

AWARD/CONTRACT		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)	RATING DO-C9	PAGE OF PAGES 1 50
2. CONTRACT (Proc. Inst. Ident.) NO. NNA10DF26C		3. EFFECTIVE DATE August 1, 2010	4. REQUISITION/PURCHASE REQUEST/PROJECT NO. 4200351764	
5. ISSUED BY NASA Ames Research Center Attn: Natalie R. LeMar, M/S 241-1 Moffett Field, CA 94035-0001		CODE JAC: 241-1	6. ADMINISTERED BY (If other than Item 5) NASA Ames Research Center Attn: Naomi Castillo-Velasquez, M/S 243-1 Moffett Field, CA 94035-0001	

7. NAME AND ADDRESS OF CONTRACTOR (No. street, county, state and ZIP Code) Science and Technology Corporation 10 Basil Sawyer Drive Hampton, VA 23666-1393 Attn: Ms. Elyse A. Webb, Contracts Manager Ph: (757) 766-5819; Email: webb@stcnet.com		Cage Code: 2U795 DUNS: 019066810	8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input type="checkbox"/> OTHER (See below)
CODE		FACILITY CODE	9. DISCOUNT FOR PROMPT PAYMENT NT30
11. SHIP TO/MARK FOR NASA Ames Research Center Attn: Francisco Torres, M/S 258-1 Moffett Field, CA 94035-0001		CODE AUS: 258-1	10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN: ITEM G.3

12. PAYMENT WILL BE MADE BY NASA Shared Services Center (NSSC) Financial Management Division (FMD)—Accounts Payable Bldg. 1111, Road C Stennis Space Center, MS 39529 Email: NSSC-AccountsPayable@nasa.gov		CODE NSSC
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13. AUTHORITY FOR USING OTHER FULL AND OPEN COMPETITION: <input checked="" type="checkbox"/> 10 U.S.C. 2304(c) (5) <input type="checkbox"/> 41 U.S.C. 253(c)()	14. ACCOUNTING AND APPROPRIATION DATA 4200351764 Obligated: \$220,809.00 PPC: GF
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15A. ITEM NO.	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
01A and 01B	Aeronautics and Exploration Mission Modeling and Simulation (AEMMS). Phase-In and Base Period set forth in Section F, paragraph F.2(a). The minimum amount of supplies or services that shall be ordered during the effective period of this contract is \$100,000 (Estimated Cost and Fixed Fee). The maximum amount is \$23,000,000 (Estimated Cost and Fixed Fee). Section K dated 1/13/10 is incorporated by reference.	1	Job	Per Task Order	NTE \$23,000,000

15G. TOTAL AMOUNT OF CONTRACT	NTE \$23,000,000
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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 1 copy 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 checked="" type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number NNA09274879R offer date 01/13/10, 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.
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19A. NAME AND TITLE OF SIGNER (Type or print)	20A. NAME OF CONTRACTING OFFICER NATALIE LEMAR		
19B. NAME OF CONTRACTOR	19C. DATE SIGNED	20B. UNITED STATES OF AMERICA	20C. DATE SIGNED 7/29/2010
BY _____ (Signature of person authorized to sign)	BY <u>Natalie Lemar</u> (Signature of Contracting Officer)		

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[END OF SECTION]

SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

B.1. SUPPLIES/SERVICES TO BE PROVIDED

(a) The contractor shall provide all resources (except as may be expressly stated in this contract as furnished by the Government) necessary to furnish the items below in accordance with the Description/Specification/Work Statement set forth in Section C and as identified under individual task orders.

1. Item No.	2. Description	3. Qty	4. Unit
*01	Phase-In Period set forth in Section F, paragraph F.2(a).	1	Job
02	Aeronautics and Exploration Mission Modeling and Simulation (AEMMS) Base Period set forth in Section F, paragraph F.2(a).	TBD	Task Orders
03	Recovery Act Funded Tasks under Aeronautics and Exploration Mission Modeling and Simulation (AEMMS) Base Period set forth in Section F, paragraph F.2(a).	TBD	Task Orders

*Line Item No. 01: At the time of award, a Phase-In Task will be awarded.

