contractor under a common control.
- (2) The amounts shall be computed by multiplying the appropriate hourly rates prescribed in the Schedule by the number of direct labor hours performed.
- (3) The hourly rates shall be paid for all labor performed on the contract that meets the labor qualifications specified in the contract. Labor hours incurred to perform tasks for which labor qualifications were specified in the contract will not be paid to the extent the work is performed by employees that do not meet the qualifications specified in the contract, unless specifically authorized by the Contracting Officer.
- (4) The hourly rates shall include wages, indirect costs, general and administrative expense, and profit. Fractional parts of an hour shall be payable on a prorated basis.
- (5) Vouchers may be submitted once each month (or at more frequent intervals, if approved by the Contracting Officer), to the Contracting Officer or authorized representative. The Contractor shall substantiate vouchers (including any subcontractor hours reimbursed at the hourly rate in the schedule) by evidence of actual payment and by:
 - (i) Individual daily job timekeeping records;
 - (ii) Records that verify the employees meet the qualifications for the labor categories specified in the contract; or
 - (iii) Other substantiation approved by the Contracting Officer.
- (6) Promptly after receipt of each substantiated voucher, the Government shall, except as otherwise provided in this contract, and subject to the terms of paragraph (e) of this clause, pay the voucher as approved by the Contracting Officer or authorized representative.
- (7) Unless otherwise prescribed in the Schedule, the Contracting Officer may unilaterally issue a contract modification requiring the Contractor to withhold amounts from its billings until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interests. The Contracting Officer may require a withholding of 5 percent of the amounts due under paragraph (a), but the total amount withheld for the contract shall not exceed \$50,000. The amounts withheld shall be retained until the Contractor executes and delivers the release required by paragraph (g) of this clause.
- (8) Unless the Schedule prescribes otherwise, the hourly rates in the Schedule shall not be varied by virtue of the Contractor having performed work on an overtime basis. If no overtime rates are provided in the Schedule and overtime work is approved in advance by the Contracting Officer, overtime rates shall be negotiated. Failure to agree upon these overtime rates shall be treated as a dispute under the Disputes clause of this contract. If the Schedule provides rates for overtime, the premium portion of those rates will be reimbursable only to the extent the overtime is approved by the Contracting Officer.

(b) Materials.

(1) For the purposes of this clause:

(i) Direct materials means those materials that enter directly into the end product, or that are used or consumed directly in connection with the furnishing of the end product or service.

(ii) Materials means:

(A) Direct materials, including supplies transferred between divisions, subsidiaries, or affiliates of the Contractor under a common control;

(B) Subcontracts for supplies and incidental services for which there is not a labor category specified in the contract;

(C) Other direct costs (e.g., incidental services for which there is not a labor category specified in the contract, travel, computer usage charges, etc.); and

(D) Applicable indirect costs.

(2) If the Contractor furnishes its own materials that meet the definition of a commercial item at 2.101, the price to be paid for such materials shall not exceed the Contractor's established catalog or market price, adjusted to reflect the:

(i) Quantities being acquired; and

(ii) Actual cost of any modification necessary because of contract requirements.

(3) Except as provided for in paragraph (b)(2) of this clause, the Government will reimburse the Contractor for allowable cost of materials provided the Contractor:

(i) Has made payments for materials in accordance with the terms and conditions of the agreement or invoice; or

(ii) Ordinarily makes these payments within 30 days of the submission of the Contractor's payment request to the Government and such payment is in accordance with the terms and conditions of the agreement or invoice.

(4) Payment for materials is subject to the Allowable Cost and Payment clause of this contract. The Contracting Officer will determine allowable costs of materials in accordance with Subpart 31.2 of the Federal Acquisition Regulation (FAR) in effect on the date of this contract.

(5) The Contractor may include allocable indirect costs and other direct costs to the extent they are:

(i) Comprised only of costs that are clearly excluded from the hourly rate;

(ii) Allocated in accordance with the Contractor's written or established accounting practices; and

(iii) Indirect costs are not applied to subcontracts that are paid at the hourly rates.

(6) To the extent able, the Contractor shall:

(i) Obtain materials at the most advantageous prices available with due regard to securing prompt delivery of satisfactory materials; and

(ii) Take all cash and trade discounts, rebates, allowances, credits, salvage, commissions, and other benefits. When unable to take advantage of the benefits, the Contractor shall promptly notify the Contracting Officer and give the reasons. The Contractor shall give credit to the Government for cash and trade discounts, rebates, scrap, commissions, and other amounts that have accrued to the benefit of the Contractor, or would have accrued except for the fault or neglect of the Contractor. The Contractor shall not deduct from gross costs the benefits lost without fault or neglect on the part of the Contractor, or lost through fault of the Government.

(7) Except as provided for in 31.205-26(e) and (f), the Government will not pay profit or fee to the prime Contractor on materials.

(c) If the Contractor enters into any subcontract that requires consent under the clause at 52.244-2, Subcontracts, without obtaining such consent, the Government is not required to reimburse the Contractor for any costs incurred under the subcontract prior to the date the Contractor obtains the required consent. Any reimbursement of subcontract costs incurred prior to the date the consent was obtained shall be at the sole discretion of the Government.

(d) Total cost. It is estimated that the total cost to the Government for the performance of this contract shall not exceed the ceiling price set forth in the Schedule, and the Contractor agrees to use its best efforts to perform the work specified in the Schedule and all obligations under this contract within such ceiling price. If at any time the Contractor has reason to believe that the hourly rate payments and material costs that will accrue in performing this contract in the next succeeding 30 days, if added to all other payments and costs previously accrued, will exceed 85 percent of the ceiling price in the Schedule, the Contractor shall notify the Contracting Officer giving a revised estimate of the total price to the Government for performing this contract with supporting reasons and documentation. If at any time during performing this contract, the Contractor has reason to believe that the total price to the Government for performing this contract will be substantially greater or less than the then stated ceiling price, the Contractor shall so notify the Contracting Officer, giving a revised estimate of the total price for performing this contract, with supporting reasons and documentation. If at any time during performing this contract, the Government has reason to believe that the work to be required in performing this contract will be substantially greater or less than the stated ceiling price, the Contracting Officer will so advise the Contractor, giving the then revised estimate of the total amount of effort to be required under the contract.

(e) Ceiling price. The Government will not be obligated to pay the Contractor any amount in excess of the ceiling price in the Schedule, and the Contractor shall not be obligated to continue performance if to do so would exceed the ceiling price set forth in the Schedule, unless and until the Contracting Officer notifies the Contractor in writing that the ceiling price has been increased and specifies in the notice a revised ceiling that shall constitute the ceiling price for performance under this contract. When and to the extent that the ceiling price set forth in the Schedule has been increased, any hours expended and material costs

incurred by the Contractor in excess of the ceiling price before the increase shall be allowable to the same extent as if the hours expended and material costs had been incurred after the increase in the ceiling price.

(f) Audit. At any time before final payment under this contract, the Contracting Officer may request audit of the invoices or vouchers and supporting documentation. Each payment previously made shall be subject to reduction to the extent of amounts, on preceding vouchers, that are found by the Contracting Officer or authorized representative not to have been properly payable and shall also be subject to reduction for overpayments or to increase for underpayments. Upon receipt and approval of the voucher designated by the Contractor as the "completion voucher" and supporting documentation, and upon compliance by the Contractor with all terms of this contract (including, without limitation, terms relating to patents and the terms of paragraph (g) of this section), the Government shall promptly pay any balance due the Contractor. The completion voucher, and supporting documentation, shall be submitted by the Contractor as promptly as practicable following completion of the work under this contract, but in no event later than 1 year (or such longer period as the Contracting Officer may approve in writing) from the date of completion.

(g) Assignment and Release of Claims. The Contractor, and each assignee under an assignment entered into under this contract and in effect at the time of final payment under this contract, shall execute and deliver, at the time of and as a condition precedent to final payment under this contract, a release discharging the Government, its officers, agents, and employees of and from all liabilities, obligations, and claims arising out of or under this contract, subject only to the following exceptions:

(1) Specified claims in stated amounts, or in estimated amounts if the amounts are not susceptible of exact statement by the Contractor.

(2) Claims, together with reasonable incidental expenses, based upon the liabilities of the Contractor to third parties arising out of performing this contract, that are not known to the Contractor on the date of the execution of the release, and of which the Contractor gives notice in writing to the Contracting Officer not more than 6 years after the date of the release or the date of any notice to the Contractor that the Government is prepared to make final payment, whichever is earlier.

(3) Claims for reimbursement of costs (other than expenses of the Contractor by reason of its indemnification of the Government against patent liability), including reasonable incidental expenses, incurred by the Contractor under the terms of this contract relating to patents.

(h) Interim payments on contracts for other than services.

(1) Interim payments made prior to the final payment under the contract are contract financing payments. Contract financing payments are not subject to the interest penalty provisions of the Prompt Payment Act.

(2) The designated payment office will make interim payments for contract financing on the 30th day after the designated billing office receives a proper payment request. In the event that the Government requires an audit or other review of a specific payment request to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the specified due date.

(i) Interim payments on contracts for services. For interim payments made prior to the final payment under this contract, the Government will make payment in accordance with the Prompt Payment Act (31 U.S.C. 3903) and prompt payment regulations at 5 CFR part 1315.

I.5 SUBCONTRACTS FOR COMMERCIAL ITEMS (FAR 52.244-6) (SEP 2006)

(a) Definitions. As used in this clause:

Commercial item has the meaning contained in Federal Acquisition Regulation 2.101, Definitions.

Subcontract includes a transfer of commercial items between divisions, subsidiaries, or affiliates of the Contractor or subcontractor at any tier.

(b) To the maximum extent practicable, the Contractor shall incorporate, and require its subcontractors at all tiers to incorporate, commercial items or nondevelopmental items as components of items to be supplied under this contract.

(c)

(1) The Contractor shall insert the following clauses in subcontracts for commercial items:

(i) 52.219-8, Utilization of Small Business Concerns (MAY 2004) (15 U.S.C. 637(d)(2) and (3)), in all subcontracts that offer further subcontracting opportunities. If the subcontract (except subcontracts to small business concerns) exceeds \$550,000 (\$1,000,000 for construction of any public facility), the subcontractor must include 52.219-8 in lower tier subcontracts that offer subcontracting opportunities.

(ii) 52.222-26, Equal Opportunity (APR 2002) (E.O. 11246).

(iii) 52.222-35, Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era (SEP 2006) (38 U.S.C. 4212(a)).

(iv) 52.222-36, Affirmative Action for Workers with Disabilities (JUN 1998) (29 U.S.C. 793).

(v) 52.222-39, Notification of Employee Rights Concerning Payment of Union Dues or Fees (DEC 2004) (E.O. 13201). Flow down as required in accordance with paragraph (g) of FAR clause 52.222-39).

(vi) 52.247-64, Preference for Privately Owned U.S.-Flag Commercial Vessels (FEB 2006) (46 U.S.C. Appx 1241 and 10 U.S.C. 2631) (flow down required in accordance with paragraph (d) of FAR clause 52.247-64).

(2) While not required, the Contractor may flow down to subcontracts for commercial items a minimal number of additional clauses necessary to satisfy its contractual obligations.

(d) The Contractor shall include the terms of this clause, including this paragraph (d), in subcontracts awarded under this contract.

I.6 SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION TECHNOLOGY RESOURCES (NFS 1852.204-76) (MAY 2007)

(a) The Contractor shall be responsible for information and information technology (IT) security when:

(1) The Contractor or its subcontractors must obtain physical or electronic (i.e., authentication level 2 and above as defined in National Institute of Standards and Technology (NIST) Special Publication (SP) 800-63, Electronic Authentication Guideline) access to NASA's computer systems, networks, or IT infrastructure; or

(2) Information categorized as low, moderate, or high by the Federal Information Processing Standards (FIPS) 199, Standards for Security Categorization of Federal Information and Information Systems is stored, generated, processed, or exchanged by NASA or on behalf of NASA by a contractor or subcontractor, regardless of whether the information resides on a NASA or a contractor/subcontractor's information system.

(b) IT Security Requirements.

(1) Within 30 days after contract award, a Contractor shall submit to the Contracting Officer for NASA approval an IT Security Plan, Risk Assessment, and FIPS 199, Standards for Security Categorization of Federal Information and Information Systems, Assessment. These plans and assessments, including annual updates shall be incorporated into the contract as compliance documents.

(i) The IT system security plan shall be prepared consistent, in form and content, with NIST SP 800-18, Guide for Developing Security Plans for Federal Information Systems, and any additions/augmentations described in NASA Procedural Requirements (NPR) 2810, Security of Information Technology. The security plan shall identify and document appropriate IT security controls consistent with the sensitivity of the information and the requirements of Federal Information Processing Standards (FIPS) 200, Recommended Security Controls for Federal Information Systems. The plan shall be reviewed and updated in accordance with NIST SP 800-26, Security Self-Assessment Guide for Information Technology Systems, and FIPS 200, on a yearly basis.

(ii) The risk assessment shall be prepared consistent, in form and content, with NIST SP 800-30, Risk Management Guide for Information Technology Systems, and any additions/augmentations described in NPR 2810. The risk assessment shall be updated on a yearly basis.

(iii) The FIPS 199 assessment shall identify all information types as well as the "high water mark," as defined in FIPS 199, of the processed, stored, or transmitted information necessary to fulfill the contractual requirements.

(2) The Contractor shall produce contingency plans consistent, in form and content, with NIST SP 800-34, Contingency Planning Guide for Information Technology Systems, and any additions/augmentations described in NPR 2810. The Contractor shall perform yearly "Classroom Exercises." "Functional Exercises," shall be coordinated with the Center CIOs and be conducted once every three years, with the first conducted within the first two years of contract award. These exercises are defined and described in

NIST SP 800-34.

(3) The Contractor shall ensure coordination of its incident response team with the NASA Incident Response Center (NASIRC) and the NASA Security Operations Center, ensuring that incidents are reported consistent with NIST SP 800-61, Computer Security Incident Reporting Guide, and the United States Computer Emergency Readiness Team's (US-CERT) Concept of Operations for reporting security incidents. Specifically, any confirmed incident of a system containing NASA data or controlling NASA assets shall be reported to NASIRC within one hour that results in unauthorized access, loss or modification of NASA data, or denial of service affecting the availability of NASA data.

(4) The Contractor shall ensure that its employees, in performance of the contract, receive annual IT security training in NASA IT Security policies, procedures, computer ethics, and best practices in accordance with NPR 2810 requirements. The Contractor may use web-based training available from NASA to meet this requirement.

(5) The Contractor shall provide NASA, including the NASA Office of Inspector General, access to the Contractor's and subcontractors' facilities, installations, operations, documentation, databases, and personnel used in performance of the contract. Access shall be provided to the extent required to carry out IT security inspection, investigation, and/or audits to safeguard against threats and hazards to the integrity, availability, and confidentiality of NASA information or to the function of computer systems operated on behalf of NASA, and to preserve evidence of computer crime. To facilitate mandatory reviews, the Contractor shall ensure appropriate compartmentalization of NASA information, stored and/or processed, either by information systems in direct support of the contract or that are incidental to the contract.

(6) The Contractor shall ensure that system administrators who perform tasks that have a material impact on IT security and operations demonstrate knowledge appropriate to those tasks. Knowledge is demonstrated through the NASA System Administrator Security Certification Program. A system administrator is one who provides IT services (including network services, file storage, and/or web services) to someone other than themselves and takes or assumes the responsibility for the security and administrative controls of that service. Within 30 days after contract award, the Contractor shall provide to the Contracting Officer a list of all system administrator positions and personnel filling those positions, along with a schedule that ensures certification of all personnel within 90 days after contract award. Additionally, the Contractor should report all personnel changes which impact system administrator positions within 5 days of the personnel change and ensure these individuals obtain System Administrator certification within 90 days after the change.

(7) The Contractor shall ensure that NASA's Sensitive But Unclassified (SBU) information as defined in NPR 1600.1, NASA Security Program Procedural Requirements, which includes privacy information, is encrypted in storage and transmission.

(8) When the Contractor is located at a NASA Center or installation or is using NASA IP address space, the Contractor shall:

(i) Submit requests for non-NASA provided external Internet connections to the Contracting Officer for approval by the Network Security Configuration Control

Board (NSCCB);

(ii) Comply with the NASA CIO metrics including patch management, operating systems and application configuration guidelines, vulnerability scanning, incident reporting, system administrator certification, and security training; and

(iii) Utilize the NASA Public Key Infrastructure (PKI) for all encrypted communication or non-repudiation requirements within NASA when secure email capability is required.

(c) Physical and Logical Access Requirements.

(1) Contractor personnel requiring access to IT systems operated by the Contractor for NASA or interconnected to a NASA network shall be screened at an appropriate level in accordance with NPR 2810 and Chapter 4, NPR 1600.1, NASA Security Program Procedural Requirements. NASA shall provide screening, appropriate to the highest risk level, of the IT systems and information accessed, using, as a minimum, National Agency Check with Inquiries (NACI). The Contractor shall submit the required forms to the NASA Center Chief of Security (CCS) within fourteen (14) days after contract award or assignment of an individual to a position requiring screening. The forms may be obtained from the CCS. At the option of NASA, interim access may be granted pending completion of the required investigation and final access determination. For Contractors who will reside on a NASA Center or installation, the security screening required for all required access (e.g., installation, facility, IT, information, etc.) is consolidated to ensure only one investigation is conducted based on the highest risk level. Contractors not residing on a NASA installation will be screened based on their IT access risk level determination only. See NPR 1600.1, Chapter 4.

(2) Guidance for selecting the appropriate level of screening is based on the risk of adverse impact to NASA missions. NASA defines three levels of risk for which screening is required (IT-1 has the highest level of risk).

(i) IT-1 -- Individuals having privileged access or limited privileged access to systems whose misuse can cause very serious adverse impact to NASA missions. These systems include, for example, those that can transmit commands directly modifying the behavior of spacecraft, satellites or aircraft.

(ii) IT-2 -- Individuals having privileged access or limited privileged access to systems whose misuse can cause serious adverse impact to NASA missions. These systems include, for example, those that can transmit commands directly modifying the behavior of payloads on spacecraft, satellites or aircraft; and those that contain the primary copy of "level 1" information whose cost to replace exceeds one million dollars.

(iii) IT-3 -- Individuals having privileged access or limited privileged access to systems whose misuse can cause significant adverse impact to NASA missions. These systems include, for example, those that interconnect with a NASA network in a way that exceeds access by the general public, such as bypassing firewalls; and systems operated by the Contractor for NASA whose function or information has substantial cost to replace, even if these systems are not

interconnected with a NASA network.

(3) Screening for individuals shall employ forms appropriate for the level of risk as established in Chapter 4, NPR 1600.1.

(4) The Contractor may conduct its own screening of individuals requiring privileged access or limited privileged access provided the Contractor can demonstrate to the Contracting Officer that the procedures used by the Contractor are equivalent to NASA's personnel screening procedures for the risk level assigned for the IT position.

(5) Subject to approval of the Contracting Officer, the Contractor may forgo screening of Contractor personnel for those individuals who have proof of a:

(i) Current or recent national security clearances (within last three years);

(ii) Screening conducted by NASA within the last three years that meets or exceeds the screening requirements of the IT position; or

(iii) Screening conducted by the Contractor, within the last three years, that is equivalent to the NASA personnel screening procedures as approved by the Contracting Officer and concurred on by the CCS.

(d) The Contracting Officer may waive the requirements of paragraphs (b) and (c)(1) through (c)(3) upon request of the Contractor. The Contractor shall provide all relevant information requested by the Contracting Officer to support the waiver request.

(e) The Contractor shall contact the Contracting Officer for any documents, information, or forms necessary to comply with the requirements of this clause.

(f) At the completion of the contract, the contractor shall return all NASA information and IT resources provided to the contractor during the performance of the contract and certify that all NASA information has been purged from contractor-owned systems used in the performance of the contract.

(g) The Contractor shall insert this clause, including this paragraph (g), in all subcontracts

(1) Have physical or electronic access to NASA's computer systems, networks, or IT infrastructure; or

(2) Use information systems to generate, store, process, or exchange data with NASA or on behalf of NASA, regardless of whether the data resides on a NASA or a contractor's information system.

1.7 OMBUDSMAN (NFS 1852.215-84) (OCT 2003)

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from Offerors, potential Offerors, and contractors during the preaward and postaward phases of this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman is not to diminish the authority of the contracting officer, the Source Evaluation Board, or the selection official. Further, the

ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Therefore, before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the contracting officer for resolution.

(b) If resolution cannot be made by the contracting officer, interested parties may contact the installation ombudsman:

Dr. Sunil Dutta
NASA Glenn Research Center
21000 Brookpark Road, Mail Stop 3-9
Cleveland, OH 44135-3191

Telephone: (216) 433-8844 Fax: (216) 433-2946
e-mail: Sunil.Dutta@nasa.gov.

Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the NASA ombudsman, the Director of the Contract Management Division, at 202-358-0445, facsimile 202-358-3083, e-mail james.a.balinskas@nasa.gov. Please do not contact the ombudsman to request copies of the solicitation, verify offer due date, or clarify technical requirements. Such inquiries shall be directed to the Contracting Officer or as specified elsewhere in this document.

I.8 SUBMISSION OF VOUCHERS FOR PAYMENT (NFS 1852.216-87) (MAR 1998)

(a) The designated billing office for cost vouchers for purposes of the Prompt Payment clause of this contract is indicated below. Public vouchers for payment of costs shall include a reference to the number of this contract.