(b) OPTION PERIODS:

If Option Periods are exercised pursuant to Clause 52.217-9, "Option to Extend the Term of the Contract," the contractor shall provide all resources (except as may be expressly stated in this contract as furnished by the Government) necessary to furnish the items below in accordance with the Description/Specifications/Work Statement in Section C and as identified under individual task orders.

1. Item No.	2. Description	3. Qty	4. Unit
OPTION PERIOD 1			
04	Aeronautics and Exploration Mission Modeling and Simulation (AEMMS) set forth in Section F, paragraph F.2(b).	TBD	Task Orders
OPTION PERIOD 2			
05	Aeronautics and Exploration Mission Modeling and Simulation (AEMMS) set forth in Section F, paragraph F.2(c).	TBD	Task Orders
OPTION PERIOD 3			
06	Aeronautics and Exploration Mission Modeling and Simulation (AEMMS) set forth in Section F, paragraph F.2(d).	TBD	Task Orders

(END OF CLAUSE)

B.2. ESTIMATED COST AND FIXED FEE (NFS 1852.216-74) (DECEMBER 1991)

The estimated cost of this contract is to be negotiated by task order exclusive of the fixed fee to be negotiated by task order. The total estimated cost and fixed fee is to be negotiated by task order.

(END OF CLAUSE)

B.3. CONTRACT FUNDING (NFS 1852.232-81) (JUNE 1990)

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is [REDACTED] B-4
This allotment is for the line items 01 and 02 and covers the following estimated period of performance: date of award through September 23, 2010.

(b) An additional amount of [REDACTED] B-4 is obligated under this contract for payment of fee.

SUMMARY OF CONTRACT FUNDING	FROM	BY	TO
Cost	[REDACTED]	[REDACTED]	[REDACTED]
Fixed Fee	[REDACTED]	[REDACTED]	[REDACTED]
Total Cost Plus Fixed Fee	[REDACTED]	[REDACTED]	[REDACTED]

(c) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is \$0.00. This allotment is for the line item 03 and covers the following estimated period of performance: date of award through \$0.00.

(d) An additional amount of \$0.00 is obligated under this contract for payment of fee.

SUMMARY OF RECOVERY ACT FUNDING	FROM	BY	TO
Cost	\$0.00	\$0.00	\$0.00
Fixed Fee	\$0.00	\$0.00	\$0.00
Total Cost Plus Fixed Fee	\$0.00	\$0.00	\$0.00

(END OF CLAUSE)

B.4. LIMITATIONS ON PERIOD OF PERFORMANCE

The period of performance for issuing task orders under this contract is for 2 years from the effective date of the contract. This contract also includes three one-year options for additional ordering periods if exercised by the Government. Each individual task order will include its own period of performance.

(END OF CLAUSE)

B.5. MINIMUM/MAXIMUM AMOUNT OF SUPPLIES OR SERVICES (COST REIMBURSEMENT)

(a) The minimum amount of supplies or services that shall be ordered during the effective period of this contract is **\$100,000 (Estimated Cost and Fixed Fee)**. The maximum amount of supplies or services that may be ordered during the effective period of this contract is **\$23,000,000 (Estimated Cost and Fixed Fee)**. All orders placed under this contract will be applied to the minimum and maximum specified in this paragraph.

(b) The minimum amount is reached when the sum of the dollar amounts of all ordered supplies or services, except for any adjustments made pursuant to the Limitation of Cost or Limitation of Funds clause, equals or exceeds the minimum amount stated in paragraph (a).

(c) The maximum amount is reached when the sum of the dollar amounts of all ordered supplies or services, except for any adjustments made pursuant to the Limitation of Cost or Limitation of Funds clause, equals the maximum amount stated in paragraph (a).

(d) The maximum amount, if reached, precludes the issuance of further orders for supplies or services under this contract. However, reaching the maximum amount does not preclude adjustments to the dollar amounts of existing placed orders, for actions that are within the scope of the placed orders, and which are made pursuant to existing contract authority, such as the Changes clause.

(e) The maximum amount may be adjusted unilaterally by the Government on an annual basis. Historic, current, and/or projected workload requirements will be used to determine the amount of upward adjustment. In no event will the adjusted maximum amount exceed **10%** of the original maximum amount (\$23,000,000).