(b)(1) If the contractor is authorized to submit interim cost vouchers directly to the NASA paying office, the original voucher should be submitted to:

NASA Shared Services Center (NSSC)
Financial Management Division (FMD) – Accounts Payable
Bldg. 1111, C. Road
Stennis Space Center, MS 39529
Email: NSSC-AccountsPayable@nasa.gov
Fax: 866-209-5415

(2) For any period that the Defense Contract Audit Agency has authorized the Contractor to submit interim cost vouchers directly to the Government paying office, interim vouchers are not required to be sent to the Auditor, and are considered to be provisionally approved for payment, subject to final audit.

(3) Copies of vouchers should be submitted as directed by the Contracting Officer.

(c) If the contractor is not authorized to submit interim cost vouchers directly to the paying office as described in paragraph (b), the contractor shall prepare and submit vouchers as follows:

(1) One original Standard Form (SF) 1034, SF 1035, or equivalent Contractor's attachment to:

DCAA Office
10100 Brecksville Rd., Suite A
Brecksville, OH 44141

(2) Five copies of SF 1034, SF 1035A, or equivalent Contractor's attachment to the following offices by insertion in the memorandum block of their names and addresses:

- (i) Copy 1 NASA Contracting Officer
- (ii) Copy 2 Auditor
- (iii) Copy 3 Contractor
- (iv) Copy 4 Contract administration office; and
- (v) Copy 5 Project management office.

(3) The Contracting Officer may designate other recipients as required.

(d) Public vouchers for payment of fee shall be prepared similarly to the procedures in paragraphs (b) or (c) of this clause, whichever is applicable, and be forwarded to:

NASA Glenn Research Center
Attn: Leahmarie Stervagi
Contracting Officer, MS 500-312
21000 Brookpark Road
Cleveland, OH 44135

This is the designated billing office for fee vouchers for purposes of the Prompt Payment clause of this contract.

(e) In the event that amounts are withheld from payment in accordance with provisions of this contract, a separate voucher for the amount withheld will be required before payment for that amount may be made.

I.9 MINIMUM INSURANCE COVERAGE (NFS 1852.228-75) (OCT 1988)

The Contractor shall obtain and maintain insurance coverage as follows for the performance of this contract:

(a) Worker's compensation and employer's liability insurance as required by applicable Federal and state workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when contract operations are so commingled with the Contractor's commercial operations that it would not be practical. The employer's liability coverage shall be at least \$100,000, except in States with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.

(b) Comprehensive general (bodily injury) liability insurance of at least \$500,000 per occurrence.

(c) Motor vehicle liability insurance written on the comprehensive form of policy which provides for bodily injury and property damage liability covering the operation of all motor vehicles used in connection with performing the contract. Policies covering motor vehicles operated in the United States shall provide coverage of at least \$200,000 per person and \$500,000 per occurrence for bodily injury liability and \$20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.

(d) Comprehensive general and motor vehicle liability policies shall contain a provision worded as follows:

The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy.

(e) When aircraft are used in connection with performing the contract, aircraft public and passenger liability insurance of at least \$200,000 per person and \$500,000 per occurrence for bodily injury, other than passenger liability, and \$200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least \$200,000 multiplied by the number of seats or passengers, whichever is greater.

I.10 ACCESS TO SENSITIVE INFORMATION (NFS 1852.237-72) (JUNE 2005)

(a) As used in this clause, "sensitive information" refers to information that a contractor has developed at private expense, or that the Government has generated that qualifies for an exception to the Freedom of Information Act, which is not currently in the public domain, and which may embody trade secrets or commercial or financial information, and which may be sensitive or privileged.

(b) To assist NASA in accomplishing management activities and administrative functions, the Contractor shall provide the services specified elsewhere in this contract.

(c) If performing this contract entails access to sensitive information, as defined above, the Contractor agrees to:

- (1) Utilize any sensitive information coming into its possession only for the purposes of performing the services specified in this contract, and not to improve its own competitive position in another procurement.
- (2) Safeguard sensitive information coming into its possession from unauthorized use and disclosure.
- (3) Allow access to sensitive information only to those employees that need it to perform services under this contract.
- (4) Preclude access and disclosure of sensitive information to persons and entities outside of the Contractor's organization.
- (5) Train employees who may require access to sensitive information about their obligations to utilize it only to perform the services specified in this contract and to safeguard it from unauthorized use and disclosure.

(6) Obtain a written affirmation from each employee that he/she has received and will comply with training on the authorized uses and mandatory protections of sensitive information needed in performing this contract.

(7) Administer a monitoring process to ensure that employees comply with all reasonable security procedures, report any breaches to the Contracting Officer, and implement any necessary corrective actions.

(d) The Contractor will comply with all procedures and obligations specified in its Organizational Conflicts of Interest Avoidance Plan, which this contract incorporates as a compliance document.

(e) The nature of the work on this contract may subject the Contractor and its employees to a variety of laws and regulations relating to ethics, conflicts of interest, corruption, and other criminal or civil matters relating to the award and administration of government contracts. Recognizing that this contract establishes a high standard of accountability and trust, the Government will carefully review the Contractor's performance in relation to the mandates and restrictions found in these laws and regulations. Unauthorized uses or disclosures of sensitive information may result in termination of this contract for default, or in debarment of the Contractor for serious misconduct affecting present responsibility as a government contractor.

(f) The Contractor shall include the substance of this clause, including this paragraph (f), suitably modified to reflect the relationship of the parties, in all subcontracts that may involve access to sensitive information.

I.11 RELEASE OF SENSITIVE INFORMATION (NFS 1852.237-73) (JUNE 2005)

(a) As used in this clause, "sensitive information" refers to information, not currently in the public domain, that the Contractor has developed at private expense, that may embody trade secrets or commercial or financial information, and that may be sensitive or privileged.

(b) In accomplishing management activities and administrative functions, NASA relies heavily on the support of various service providers. To support NASA activities and functions, these service providers, as well as their subcontractors and their individual employees, may need access to sensitive information submitted by the Contractor under this contract. By submitting this proposal or performing this contract, the Contractor agrees that NASA may release to its service providers, their subcontractors, and their individual employees, sensitive information submitted during the course of this procurement, subject to the enumerated protections mandated by the clause at 1852.237-72, Access to Sensitive Information.

(c)(1) The Contractor shall identify any sensitive information submitted in support of this proposal or in performing this contract. For purposes of identifying sensitive information, the Contractor may, in addition to any other notice or legend otherwise required, use a notice similar to the following:

Mark the title page with the following legend:

This proposal or document includes sensitive information that NASA shall not disclose outside the Agency and its service providers that support management activities and administrative functions. To gain access to this sensitive information, a service provider's contract must contain the clause at NFS 1852.237-72, Access to Sensitive Information.

Consistent with this clause, the service provider shall not duplicate, use, or disclose the information in whole or in part for any purpose other than to perform the services specified in its contract. This restriction does not limit the Government's right to use this information if it is obtained from another source without restriction. The information subject to this restriction is contained in pages Volume 1, Mission Suitability, pages i - iv, 1 - 70, A1 - A24; Volume 2, Past Performance and Experience, pages i-ii, 1 - 49, A1 - A10; Volume 3, Cost and Pricing, pages I - ii, 1 - 18, A1 - A11; B1 - B16.

Mark each page of sensitive information the Contractor wishes to restrict with the following legend:

Use or disclosure of sensitive information contained on this page is subject to the restriction on the title page of this proposal or document.

(2) The Contracting Officer shall evaluate the facts supporting any claim that particular information is "sensitive." This evaluation shall consider the time and resources necessary to protect the information in accordance with the detailed safeguards mandated by the clause at 1852.237-72, Access to Sensitive Information. However, unless the Contracting Officer decides, with the advice of Center counsel, that reasonable grounds exist to challenge the Contractor's claim that particular information is sensitive, NASA and its service providers and their employees shall comply with all of the safeguards contained in paragraph (d) of this clause.

(d) To receive access to sensitive information needed to assist NASA in accomplishing management activities and administrative functions, the service provider must be operating under a contract that contains the clause at 1852.237-72, Access to Sensitive Information. This clause obligates the service provider to do the following:

(1) Comply with all specified procedures and obligations, including the Organizational Conflicts of Interest Avoidance Plan, which the contract has incorporated as a compliance document.

(2) Utilize any sensitive information coming into its possession only for the purpose of performing the services specified in its contract.

(3) Safeguard sensitive information coming into its possession from unauthorized use and disclosure.

(4) Allow access to sensitive information only to those employees that need it to perform services under its contract.

(5) Preclude access and disclosure of sensitive information to persons and entities outside of the service provider's organization.

(6) Train employees who may require access to sensitive information about their obligations to utilize it only to perform the services specified in its contract and to safeguard it from unauthorized use and disclosure.

(7) Obtain a written affirmation from each employee that he/she has received and will comply with training on the authorized uses and mandatory protections of sensitive information needed in performing this contract.

(8) Administer a monitoring process to ensure that employees comply with all reasonable security procedures, report any breaches to the Contracting Officer, and implement any necessary corrective actions.

(e) When the service provider will have primary responsibility for operating an information technology system for NASA that contains sensitive information, the service provider's contract shall include the clause at 1852.204-76, Security Requirements for Unclassified Information Technology Resources. The Security Requirements clause requires the service provider to implement an Information Technology Security Plan to protect information processed, stored, or transmitted from unauthorized access, alteration, disclosure, or use. Service provider personnel requiring privileged access or limited privileged access to these information technology systems are subject to screening using the standard National Agency Check (NAC) forms appropriate to the level of risk for adverse impact to NASA missions. The Contracting Officer may allow the service provider to conduct its own screening, provided the service provider employs substantially equivalent screening procedures.

(f) This clause does not affect NASA's responsibilities under the Freedom of Information Act.

(g) The Contractor shall insert this clause, including this paragraph (g), suitably modified to reflect the relationship of the parties, in all subcontracts that may require the furnishing of sensitive information.

PART III - LIST OF DOCUMENTS, EXHIBITS
AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

J.1 LIST OF ATTACHMENTS

The following documents are attached hereto and made a part of this contract:

| | Title | Number of Pages |
|--------------|---|-----------------|
| Attachment A | Statement of Work | 26 pages |
| Attachment I | SITE SPECIFIC Safety and Health Plan (30 Days Post Award) | TBD (b)(4) |
| Attachment J | Organizational Conflicts of Interest Avoidance Plan | TBD (b)(4) |

SECTION C

Statement of Work

For

Professional, Administrative, Computational, and Engineering Services III
(PACE III)

February 11, 2008

NOTE: Highlighted area has changed since initial welcome package

1.0 PURPOSE

This Statement of Work defines the requirements for performance-based technical tasks to assist the NASA Glenn Research Center (GRC) in meeting the objectives of its research, development, and administrative activities. These requirements include, but are not limited to, technical tasks in the areas of computer science, computer and software engineering, security, networking, application development and web services.

2.0 SCOPE

The Contractor shall perform Information Technology (IT) engineering, scientific, technical, administrative, and related tasks issued hereunder by the Contracting Officer (CO), or the CO's authorized representative. These activities fall into broad categories as outlined below in 2.1 - 2.8, but need not be limited to the activities noted. Individual task order requirements may involve any or all categories of activities.

In addition, within the scope of this Statement of Work, these performance-based tasks will require either:

- a) Application of the specialized skills of a single individual;
- b) A well-defined, multi-disciplined effort;
- c) Or a well-defined, multi-disciplined effort with tasks that require close integration with tasks performed by NASA personnel to comprehensively address all facets of a complex research or technical program.

The scope of IT Security tasks encompasses but is not limited to providing an available, highly reliable and secure Center-wide IT infrastructure by conducting new security product research, recommendations and implementation, system administration, and forensic investigations. Operations will focus on meeting the security requirements of the Center while maintaining a highly available and reliable network security infrastructure. Policy and planning in accordance to Federal Information Security Management Act (FISMA) standards and regulations are within scope. Duties relating to system certification and accreditation and the preparation thereof are included in the tasks.

For each task the Contractor will also be responsible for estimating costs, establishing budgets, developing a major milestone schedule, monitoring actual progress against plan, identifying problems, and taking appropriate corrective action. These responsibilities are in

addition to the actual execution of the technical requirements. (Scope of Contract - Task order Contract - GRC52.216-98)(SEP 1992)

Tasks will encompass the broad scope of mission responsibilities at the GRC, and include: research and technology, software engineering design and development, computer engineering design and development, operations, security, and administration/management.

2.1 IT Security

2.1.1 IT Security Policy, Planning, Execution and Training

Provide support for policy and planning matters related to IT security necessary to maintain a safe, secure, and available IT infrastructure (including the network) in accordance with Federal, Agency, and Center directives.

Provide support in investigative matters as it relates to Center network anomalies and/or misuse and document the findings from these investigations.

Provide engineering, implementation, administration, analysis and other daily support in the area of IT security execution as well as program office support as it relates to customer outreach, plans/programs compliance, and Certification and Accreditation.

Provide Agency and GRC Security Awareness training. Provide support for the development, implementation, and reporting of the Agency IT Security Awareness and Training Center which includes the development of specific course content as agreed upon and funded.

2.1.2 IT Security Engineering and Operations

Provide engineering, implementation, administration, analysis, and other daily support in the area of Center wide area and local area networking as well as Center security systems deployment and support. Operations will focus on meeting the security and networking requirements of the Center while maintaining a highly available and reliable network infrastructure.

Provide support for capacity planning, assessing and responding to threats, vulnerabilities, and risks and assisting the Government in finding cost effective solutions to increase capacity and mitigate unacceptable risks. This work shall be performed while continuing to maintain a secure, available, and reliable IT infrastructure as approved by the Government.

2.2 Enterprise Services

Support for Enterprise Services including:

- Provide mainframe, operations and production control and support for the business and database applications.
- Provide directory services and account management and support for both Agency and GRC systems.
- Improve service delivery efficiency at GRC through the use of server virtualization

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- Provide engineering design, integration, analysis, administration, and operation of the GRC local and wide area networks (LANs and WANs). Work shall also include capacity planning, responding to threats, increasing capacity and mitigating risk.

2.2.1 Directory Support

Support for the Cyber Identity Management System (CIMS), Enterprise Lightweight Directory Protocol (LDAP), and the NASA Data Center (NDC) account management activities. Monitor Desk Data Base Administrator (DBA) queues and respond to problems/issues identified. Provide on-site core and extended business hour support. Support CIMS Interface Definition Agreement processes. Migrate appropriate local directories dependence to the Enterprise LDAP. Maintain directory information including updates to locator information, NASA Account Management System (NAMS) User/Sponsor quarterly updates, 2-level User organizational mappings, User/aAAO associations in IdMAX, and other Homeland Security Presidential Directive 12 (HSPD-12) related information maintenance and assurance. Support information maintenance and assurance for all CIMS related activities including IdMAX and the Enterprise LDAP. Perform data assurance checks of the Enterprise LDAP and recommend Change Requests that will support the Enterprise LDAP migrating to GRC's authoritative source for directory information.

Communicate and coordinate NDC activities relating to the Agency's Database Working Group (DBWG) activities to effected Civil Servant (CS) and Support Service Contractor (SSC) staff. All NDC activities related to mainframe software upgrades, security administration, change request reviews, and account administration issues will be coordinated and communicated with all affected GRC personnel.

2.2.2 Account Management

Support for all NASA GRC account management activities, including NASA Integrated Services Environment (NISE), IBM Tivoli Identity Manager (ITIM), and Integrated Enterprise Management Program (IEMP). Provide operational support for existing Integrated Financial Management Systems. Provide Computer Administrator and Associate Account Authorization Official (aAAO) support to GRC. Monitor Help Desk DBA queues and respond to problems/issues identified. Provide on-site core and extended business hour support.

Support information maintenance and assurance for all NASA Account Management System (NAMS) related activities including IdMAX. Support the Center's HSPD-12 effort to migrate applications into NAMS.

2.2.3 Server Consolidation

NASA continues to identify opportunities for server consolidation. Experience and expertise in the use of VMWare ESX and other server virtualization technologies will be required. Existing services currently hosted on multiple hardware platforms will be migrated to a virtualized environment where appropriate. NASA may avail itself of hosting services based upon this technology and this is considered a growth opportunity for the Contractor.

2.2.4 Data Center Support

Provide Production Control support during prime shift and certain peak business data processing cycles. Services include maintenance of mainframe job control language for

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scheduled and on-request job submission, support production applications slated for client/server migration, monitor interface file processing from core financial applications, and additional NASA-wide Sustaining Engineering Support for Agency-wide Administrative Systems (SESAAS) software support requirements

2.2.5 Network Engineering and Advanced Network Technologies

Provide design, engineering, integration, analysis, administration, and operations of Glenn local and wide area networks (LANs and WANs). The contractor shall provide these services for networking systems deemed necessary by the Government to meet the requirements of NASA projects and programs. This may include working with the Center or Agency networks as well as regional, national, or international networks.

Support to NASA in developing, engineering, or researching and providing, installing, and deploying the next generation of secure, high-performance network technologies and architectures. The contractor may be required to perform this work involving satellite, wireless, hard-wired, and hybrid communications systems. Tasks in this work area may involve working with NASA, other government organizations, industry, and academia.

2.2.6 Videoconferencing and Collaboration Facility Support

Provide administration, scheduling, operations, and maintenance of GRC videoconference and collaboration/design center facilities. Typical work includes scheduling the facility, coordinating with participants from NASA and NASA partners, operating video equipment (e.g. cameras, recording devices, microphones) during conferences and providing routine maintenance and checkout of the facility. Support of GRC videoconference and collaboration facilities outside of core hours is often required.

2.3 Enterprise Applications

Support for Enterprise Applications includes application programming and database support for all GRC applications, including mainframe, client/server and Web. Support for knowledge management and collaborative tools for the Agency and Center is also required.

2.3.1 Agency & GRC Mainframe Applications Programming

Provide application programming support for Agency and Center mainframe (Adabas/Natural), client/server and web applications. Specifically provide programming support to develop and maintain applications in Adabas/Natural, Powerbuilder/Sybase and Coldfusion/Oracle, implement code modifications, extract data, generate reports, ensure systems availability and functionality, and provide user support. Coordinate installation of Agency releases with the NASA Data Center (NDC). Provide user support in the use of query tools and create new data queries.

2.3.2 GRC Database/Applications Administration Support

Provide operating system, application server, and database administration services to GRC in support of mainframe, client/server, and web applications. Services include installation, upgrade and maintenance of software and utilities; performance monitoring and tuning; server hardware administration; preventative maintenance; system and data backups; problem diagnosis and repair; security administration; specialized printer support; and customer operational support. Provide support to application developers in the areas of

J.1(a) PACE III SOW

data modeling, database development and maintenance, and database specific programming. Create and maintain application instances across multiple environments.

2.3.3 Mainframe Support

Provide Adabas/Natural database and business mainframe support including local Adabas/Natural and Agency-Wide Application Services (AWAS).

2.3.4 Knowledge Management & Collaborative Technologies

Provide support for knowledge management and collaborative capabilities for GRC and the Agency. Specifically provide and manage the GRC Knowledge Worker Infrastructure (KWI) including: acquisition of knowledge management and collaborative systems (hardware, software and professional services), administration of KWI operational services, account management for KWI customers that span NASA centers and external partners, ensure compliance with IT security policies, customer facilitation to ensure successful adoption of KWI services, and provide customer operational support.

2.4 Emerging Technologies Support

Provide support and foresight into emerging and developing technologies, system design methodologies, and service delivery strategies to ensure that NASA remains aligned with industry trends and best practices.

Apply senior level Information Technologies systems expertise to identify new and emerging technologies and developing strategies for integrating these technologies into the NASA infrastructure. Emerging technologies for which expertise will be required include (but are not limited to) commercial and open-source operating systems and software, distributed computing, parallel computing, basic interoperability, Enterprise Architecture, Internet and high speed network technologies, large-scale IT service delivery, mobile computing, IT security, computer graphics and visualization, advanced multi-media systems, grid computing, and mass storage, primarily as applied to improving the efficiency, reliability, availability, integrity, and confidentiality of Office Automation, Information Technology Infrastructure, and Telecommunications (OAIT) systems, high end computing systems, and graphics systems. The types of tasks that would fall under this area include market research, cost analysis, enterprise architecture formulation, standards analysis and development, benchmarking, prototyping, and life cycle planning.

2.5 IT Administrative Services

Support IT Administrative Services including documentation and business case development, including organization, processing, tracking and updating. Technical writing is also required to assist with all facets of documentation production.

2.5.1 Documentation

Responsible for maintaining the organizational document repository, processing and tracking document change request(s), assuring posting of approved change(s) to designated documents. Provide ISO document administrator support for the Office of the CIO and serve as moderator for the Center's newsletter.

2.5.2 Business Case Development

Business case development will be used as a key assessment tool to evaluate the best approach to either proceed or not proceed with a particular project, plan or initiative.

2.5.3 Technical Writing Support

Responsible for providing a broad spectrum of technical writing activities including: analysis of needs, research, interviews, organization, design, writing, editing, illustrating, user-testing, production and distribution through various communications media throughout the Center.

2.5.4 Task Management System Support

Provide an automated database tool or tools for managing PACE III task orders and subtask orders. Elements include the delivery and receiving task and subtask Statements of Work (SOW), task and subtask estimates and approaches delivered to the NASA customers.

2.6 Mission Support

Work in this area will address the Information Technology (IT) requirements which are unique to the mission work being done at NASA GRC. Task will tap from a wide range of IT expertise including communications systems engineering, software engineering, high end computing, and computer graphics required for mission support for the Agency and GRC.