(END OF CLAUSE)

B.6. SUPPLEMENTAL TASK ORDERING PROCEDURES (COST REIMBURSEMENT)

(a) When the Government issues a request for a "task plan" to the Contractor in accordance with the Clause entitled "Task Ordering Procedure" of this contract, the Contractor shall prepare its estimate of the labor hours, labor categories, indirect costs, and other direct costs required to perform the task order requirements. The Contractor shall use only those appropriate labor and indirect cost rates which may be less than, but shall not exceed, the rates found in Attachment J.1(a) 7, entitled "Direct Labor Rates, Fringe Rates, Indirect Rates, Fixed Fee, and Ceiling Rate Matrices" for all task orders issued in accordance with the "Task Ordering Procedure" clause of this contract. Notwithstanding the use of the rates set forth in Attachment J.1(a) 7 for estimating purposes, the Contractor will be reimbursed costs based on their current DCAA approved rates subject to audit by the Government. Indirect rates are subject to the ceiling limits set forth in Clause B.7.

(b) The Contractor's proposed approach/pricing of the representative tasks set forth in its proposal, if required, for award of this contract shall be used as reference by the Contracting Officer in negotiating tasks with the Contractor which are issued under this contract, but only to the extent portions of a representative task are relevant to portions of a task actually issued.

(c) The Government and Contractor agree that the fixed fee percentage specified in Attachment J.1(a) 7 shall be used to calculate the fixed fee dollars on all task orders issued in accordance with the "Task Ordering Procedure" clause of this contract. For task orders under this contract, the fixed fee amount associated with the task order shall be the fixed fee percentage applied and calculated on the total negotiated **estimated** cost of the task order.

(END OF CLAUSE)

B.7. LIMITATION OF INDIRECT COSTS

(a) Within each of the Contractor's fiscal years, the Contractor shall not charge or be reimbursed by the Government, under this or any other Government contract, for indirect costs in excess of the individual indirect expense dollars derived by the application of the indirect cost ceiling rates to the appropriate base(s) as set forth in Attachment J.1(a) 7, entitled "Direct Labor Rates, Fringe Rates, Indirect Rates, Fixed Fee, and Ceiling Rate Matrices".

(b) The limitations may be adjusted at the discretion of the Contracting Officer to the extent that increases to the Contractor's indirect costs are caused by:

(i) New or revised statutes and court decisions and/or written ruling or regulation by the Internal Revenue Service or any other taxing authority.

(ii) Wage determinations and/or regulations issued by the Department of Labor pursuant to the Service Contract Act of 1965, as amended, if applicable.

(c) A proposal for any adjustment under paragraph (b) must be in sufficient detail to establish that the cause of the amount of adjustment requested was solely due to the permitted conditions stated in the paragraph. It must be submitted no later than 60 days after the condition(s) become known, or should have become known, to the Contractor. The amount of adjustment, if any, is at the discretion of the Contracting Officer and shall not be subject to the Disputes clause.

(END OF CLAUSE)

B.8. ESTIMATED COST INCREASES

(a) The scope of the task, and any deliverables there under, shall be defined in sufficient detail for the Government and the Contractor to distinguish between changes in scope and overrun. In the event the Contractor is unable to complete the task within the estimated costs set forth in the task order, additional costs under the task shall be considered non-fee bearing, unless the Contracting Officer modifies the task to recognize additional or revised requirements. In the event the contractor incurs additional costs to complete the task due to an overrun, no additional fee will be paid.

(b) The Contractor shall notify the Contracting Officer in writing when the Contractor has reason to believe that the total cost for performance of this contract, or any individual task order, exclusive of any fee, will be either greater or substantially less than the total estimated cost stated in this contract or in the task order. Notification shall not be delayed pending preparation of a proposal.

(c) A proposal is required to support a request for an increase in the estimated cost of the contract or the task order. The proposal should be submitted as soon as possible after the above notification but no later than 115 days before the incurred costs are expected to exceed the estimated cost. This will allow adequate time for the Government to evaluate the proposal and to mutually establish any increase in estimated cost with the Contractor.

(d) (1) The proposal shall be submitted in the following format unless some other format is directed or approved by the Contracting Officer:

Incurred costs to date

Projected cost to completion

Total cost at completion

Current negotiated estimated cost

Requested increase in estimated cost

(2) The "projected cost to completion" shall consist of the following "cost or pricing data" unless the Contracting Officer requests or approves the submittal of a greater or lesser amount of information:

(i) Elements of cost with supporting detail for estimated direct labor hours, direct and indirect rates, materials and subcontracts, and other elements.