2.6.1 Communications Systems Engineering

Provide architecture development, analysis, design, and engineering to meet a wide variety of communications requirements for IT security and networking. Support hardware development activities in GRC communications test beds. Review lower level communication system requirements documents for correct compliance and flow-down from higher level documents. Special attention is required regarding system/ communication security for both network and data involving transmission, protection, access, and integrity. Activities will address delay/disruption tolerant networking protocols and performance optimization/ characterization of industry data communications protocols for Internet access to space-based networks.

Support Aeronautics, Space Exploration, and GRC's Advanced Computing and Communications programs and projects including Aviation Safety's Integrated Vehicle Health Management, National Airspace System's Future Communications Study, Federal Air Marshal Service, and AEVA. Terrestrial, space exploration, and mobile communication architectures will include ground stations, networking, balloons, rovers, and space suits. Aeronautics and space-based networks will include satellites, space and aeronautic platforms, and interoperable satellite/terrestrial mobile communication networks.

The skills and knowledge required for this task include knowledge of space and terrestrial voice and high data rate communications systems, network architectures which support IP routing schemes, routing and firewall technologies, and data encryption schemes.

2.6.2 Software Development and Supporting Activities

Provide requirements definition, analysis, design, implementation, testing, administration, maintenance, and documentation for various software development activities. All activities shall be accomplished in compliance with NASA and GRC Software Engineering Requirements, such as object-oriented design and implementation and strong configuration management. Supported systems will include codes in multiple languages executing locally and on distributed platforms running various operating systems.

The skills and knowledge required to do this task include the ability to rapidly prototype software systems using commercially available software. Knowledge in software systems engineering and requirements development are needed.

2.6.3 High End Computing and Computer Graphics/Computational Servers

Provide support for the centralized and/or distributed state-of-the-art High-Performance Computing (HPC) and visualization facilities which are used by GRC researchers and engineers. Duties can include requirements analysis, performance analysis, planning and installation of shared memory systems and clusters of systems, evaluation of computing hardware and networks, programming, software engineering, software support, systems administration, and hardware support.

The areas of expertise include Linux based operating systems, Unix, systems administration, Macintosh systems, cluster computing, shared memory computing, grid computing, graphics programming (e.g. ray tracing and OpenGL), parallel programming, object oriented and structured programming, state of the art graphics hardware, C/C++/Fortran77/Fortran90 languages and compilers, advanced multimedia systems, job schedulers, high speed networks, high speed mass storage, and installation and support of open-source and commercial software.

2.7 Test Facility Support

IT support for classified and unclassified experimental test facilities at GRC and Plumbrook Station, including installation, maintenance, calibration, operation and specialized administration and development of data acquisition systems.

Provide data acquisition, transfer, and output services for dedicated steady-state, real-time data acquisition and display systems for 50 plus open, limited access, or classified experimental test facilities at GRC and/or Plumbrook Station supporting Aeronautics and Space programs with varying security requirements. Provide hardware/software installation and removal, preventative maintenance and calibration, remedial maintenance, hardware configuration management, operations, software configuration management, data backups and recovery, software maintenance, engineering revision maintenance, specialized system administration, and specialized application development. Coordinate professional and technician groups supporting testing operations.

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Procure and track software and hardware and/or software and hardware maintenance agreements or licenses for a variety of information technology (IT) equipment computer platforms as required.

Provide on-site operations and maintenance support for remote business (data) systems facility related IT equipment systems as required.

2.8 Web Services

Provide services essential for support, development, training, tracking and maintenance of GRC Central Web and GRC's interface to the NASA Portal. Review of portal web pages is required to ensure compliance with Federal and Agency standards and accessibility requirements.

2.8.1 Central Web Services

Provide support, development and maintenance functions to the Office of the CIO's Central Web Services Team. The primary area of support is administration support for hardware and software tools used by the Central Web Services Team and GRC Web curators to develop and maintain Web sites. Other tasks include maintaining access control on the Central Web Server; supporting service architecture development; investigation, installation, evaluation, testing and piloting of enhancements, replacements or additions to Web development and maintenance products; and recommending hardware/software/network configuration changes.

2.8.2 NASA Public Portal

Provide web page development, content reviews, and training in support for GRC Web content hosted in the NASA Public Portal infrastructure. Ensure pages are compliant with Federal and Agency internet policies.

2.8.3 Web Site Development/Maintenance

Design, develop and maintain Web sites for GRC organizations. Ensure Web sites are compliant with Federal, Agency, and Center Internet policies. Perform reviews of Web sites to ensure compliance with Federal, Agency, and Center Internet policies including accessibility.

3.0 SPECIFIC WORK REQUIREMENTS

The work shall be accomplished primarily at GRC. In case of growth, some work may need to be performed offsite. Travel to other locations may be required. Task orders will provide the availability of Government facilities, laboratories, equipment, and support services.

All work performed under this contract shall be in accordance with established and applicable Federal, Agency and GRC documents including BMS procedures and directives for requirements, standards, specifications, and instructions such as environmental impact statements, safety, reliability, quality assurance, security, and engineering standards.

Listed below are typical work areas to be performed under this contract. The list is not all-inclusive and the Government reserves the right to require the performance of work considered within 2.0 Scope. The Government will issue specific task orders following

selection. It should be recognized that the Government reserves the right to issue tasks for any or all of the scope of work indicated in this statement of work. There is no guarantee that specific tasks will be written for all elements listed below.

The following work requirements are not listed in priority order and no significance should be implied by their relative position in this document. Some requirements are more easily explained or documented in a brief format and others have been described more fully. No assumptions regarding the size or importance of the effort should be made based on these work requirements. Section 5E Cost analysis and Discounts of the RFQ provides a better indication of the size of the potential effort.

For the purpose of this SOW, the following definitions will apply. Continuous operation coverage will be used to describe on-site support expected to be performed 24 hours per day, 7 days per week including holidays. Core hours will be used to describe coverage expected from 7:00 AM until 5:30 PM. On-call support will be used to describe support that exists when a contractor's physical presence is not necessary, but they must be reachable via telephone or paging device such that they can provide technical input. In many cases, it is also required that they be available throughout the "on call support" period to come in to the work location and provide physical support. As-needed support will be used to describe support that is not required on a full time or on a routine pre-scheduled basis but is provided as required to support the project when requested by the TM or NASA. Desk-side support will be used to describe coverage that will be provided to a customer in which the contractor must be physically present at the customer's work location during a specific event or time. Extended business hours are defined as business hours that occur beyond the core hours. References to GRC include both Glenn Research Center at Lewis Field and Plumbrook Station.

3.1 IT Security

3.1.1 IT Security Policy, Planning, Execution and Training

- 3.1.1.1 Operate, administer, and maintain the GRC network security environment, ensuring continuous operation coverage. This environment includes but is not limited to intrusion detection systems, vulnerability scanning tools, and forensics tools.
- 3.1.1.2 Work with NASA to meet changing requirements. Propose and test enhancements to NASA's network security environment and implement these enhancements when and approved by the government.
- 3.1.1.3 Identify equipment/software/services necessary for NASA GRC, and with appropriate government approval, obtain quotes from vendors, procure, and deliver necessary products to NASA GRC.
- 3.1.1.4 Ensure that a capability is in place to meet or exceed uptime and log retention requirements for devices on the GRC perimeter.
- 3.1.1.5 Monitor critical logs for abnormal activity and security threat.
- 3.1.1.6 Generate and distribute automated daily summary reports to the appropriate government and contractor personnel. Additionally, reports to GRC will be

provided when threats are noticed as well as the appropriate external parties.
Provide data/logs or a secure interface to the information in response to requests from appropriate parties.

- 3.1.1.7 Provide requested technical documentation for existing and future network security system designs.
- 3.1.1.8 Keep abreast of latest security threats and respond to any threats to the GRC network with continuous operation coverage and take the appropriate actions to notify the designated government employee of threats. Take the necessary steps to prevent further damage or intrusion. Actions should be initiated within 6 hours of discovery.
- 3.1.1.9 Conduct forensic investigations of suspected IT Security incidents under the authority of the Center's IT Security Manager or GRC Incident Response Coordinator. This may include, but is not limited to, the following: monitoring the network, examining and mirroring hard drive files, examining email files, reviewing network and firewall logs, disconnecting users' computers from the network, documenting the IT Security investigation, and providing testimony if required. The government will document the objective investigative tasks required of the technical personnel. Excluded from this task are any IT Security incidents categorized by the government as within the genre of computer and systems mis-use.
- 3.1.1.10 Provide system logs related to misuse cases.
- 3.1.1.11 Perform vulnerability scanning and reports to meet the Agency Quarterly scanning requirements. This will consist of monthly scans of the Agency list and quarterly reports.
- 3.1.1.12 As directed by the Government under special circumstances, work with GRC customers to provide risk-mitigated solutions that meet their requirements while maintaining the security posture of GRC.
- 3.1.1.13 Track and assist GRC Organizations in the Security Planning process. Develop and maintain Center Master IT Security Plans and associated subordinate plans.
- 3.1.1.14 Work with Organizational Computer Security Representatives (OCSRs) to improve the overall security knowledge and posture of NASA GRC through layered defense strategies applied to systems within the GRC Network Perimeter.
- 3.1.1.15 Facilitate and/or conduct IT security risk assessments for GRC organizations, as requested.
- 3.1.1.16 Provide Configuration Management efforts as they relate to the Center IT Security Program.
- 3.1.1.17 Respond to data calls and review policies from the Agency, other government organizations, and civilian authorities.
- 3.1.1.18 Conduct security reviews. Perform security controls audits.

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- 3.1.1.19 Perform analysis of FISMA, NPR, NIST, or other applicable documents or standards.
- 3.1.1.20 Support Certification and Accreditation throughout its lifecycle, particularly in the Continuous Monitoring phase.
- 3.1.1.21 Maintain an understanding of general IT security requirements set forth under FISMA, NIST, and other Government security standards.
- 3.1.1.22 Maintain an understanding of learning and training concepts necessary for the development of IT Security courses. Provide Agency and GRC Security Awareness training as directed by the Government. This may include computer-based, classroom, or individualized instruction. Provide support for the development, implementation, and reporting of the Agency IT Security Awareness and Training Center which includes the development of specific course content as agreed upon and funded. Track the completion of IT security training across the Agency.