(ii) Supporting explanation for the increases and projections, sufficient for the Government to understand the reasons for the increased estimated cost.

(e) In rare circumstances, changes in task focus may require the addition of labor categories beyond the categories included in J.1(a)7. In these cases a request must be submitted by the contractor to the Contracting Officer, demonstrating the insufficiency of the existing labor categories, a description of the proposed labor category including the education and experience levels, proposed and ceiling labor rates, and a cross reference to other contracts that include the proposed labor categories. These additional labor categories, rates and descriptions will be negotiated on a case-by-case basis, and upon determination by the Government that they are fair and reasonable, will be incorporated by modification into Section B of the contract.

(END OF CLAUSE)

[END OF SECTION]

SECTION C - DESCRIPTION/SPECIFICATION/WORK STATEMENT

C.1. STATEMENT OF WORK (ARC 52.211-93) (FEB 1997)

(a) In accordance with the contract's terms and conditions, the Contractor shall furnish all personnel, services, equipment, materials, and facilities and do all other things necessary for, or incidental to performance of the requirements set forth herein.

(b) Work shall be accomplished in accordance with the Statement of Work, entitled "Statement of Work for Aeronautics and Exploration Mission Modeling and Simulation (AEMMS)" which is incorporated in Section J, paragraph J.1(a) as Attachment 1.

(END OF CLAUSE)

[END OF SECTION]

SECTION D - PACKAGING AND MARKING**D.1. LISTING OF 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):

FAR website:

<http://acquisition.gov/far/index.html>

NFS website:

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>**I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
None included by reference		

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
1852.211-70	SEP 2005	PACKAGING, HANDLING, AND TRANSPORTATION

(END OF CLAUSE)

[END OF SECTION]

SECTION E - INSPECTION AND ACCEPTANCE

E.1. LISTING OF 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):

FAR website: <http://acquisition.gov/far/index.html>
 NFS website: <http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
52.246-3	MAY 2001	INSPECTION OF SUPPLIES – COST REIMBURSEMENT
52.246-5	APR 1984	INSPECTION OF SERVICES – COST REIMBURSEMENT
52.246-8	MAY 2001	INSPECTION OF RESEARCH AND DEVELOPMENT COST-REIMBURSEMENT

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
1852.246-73	MAR 1997	HUMAN SPACE FLIGHT ITEM

(END OF CLAUSE)

E.2. MATERIAL INSPECTION AND RECEIVING REPORT (NFS 1852.246-72) (AUG 2003)

(a) At the time of each delivery to the Government under this contract, the Contractor shall furnish a Material Inspection and Receiving Report (DD Form 250 series) prepared in triplicate, an original and 2 copies.

(b) The Contractor shall prepare the DD Form 250 in accordance with NASA FAR Supplement 1846.6. The Contractor shall enclose the copies of the DD Form 250 in the package or seal them in a waterproof envelope, which shall be securely attached to the exterior of the package in the most protected location.

(c) When more than one package is involved in a shipment, the Contractor shall list on the DD Form 250, as additional information, the quantity of packages and the package numbers. The Contractor shall forward the DD Form 250 with the lowest numbered package of the shipment and print the words "CONTAINS DD FORM 250" on the package.

(END OF CLAUSE)

[END OF SECTION]

SECTION F - DELIVERIES OR PERFORMANCE

F.1. LISTING OF 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):

FAR website: <http://acquisition.gov/far/index.html>
 NFS website: <http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
52.242-15	AUG 1989	STOP WORK ORDER (ALT I) (APR 1984)
52.247-34	NOV 1991	F.O.B. DESTINATION

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
None included by reference		

(END OF CLAUSE)

F.2. PERIOD OF PERFORMANCE

The performance period for issuing task orders under this contract is set forth below. Each individual task order will include its own period of performance.

(a) BASE PERIOD (Phase-In and Base Requirement)

Phase-In (NTE 30 days) shall be included in the Base Period performance period. The performance of the base period shall be for two (2) years from the effective date of the contract.

(b) OPTION PERIOD 1

If exercised, the period of performance shall be twelve (12) months from the end of Base Period.

(c) OPTION PERIOD 2

If exercised, the period of performance shall be twelve (12) months from the end of Option Period 1

(d) OPTION PERIOD 3

If exercised, the period of performance shall be twelve (12) months from the end of Option Period 2.

(END OF CLAUSE)

F.3. DELIVERY SCHEDULE

(a) The Contractor shall deliver the supplies and services as required by this contract and the individual task orders.

(b) Unless specified otherwise, all items shall be delivered to:

Ames Research Center
Contract NNA10DF26C
Moffett Field, CA 94035-1000
Attn: (Francisco Torres, Mail Stop 258-1)

(c) All reports and documentation shall be mailed in accordance with Paragraph F.4, *Delivery of Reports*.

(END OF CLAUSE)

F.4. DELIVERY OF REPORTS

Unless otherwise specified, all reports shall be addressed to the recipients listed in Section J, paragraph J.1(a) Attachment 2, "Contract Data Requirements List." Reports specific to task orders will be specified in the individual task order.

(END OF CLAUSE)

F.5. PLACE OF PERFORMANCE

The Contractor shall perform the work under this contract at NASA Ames Research Center, and at such other locations as directed by the Ames Research Center Contracting Officer.

(END OF CLAUSE)

F.6. NOTICE OF DELAY (ARC 52.249-90) (FEB 1997)

If, because of technical difficulties, the Contractor becomes unable to complete the contract work at the time specified, notwithstanding the exercise of good faith and diligent efforts in performing the work called for under this contract, the Contractor shall give the Contracting Officer written notice of the anticipated delay and the reasons for it. The notice and reasons shall be delivered promptly after the condition creating the anticipated delay becomes known to the Contractor but in no event less than 45 days before the completion date specified in this contract, unless otherwise permitted by the Contracting Officer. When notice is given, the Contracting Officer may extend the time specified in the schedule for such period as is deemed advisable.

(END OF CLAUSE)

[END OF SECTION]

SECTION G - CONTRACT ADMINISTRATION DATA

G.1. LISTING OF 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):

FAR website: <http://acquisition.gov/far/index.html>
 NFS web site: <http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
None included by reference		

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
1852.227-70	MAY 2002	NEW TECHNOLOGY
1852.227-86	DEC 1987	COMMERCIAL COMPUTER SOFTWARE--LICENSING
1852.242-71	DEC 1988	TRAVEL OUTSIDE OF THE UNITED STATES
1852.242-73	NOV 2004	NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING

(END OF CLAUSE)

G.2. RESERVED

G.3. 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:

NSSC – FMD Accounts Payable
 Bldg. 1111, C. Road
 Stennis Space Center, MS 39529

(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:

Defense Contract Audit Agency
Attn: Mr. Cornell Carpenter, Supervisory Auditor
514 Butler Farm Road, Suite 290
Hampton, VA 23666-1500

(2) Four 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, STAMPED "INFO COPY"

NASA Ames Research Center
ATTN: Naomi Castillo-Velasquez
Moffett Field, CA 94035-0001

(ii) Copy 2 Auditor

Defense Contract Audit Agency
Attn: Mr. Cornell Carpenter, Supervisory Auditor
514 Butler Farm Road, Suite 290
Hampton, VA 23666-1500

(iii) Copy 3 Contractor

(iv) Copy 4 Contract Administration Office (if applicable), STAMPED "INFO COPY"

(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 forwarded to:

NSSC – FMD Accounts Payable
Bldg. 1111, C. Road
Stennis Space Center, MS 39529

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.

(END OF CLAUSE)

SPECIAL INVOICING INSTRUCTIONS FOR RECOVERY ACT FUNDS

In addition to the requirements set forth in H.3 of this contract, the following special requirements apply to work authorized under the American Recovery and Reinvestment Act (ARRA) of 2009 (herein after referred to as the Recovery Act).

- All requests for payment for work performed subject to the Recovery Act shall be submitted separately from requests for payment for any other work performed under the contract.
- All requests for payment for work on contracts, funded in whole or in part, with Recovery Act funds, shall identify the applicable Contract Line Item Number(s) (CLINs) associated with the supplies or services being invoiced.
- All invoices/vouchers shall be submitted via e-mail with no more than one invoice/voucher per e-mail submission.
- The NASA Shared Services Center is the Designated Billing Office for Recovery Act invoices, except for cost type contracts where DCAA is designated as the billing office for verification of vouchers.