3.1.2 IT Security Engineering and Operations

- 3.1.2.1 Operate, administer, and maintain the GRC network security perimeter, ensuring that the firewall system is supported with continuous operation coverage. This includes but is not limited to the firewall, border routers, and proxy servers.
- 3.1.2.2 Configure and provision appropriate ports on the firewall for access to the ESN, open network, wireless, and GRC intranet.
- 3.1.2.3 Administer the SSH and SSL-VPN infrastructure in accordance with Government policy, including the GRC SSH proxy service, the ACE Servers/SecurID systems, and Services on the SSL-VPN.
- 3.1.2.4 Work with NASA to meet changing requirements. Propose and test enhancements to NASA's network security environment and implement these enhancements when and approved by the government.
- 3.1.2.5 Identify equipment/software/services necessary for NASA GRC, and with appropriate government approval, obtain quotes from vendors, procure, and deliver necessary products to NASA GRC.
- 3.1.2.6 Assure that a capability is in place to meet or exceed uptime and log retention requirements for devices on the GRC perimeter.
- 3.1.2.7 Monitor critical logs for abnormal activity and that may adversely impact operations of the GRC perimeter.
- 3.1.2.8 Provide requested technical documentation for existing and future network security system designs.
- 3.1.2.9 Provide risk-mitigated solutions that meet their requirements while ensuring the security of the GRC IT Infrastructure. Examples include Citrix server application

hosting and user management and VMWare systems management and virtual host implementation.

- 3.1.2.10 Monitor the ODIN Helpdesk Security queue and disposition trouble tickets assigned to that queue. Provide ODIN Remedy Queue support for users interacting with Network Security systems.

3.2 Enterprise Services

3.2.1 Directory Support

- 3.2.1.1 Monitor Remedy Help Desk DBA queues, respond to problems/issues, including providing on-site core and extended business hour support. Implementation and support for the CIMS Interface Definition Agreement and the Enterprise LDAP shall be provided according the Center and Agency policies and projects. Information assurance activities include, but are not limited to, maintaining directory information such as locator information, NAMS User/Sponsor associations, organizational mappings, and other HSPD-12, Agency, and Center related directory information.
- 3.2.1.2 Support Agency directory related initiatives by participating in telecons and face-to-face meetings and supporting the preparation of documents and presentation materials. Participate in the OCIO Configuration Control Board processes. Support the decommissioning of legacy directory environments that are migrating to newer and consolidated Center and Agency environments, and the Agency Change Request processes for the new environments.
- 3.2.1.3 Provide problem diagnoses, repair, upgrades, and preventative maintenance to Center and Agency level directories as required. Identification and resolution of problems shall be provided both locally and to the NASA Data Center (NDC) in problem assessment and resolution. Assistance in network monitoring to assure GRC customers obtain maximum availability and support shall be provided. Investigations into possible malicious incidents shall be provided by the contractor, including findings reports to the OCIO and IT Security specialists.

3.2.2 Account Management

- 3.2.2.1 Perform User Management functions as specified for each system, including the addition, modification and deletion of user accounts. Perform role management as specified for each system including the addition, modification, and deletion of roles. Perform password resets for all designated IEMP related systems (Core Financial, Business Warehouse, Travel Manager, iView Portal and WebTads). Perform daily administrative functions such as monitor reports to lock accounts for inactivity, comply with audit reporting requests, and coordinate separation of duties (role conflicts). Provide support to fax System Access Requests (SARs) to the competency center.
- 3.2.2.2 Monitor the IEMP-related Remedy Queue(s) in support of IEMP System security management and respond to user problems/requests identified therein. Provide user support and problem resolution during core and extended business hours.

- 3.2.2.3 Maintain and support the installation, administration and maintenance of IBM Tivoli Identity manager (ITIM) products including but not limited to: Install and maintain the ITIM suite of products (ITIM v4.6, DB2 v8.2, Directory Integrator v6, Websphere v5.1 and IBM Directory Server v6). Support and maintain the ITIM Windows 2003 systems. Maintain system interface routines to support all ITIM services and workflows. Maintain and support Brio USERQ and NAMEQ functions in support of ITIM. Generate ITIM custom reports to the system administrators to support account management activities. Maintain the ITIM email distribution with ODIN and mail teams.
- 3.2.2.4 Offer Requesters, Sponsors, Approvers, Provisioners and aAAO account management training. Update the aAAO Homepage on the Web as required.
- 3.2.2.5 Sign Separation Clearance forms, and also fill out a Computer Access Termination Statement, to be given to the person's administrator, for employees who are retiring or resigning from the Center. Coordinate and expedite the summer student userid access process as well as disseminate information to all administrators, as needed.
- 3.2.2.6 Support Agency account management related initiatives by participating in telecons and face-to-face meetings and supporting the preparation of documents and presentation materials. Participate in the OCIO Configuration Control Board processes. Support the decommissioning of legacy account management environments that are migrating to newer and consolidated Center and Agency environments and the Agency Change Request processes for new environments.

3.2.3 Server Consolidation

- 3.2.3.1 Survey existing servers and services and design and implement a virtualized environment using VMWare ESX (or similar) technology which will enable more efficient utilization of server hardware, promote server consolidation by reducing the overall service provisioning footprint, and reduce costs.
- 3.2.3.2 Provide a local hosting service. In an effort to provide a secure and efficient operating environment for GRC organizations to host local web services without extensive knowledge or effort related to the operating system, a configured, hosted, and maintained instance of the Microsoft Windows Server 2003 (or subsequent NASA-STD-2804 Microsoft Server software version) in a Virtual Machine (VM) environment implemented with VMWare ESX server (or the most recent VMWare equivalent) will be designed. The server will be maintained according to all requisite Federal and Agency IT configurations and support processes including: System Security Certification & Accreditation, NIST Configuration Standards, NASA Availability Requirements, and Data-at-Rest Encryption Requirements.

3.2.4 Data Center Support

- 3.2.4.1 Oversee the mainframe processing of approximately 80 miscellaneous MVS jobs; including Interface file processing, AMS and Headquarters reporting, as per documented schedule.

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- 3.2.4.2 Maintain documentation for all MVS jobs and applications, identifying frequency, job dependencies, output distribution and corrective procedures.
- 3.2.4.3 Maintain datasets and PDS libraries associated with all MVS systems including maintenance of storage and execution of backup procedures.
- 3.2.4.4. Maintain direct telephone and e-mail correspondence with civil servant and support service contractor personnel on a regular basis.
- 3.2.4.5 Provide computer operations support including a wide range of responsibilities and consist of two shifts of operator coverage for a sixteen hour day, Monday through Friday. Operators verify the time displayed on the two central time source clocks, and verify that the two clocks readings are identical and current.
- 3.2.4.6 Participate in Configuration Control Board (CCB) meetings and communications to coordinate all computer hardware and software system upgrades and maintenance activities for GRC.

3.2.5 Network Engineering and Advanced Network Technologies

- 3.2.5.1 No current work elements proposed – maintain as placeholder in scope

3.2.6 Videoconferencing and Collaboration Facility Support

- 3.2.6.1 Provide full-time staff during core hours to schedule all GRC videoconference and collaboration facilities under the responsibility of the Office of the CIO.
- 3.2.6.2 Provide a common, easy-to-use, efficient method for GRC customers to schedule videoconferences or collaboration sessions at CIO managed rooms.
- 3.2.6.3 Maintain the established government web-based calendar (e.g. WebEvent) that gives GRC users the ability to view room availability or confirm scheduled conferences
- 3.2.6.4 Coordinate the scheduling of conferences with participants from NASA and NASA partners and with the NASA videoconference system. Provide a reminder to customers one to two days prior to their conference.
- 3.2.6.5 Schedule conferences via the NASA on-line scheduling system to reserve time slots and network bandwidth with the NASA contracted communications carrier.
- 3.2.6.6 Perform conference set-up at CIO managed videoconference rooms. This includes connecting the room to the conference prior to actual conference start time, insuring that all equipment is functioning properly and taking action to repair problems or coordinate problem resolution. After the conference is complete, ensure that the room is disconnected from the conference.
- 3.2.6.7 Provide on-site support as needed for operations of the IDAC (Integrated Design and Analysis Center) facility in Research Analysis Center (RAC). Responsibilities include conference connect/disconnect, configuring and/or operating the room equipment, and being available as needed to address problems.

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- 3.2.6.8 Provide on-site operations staff during conferences at the primary GRC videoconference facility in Administration Building. Provide desk-side support to GRC Senior management who frequently use this facility.
- 3.2.6.9 Provide a method for on-call support for facility customers to contact task staff to request assistance during a videoconference.
- 3.2.6.10 Provide staff to perform or coordinate troubleshooting and problem resolution during videoconferences at facilities other than the Administration Building.
- 3.2.6.11 Support agreements as established by the Government to share use of videoconference facilities not under the control of the CIO.
- 3.2.6.12 Conduct periodic maintenance on videoconference equipment not covered by other maintenance contracts. Provide a current/historical status of maintenance actions to the Government upon request.
- 3.2.6.13 Compile and submit monthly reports to the government showing the utilization of each room and the customers for all rooms. Compile and submit weekly highlights as needed to bring specific concerns or issues to the attention of the task monitor.

3.3 Enterprise Applications

3.3.1 Agency & GRC Applications Programming

- 3.3.1.1 Provide support and maintenance for Agency-wide Application Services (AWAS) mainframe applications in their existing environments. Provide support to ensure systems availability during core and extended business hours and during critical deadline processing. Support installation of AWAS releases resolving any unique program processing problems that arise during the installation of new releases. Provide support for extracting data from AWAS applications and generating reports. Provide support for replacement of applications by the Agency Integrated Enterprise Management Program, eGov and other initiatives including, but not limited to, data analysis, data mapping, data conversion, and documentation. Maintain existing application documentation.
- 3.3.1.2 Provide support and maintenance for GRC Adabas/Natural mainframe applications in their existing environments ensuring that system functionality is maintained during core and extended business hours. Provide programming support as required to maintain the applications and data integrity within those applications and resolve data interface issues. Provide programming support to implement modifications per customer requirement changes. Provide programming support for extracting data from applications and generating reports. Maintain existing application documentation. Provide support for replacement of applications by the Agency Integrated Enterprise Management Program, eGov and other initiatives including, but not limited to, data analysis, data mapping, data conversion, and documentation. For read-only Center Adabas/Natural applications, assure applications are available in read only mode. No programming support is expected, except system verification during system software upgrades.

- 3.3.1.3 Provide Hyperion Application Support to Hyperion query users. Create and modify queries. Maintain Natural extract programs that feed the Hyperion/Sybase tables.
- 3.3.1.4 Provide support and maintenance for GRC Powerbuilder database applications in their existing client/server environments ensuring that system functionality is maintained during core and extended business hours. Provide programming support as required to maintain the applications and data integrity within those applications and resolve data interface issues. Provide programming support to implement modifications per customer requirement changes. Provide support for replacement of applications by the Agency Integrated Enterprise Management Program (IEMP), eGov; and other initiatives including, but not limited to, data analysis, data mapping, data conversion, and documentation. Maintain existing application documentation.
- 3.3.1.5 Provide support and maintenance for web-based Coldfusion database applications and documentation in their existing environments ensuring that system functionality is maintained during core and extended business hours. Develop and maintain new web-based client-server applications including, but not limited to, requirements analysis, design, data modeling, coding, testing, configuration management, and release support. For new applications develop and maintain applications and associated documentation per GLPR 7150.1, OCIO requirements, IT security and privacy, and other applicable internet policies such as accessibility.

3.3.2 GRC Database and Application Environments: System Administration and Operations Support

- 3.3.2.1 Provide operating system, application server, web server and database administration services in support of the development, implementation, and maintenance of mainframe and non-mainframe client/server, Web, and Hyperion applications, including support for Hyperion querying and reporting software. Provide planning, documentation, and overall support for development, test, and production environments. Database systems include Oracle and Sybase Operating systems include Windows 2000/2003 and Sun Solaris Unix. Services include, but are not limited to: installation support, connectivity support, upgrades, customer operational support, problem diagnosis and resolution, preventive maintenance, system and data backups, server hardware administration, specialized printer support, security administration, hardware and software upgrade research and implementation, and documentation maintenance.
- 3.3.2.2 Provide database development and maintenance services in support of the development, implementation, and maintenance of non-mainframe client/server, Web and Hyperion applications, including, but not limited to, data modeling support, database schema development and maintenance, performance monitoring and tuning, security administration, and problem diagnosis and resolution. Create and maintain application instances across multiple environments.
- 3.3.2.3 Provide life cycle support of enterprise and business application software in support of non-mainframe client/server, Web and Hyperion applications development. This includes, but is not limited to: software development tools, standard application development suites, and configuration management tools. Support business application software distribution on GRC's domain environment. Research hardware

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and software upgrades. Maintain system and procedures documentation. Provide ColdFusion and client/server application development and maintenance support, including migrating applications across environments, coordination with other GRC IT groups on networking, access, and other application-related issues, performance monitoring and tuning of ColdFusion software, and problem diagnosis and resolution.

3.3.3 Mainframe Support

- 3.3.3.1 Provide database administration services to support maintenance and possible modification of existing NASA GRC mainframe business applications.
- 3.3.3.2 Provide support for GRC mainframe customers including software maintenance and support, system troubleshooting, and problem resolution.
- 3.3.3.3 Monitor Remedy Help Desk DBA queues, respond to problems/issues identified therein within 8 hour upon receipt of call and provide an estimated resolution time within 3 days.
- 3.3.3.4 Provide on-site core and extended business hour support on an as-needed basis.
- 3.3.3.5 Install, maintain and support existing GRC unique mainframe and AWAS applications in development, test and production environments. Perform database administration and maintenance functions including but not limited to security administration, problem diagnosis and repair, preventive maintenance, backup, and upgrades.
- 3.3.3.6 Support the installation and maintenance of software and utilities in support of existing databases, including support for the SAGA ancillary product suite.
- 3.3.3.7 Provide support to identify and resolve Adabas/Natural printing issues. Perform all Adabas/Natural database and application testing in support of NDC mainframe upgrades and initiatives, including, but not limited to the following areas but not limited to MVS OS, CICS, and disaster recovery.
- 3.3.3.8 Support decommissioning of Adabas/Natural Applications (IEMP & non-IEMP) and participate in and attend meetings such as the Database Working Group (DBWG), CCB, NASA Data Center (NDC) Technical Interchange Meeting (TIM).
- 3.3.3.9 Install, configure, and maintain software development tools in support of application developers which include but not limited to maintain, process, and track daily hardcopy and electronic DBA requests.
- 3.3.3.10 Assist the NDC in the assessment, including determination of problem origin, and resolution of mainframe production problems.

3.3.4 Knowledge Management & Collaborative Technologies

- 3.3.4.1 Provide Knowledge Worker Infrastructure (KWI) application administration including: application level design of services and supporting hosting infrastructure; design and implementation of application level objects including team rooms, databases, document types, and workflows; implementation of common objects and processes via templates, doc types, and other application level object reuse; application installation; application version upgrades; application problem resolution; application backup and restore; application security plan; and implementation of application security controls. Evolve KWI application tool set as NASA customer requirements and KWI project priorities dictate.

- 3.3.4.2 Provide KWI customer account management including: support for NASA personnel and external partners, integration with emerging Agency account management and authentication infrastructure, support for local passwords, Agency Active Directory, and RSA SecurID authentication mechanisms.
- 3.3.4.3 Support KWI adoption by GRC and the Agency including: KWI web site(s) maintenance, presentations to existing and prospective customer groups, support customer adoption process of KWI tool set, provide customer forums that include training, and solicit customer feedback via surveys and other mechanisms.

3.4 Emerging Technologies Support

- 3.4.1 Analyze methodologies, federal guidelines, and tool kits for the development of enterprise IT Architecture for NASA and GRC and the maintenance of the resulting documentation. Interview the NASA CIO or designates and GRC CIO or designates for the determination of scope, and interview identified business process owners, enterprise and center IT system owners, and implementers.
- 3.4.2 Perform benchmarking and best practice analysis of IT management and implementation methodologies used by NASA.
- 3.4.3 Analyze NASA business processes for the purpose of process improvement (including re-engineering) through the application of IT.
- 3.4.4 Research, recommend, promote, advertise, and revise Agency standards for Windows, Unix, and Apple desktop system interoperability in support of Agency/Center CIO initiatives. This includes, but is not limited to standards for workstation configuration, host level security, system administration, and interoperability with other desktop environments.
- 3.4.5 Investigate and recommend state-of-the-art high performance computing and graphical visualization systems, networks, and software.
- 3.4.6 Assist in procurement, installation, administration, and support of high performance computing systems and graphical visualization systems.
- 3.4.7 Provide support to Glenn Research Center's Office of the CIO in various roles and responsibilities assigned by NASA HQ for the management of IT architecture and standards. Responsibilities include full life cycle requirements analysis, justification of new initiatives, advocacy, solutions and implementation planning, procurement planning, standards development and measuring, and improving return on investment for large scale implementations.
- 3.4.8 Assists in identifying areas where IT costs can be reduced and controlled through business cases, and works with Center and Agency teams to develop and implement schedules for which IT standards and guidelines will be issued.
- 3.4.9 Track and provide consultation on development of the architecture and provide technical expertise as required. Maintain an in-depth awareness of the NASA IT Enterprise Architecture and identify opportunities for leveraging the standards and architecture efforts of the GRC support team in support of the enterprise architecture.

- 3.4.10 Evaluate emerging technologies for their ability to integrate into the NASA environment. Recommend technologies that will maximize NASA's investment by having the greatest overall impact to the environment. Propose any necessary modifications to the environment to accommodate recommendations.

3.5 IT Administrative Services

3.5.1 Documentation

- 3.5.1.1 Maintain the organizational document repository, processing and tracking document change request(s) and ensure posting of approved change(s) to designated documents. Notify affected users of document changes and dispose of invalid or obsolete master copies of controlled documents in accordance with GRC policy. Maintain records for each change request and ensure that all change request records are archived in accordance with GRC policy. Provide ISO document administrator support for the Office of the CIO and serve as moderator for the Center's newsletter (Aerospace Frontiers).

3.5.2 Business Case Development

- 3.5.2.1 Develop the business case based on economic factors including the current cost of doing business, developing alternative approaches, estimating the likely cost and developing potential risks as well as likely benefits.

3.5.3 Technical Writing Support

- 3.5.3.1 Provide support for a broad spectrum of technical writing activities including: analyzing needs, researching, interviewing, organizing, designing, writing, editing, illustrating, user-testing, producing, and distributing through various communications media such as the Internet and Center's Intranet, closed-circuit television announcements, e-mail, newsletters, and brochures. Coordinate with authors for editing, clarity, and usability. Provide Code V ISO document administrator support. Provide moderator support for the daily labwide electronic bulletin board (Today@Glenn) by ensuring that the text of the final document is easy-to-read, user-friendly, with no editorial errors.

3.5.4 Task Management System Support

- 3.5.4.1 Provide an automated database tool or tools for managing PACE III task orders, subtask orders and Statements of Work (SOW). Provide the capability to input and update these documents. Provide a method for task and subtask estimates and approaches to be delivered to the NASA customers and estimates to be approved or rejected. Provide a method for amending tasks.
- 3.5.4.2 Provide the capability to track applied funding, costs and balances for tasks and sub-tasks available to task monitors.
- 3.5.4.3 Provide a search capability that will support enhanced contract performance (e.g. Technical Incentives Process) and contract tracking and reporting (e.g. 533 Reporting).

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- 3.5.4.4 Provide the capability for electronic approval authority, as well as access control and security.
- 3.5.4.5 Provide the Government with a download of the data every 3 months in a format that is in the best interest of the Government.

3.6 Mission Support

3.6.1 Communication Systems Engineering

- 3.6.1.1 Insert advanced space communications technology into NASA missions through the engineering of advanced space-based communication architectures and corresponding system verification experiments and demonstrations. Perform corresponding engineering, test, integration, and validation activities which may include communication architecture concept and component feasibility analyses; antenna design and tracking schemes, technology, and performance testing; safety related analyses and tests, component and system hardware and software design; and flight payload integration and test activities.
- 3.6.1.2 Perform Internet Protocol Research and Development over satellite and other wireless links using GRC developed testbeds and emulation environments. The work shall include protocols and experiment design, execution, analysis, and reporting. This will include participation in the Internet Engineering Task Force (IETF) and other standards making bodies where appropriate.
- 3.6.1.3 Provide support in the development of reliable multicast technology using satellite communications analysis, evaluation, and testing. This research and developmental effort is directed toward new and existing geosynchronous and low earth orbit satellite systems utilizing reliable multicasting hardware and software applications and technologies. Support the verification and "proof of concept" of multicast distribution in a hybrid context to shorten and flatten the multicast distribution tree and avoid long sets of network routers. Support acquisition, analysis, and reporting of data gathered during the experimental phase of the multicast traffic distribution utilizing reliable multicast technology applications over satellite communications links.
- 3.6.1.4 Participate in the Telecommunications Industry Association (TIA) and other standard bodies' specification process for the purpose of furthering NASA's interests in the development of Common Air Interface specifications. Associated activities include but are not limited to the development and submission of proposals, contributions, or e-mails addressing issues that arise in the development of Common Air Interface Specifications, attendance of relevant meetings, and advocacy of positions supporting NASA's operations.
- 3.6.1.5 Participate in the IETF and Asynchronous Transfer Mode (ATM) Forum Request for Comments (RFC) and specification process for the purpose of furthering NASA's interests in the development of IETF DiffServ RFCs and ATM Forum specifications that address the efficient and effective transport of these IP services. This is including but not limited to the development and submission of proposals, contributions, or e-mails that address issues that arise in the development of DiffServ RFCs or ATM Forum Specifications, attendance of relevant meetings, and advocacy of positions supporting NASA's operations.

- 3.6.1.6 Participate in the technical evaluation of advanced and emerging networking technologies, industry trends, and agency program requirements, and provide recommendations to engineers for possible use at GRC. Investigate, analyze, and make recommendations to incorporate advanced technologies that are compliant with emerging industry/government standards and requirements in accordance with GRC plans and policies, into existing network infrastructure. This may require applied research activities in collaboration with GRC research staff.

3.6.2 Software Development and Support Activities

- 3.6.2.1 Develop prototype information systems software for use with space suits, and develop and analyze requirements for the Extravehicular Activity (EVA) Project avionics and software. The prototyping will include the development of heads up displays and voice recognition software using commercially available software. The purpose of these prototypes is to assess the value of the various systems prior to a formal development effort. Additionally, the engineering support will conduct a protocol study for wireless communications with medical monitoring equipment.
- 3.6.2.2 Provide insight and coding effort to enhance the client/server software and the user interface of flight software
- 3.6.2.3 Merge code developed for used in unit transformations and data interpolation into the next version of an Optimal Trajectory through Implicit Simulation code. Provide additional development of numerical and mathematical algorithms as the task requires.
- 3.6.2.4 Provide system and user support for the group software development and revision control environment.
- 3.6.2.5 Develop heads up displays and voice recognition software using commercially available software fro Prototype information systems software for use with space suits.

3.6.3 High End Computing and Computer Graphics/Computational Servers

- 3.6.3.1 Perform specialized system maintenance duties in the High Performance Computing (HPC) and graphics environments to assist the Center's programs in meeting their objectives and milestones.
- 3.6.3.2 Perform backups, userID support, monitor system utilization and ensure that all the systems software and applications are functioning properly. Perform the installation, testing, and maintenance of platform specific software. Provide these services for operating systems, compilers, parallel software tools, and software tools designed for the specific purpose of system integration.
- 3.6.3.3 Monitor systems for optimal performance. Tune systems accordingly to achieve necessary gains in processor utilization and disk and network I/O.
- 3.6.3.4 Provide the installation, testing, user support, and maintenance on all the HPC and graphics systems of job scheduling and computational grid tools as well as parallel applications and tools.
- 3.6.3.5 Provide high-end network connectivity which will generate the I/O throughput that is required for parallel and large code development on HPC and graphics systems. Emphasis on throughput shall be placed on the testbed networks. Consideration to

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improved networked capabilities shall be given to the production systems once the network technology has been proven. Testing of the latest networking capabilities shall be limited to the testbed systems.

- 3.6.3.6 Maintain a common home directory layout, appropriate network interface configuration, yellow pages/NIS/NIS+ (Network Information Services) or other appropriate software, and NFS (Network File System) configuration and maintenance.
- 3.6.3.7 Provide user support in parallel code compiling and parallel application runtime support across all systems in the HPC and graphics environment
- 3.6.3.8 Resolve user problems and questions regarding the production systems, testbed systems, and job scheduling and computational grid tools. Address inquiries and additional requests for specialized reports regarding the accounting and metrics configurations on the production and testbed systems, as well as the appropriate clustered computing environments located across the lab.
- 3.6.3.9 Address generally defined HPC and graphics problems or functional requirements by developing alternative technically acceptable solutions, indicating potential policy and/or operational issues, preparing implementation plans, and preparing status/procedural reports on the work in progress on the defined task.
- 3.6.3.10 Maintain an external Web based information site for the high performance testbed systems, production systems, and graphics systems. Include information on account reports, system configuration, user documentation, supported software, networking configuration, computational grid user guides and examples, and supported parallel tools including appropriate user guides and examples.
- 3.6.3.11 Provide user and administrative documentation for the production and testbed systems in the HPC and graphics environments. Document all procedures involved with the installation, testing, and deployment of hardware and software upgrades, hardware installation, accounting configuration, networking configuration, and parallel environment support for the production, testbed, and graphics systems.
- 3.6.3.12 Provide system administration support, optimize system configuration, and provide end user support to porting Unix/Linux based computer codes to the Windows environment.
- 3.6.3.13 Provide user support in parallel code compiling and parallel application runtime support across all systems in the HPC environment .
- 3.6.3.14 Resolve user problems and questions regarding the production systems, testbed systems, job scheduling and computational grid tools. Address inquiries and additional requests for specialized reports regarding the accounting and metrics
- 3.6.3.15 Maintain and enhance walk-in facility for state-of-the-art scientific visualization multimedia productions, and virtual reality applications. Perform pre- and post-production video recording, editing, and effects for computer-based animation and visualization. Develop three-dimensional models for scientific animation, virtual reality, and enhanced web applications. Establish and maintain archive of facility productions. Develop and conduct demonstrations of facility capabilities in support of program advocacy, education and public awareness missions.
- 3.6.3.16 Develop tools and applications to meet specific scientific visualization requirements. Develop techniques to facilitate and enhance lab-wide use of

scientific visualization software. Prepare reports and conduct seminars on scientific visualization.

- 3.6.3.17 Develop techniques and databases to apply virtual reality technology to scientific visualization, collaborative engineering, and mission simulation. Prepare reports and conduct seminars on virtual reality technology.
- 3.6.3.18 Coordinate and manage GRC's participation in special customer outreach events. Coordinate design and construction of demonstrations and exhibits. Oversee logistical requirements for off-site events including site registration, equipment transportation, and event promotion. Outreach activities can also include: web services, video conferencing, e-business, and simulation labs.

3.7 Test Facility Support

- 3.7.1 Perform hardware/software installation and maintenance including new systems, removal, disposition, preventative and remedial maintenance, and calibration for 50 plus experimental test facilities each with a dedicated steady state, real-time data acquisition and display system. [Both classified and un-classified environments.]
- 3.7.2 Provide operational support, backup, recovery, COTS, and unique software maintenance for 50 plus experimental test facilities each with a dedicated steady state, real-time data acquisition and display system. [Both classified and un-classified environments.]
- 3.7.3 Provide hardware and software configuration management including engineering revision maintenance, logistics, life cycle tracking, specialized system administration, and specialized hardware and software application development for 50 plus experimental test facilities each with a dedicated steady-state, real-time data acquisition and display system. [Both classified and un-classified environments.]
- 3.7.4 Provide on-site operations and maintenance support during the facilities' run schedules, typically from the hours of 0700 to 2400, Monday through Friday. Third shift and weekend (Saturday and/or Sunday) support will be required for those facilities scheduled to run during these times. Government programs may require additional service coverage. This service will be at an additional cost to the Government.
- 3.7.5 Coordinate activities with the data system product line manager, facility personnel, systems development personnel, the application programming staff, network administrators and the contracts for network infrastructure and computer maintenance not covered specifically in this task order area.

3.8 Web Services

3.8.1 Central Web Services

- 3.8.1.1 Provide support, development and maintenance functions to the Office of the CIO's Central Web Services Team and GRC Web curators including system administration for the Usability lab PC, Servers and other appliance servers at the Center that support the Central Web Services Team

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- 3.8.1.2 Provide services and support including procurement assistance, installation, repair, upgrades, customer support, preventive maintenance, user account management and data backup for all applications hosted by the Central Web Services Team including those used in the creation of Web content, hosting Web content, checking quality and compliance of Web content, indexing and searching Web content, securing Web content, and applications used for providing Web site usage statistics, online calendars, online X.500 lookup and Web form information mailing.
- 3.8.1.3 Maintain security controls established by security plans.
- 3.8.1.4 Coordinate services with the Central Web server infrastructure provided by the ODIN contractor
- 3.8.1.5 Implement change control process consistent with OCIO Change Control Committee following Production Change Control Process
- 3.8.1.6 Adhere to standard OCIO notification processes for unscheduled outages of production services
- 3.8.1.7 Integration of systems within the GRC networking environment
- 3.8.1.8 Perform system backup.
- 3.8.1.9 Provide access control administration support including establishment and maintenance of access control files for GRC websites hosted on the Central Web Server.
- 3.8.1.10 Support Web curators that maintain sites on Center's Web hosting system.
- 3.8.1.11 Provide support for service architecture (including security) development, investigation, installation, evaluation, testing and piloting of enhancements, replacements or additions to Web development and maintenance products, and recommend hardware/software/network configuration changes.

3.8.2 NASA Public Portal

- 3.8.2.1 Provide web page development, content reviews, and training in support for GRC Web content hosted in the NASA Public Portal infrastructure.
- 3.8.2.2 Ensure web pages are compliant with Federal and Agency internet policies.

3.8.3 Web Site Development/Maintenance

- 3.8.3.1 Design, develop and maintain Web sites for GRC organizations, ensuring Web sites are compliant with Federal, Agency, and Center Internet policies, including compliance with accessibility requirements.
- 3.8.3.2 Perform reviews of existing Web sites to ensure compliance with Federal, Agency, and Center Internet policies including accessibility.

Acronyms

| | |
|---------|---|
| aAAO | Associate Account Authorization Official |
| AMS | Application Management System |
| ATM | Asynchronous Transfer Mode |
| AWAS | Agency-Wide Application Services |
| CCB | Configuration Control Board |
| CIMS | Cyber Identity Management System |
| CIO | Chief Information Officer |
| CO | Contracting Officer |
| COTS | Commercial Off-the-Shelf |
| CS | Civil Servant |
| DBA | Database Administration |
| DBWG | Database Working Group |
| ESN | External Services Network |
| EVA | Extravehicular Activity |
| FISMA | Federal Information Security Management Act |
| GRC | Glenn Research Center |
| HPC | High Performance Computing |
| HQ | Headquarters |
| HSPD-12 | Homeland Security Presidential Directive 12 |
| IEMP | Integrated Enterprise Management Program |
| IETF | Internet Engineering Task Force |
| IFMS | Integrated Financial Management System |
| IP | Internet Protocol |
| IT | Information Technology |
| ITIM | IBM Tivoli Identity Manager |
| KWI | Knowledge Worker Infrastructure |
| LAN | Local Area Network |
| LDAP | Lightweight Directory Protocol |
| MVS | Multiple Virtual Storage |
| NAMS | NASA Account Management System |
| NDC | NASA Data Center |
| NIS | Network Information Services |
| NFS | Network File System |
| NIST | National Institute of Standards and Technology |
| NISE | NASA Integrated Services Environment |
| NPR | NASA Procedural Requirement |
| OAIT | Office Automation, IT Infrastructure & Telecommunication |
| OCIO | Office of the Chief Information Officer |
| OCSR | Organizational Computer Security Representative |
| ODIN | Outsourcing Desktop Initiative for NASA |
| PACE | Professional, Administrative, Computational & Engineering |
| PDS | Partitioned Date Set |
| RFC | Request for Comments |

Acronyms

| | |
|--------|---|
| SESAAS | Sustaining Engineering Support for Agency-wide Administrative Systems |
| SSC | Support Service Contractor |
| SSH | Secure Shell |
| SSL | Secure Socket Layer |
| TIM | Technical Interchange Meeting |
| TIA | Telecommunications Industry Association |
| TSC | Telescience Support Center |
| VPN | Virtual Private Network |
| WAN | Wide Area Network |