G.4. DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (NFS 1852.227-72) (JUL 1997)

(a) For purposes of administration of the clause of this contract entitled "Patent Rights--Retention by the Contractor (Short Form)," whichever is included, the following named representatives are hereby designated by the Contracting Officer to administer such clause:

TITLE	OFFICE CODE	ADDRESS (INCLUDING ZIP CODE)
New Technology Representative	VP	NASA Ames Research Center M/S 202A-3 Moffett Field, CA 94035-1000
Patent Representative	DL	NASA Ames Research Center M/S 202A-4 Moffett Field, CA 94035-1000

(b) Reports of reportable items, and disclosure of subject inventions, interim reports, final reports, utilization reports, and other reports required by the clause, as well as any correspondence with respect to such matters, should be directed to the New Technology Representative unless transmitted in response to correspondence or request from the Patent Representative. Inquiries or requests regarding disposition of rights, election of rights, or related matters should be directed to the Patent Representative. This clause shall be included in any subcontract hereunder requiring a "New Technology" clause or "Patent Rights--Retention by the Contractor (Short Form)" clause, unless otherwise authorized or directed by the Contracting Officer. The respective responsibilities and authorities of the above-named representatives are set forth in 1827.305-370 of the NASA FAR Supplement.

(END OF CLAUSE)

G.5. 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.

(END OF CLAUSE)

**G.6. CONTRACTOR REQUESTS FOR GOVERNMENT-PROVIDED PROPERTY
(NFS 1852.245-70) (DEVIATION)(SEP 2007)**

(a) The Contractor shall provide all property required for the performance of this contract. The Contractor shall not acquire or construct items of property to which the Government will have title under the provisions of this contract without the Contracting Officer's written authorization. Property which will be acquired as a deliverable end item as material or as a component for incorporation into a deliverable end item is exempt from this requirement.

(b)(1) In the event the Contractor is unable to provide the property necessary for performance, and the Contractor requests provision of property by the Government, the Contractor's request shall--

(i) Justify the need for the property;

(ii) Provide the reasons why contractor-owned property cannot be used;

(iii) Describe the property in sufficient detail to enable the Government to screen its inventories for available property or to otherwise acquire property, including applicable manufacturer, model, part, catalog, National Stock Number or other pertinent identifiers;

(iv) Combine requests for quantities of items with identical descriptions and estimated values when the estimated values do not exceed \$100,000 per unit; and

(v) Include only a single unit when the acquisition or construction value equals or exceeds \$100,000.

(2) Contracting Officer authorization is required for items the Contractor intends to manufacture as well as those it intends to purchase.

(3) The Contractor shall submit requests to the Contracting Officer no less than 30 days in advance of the date the Contractor would, should it receive authorization, acquire or begin fabrication of the item.

(c) The Contractor shall maintain copies of Contracting Officer authorizations, appropriately cross-referenced to the individual property record, within its property management system.

(d) Property furnished from Government excess sources is provided as-is, where-is. The Government makes no warranty regarding its applicability for performance of the contract or its ability to operate. Failure of property obtained from Government excess sources under this clause is insufficient reason for submission of requests for equitable adjustments discussed in the clause at 52.245-1, Government Property.

(END OF CLAUSE)

**G.7. INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (DEVIATION)
(NFS 1852.245-71) (SEP 2007)(ALT 1)(DEVIATION)(SEP 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:

NASA Procedural Requirements (NPRs)

- 4100.1, NASA Materials Inventory Management Manual
- 4200.1, NASA Equipment Management Procedural Requirements
- 4300.1, NASA Personal Property Disposal Procedural Requirements

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 shall not utilize the installation's central receiving facility for receipt of contractor-acquired property. However, the Contractor shall provide listings suitable for establishing accountable records of all such property received, on a monthly basis, to the SEMO.

(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 Section J, paragraph J.1(a), Attachment 4, of the contract.

(i) 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.

(ii) 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: Other Center Facilities (such as laboratories and supercomputers as required for completion of the tasks).

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

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

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

(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.

(END OF CLAUSE)

**G.8. IDENTIFICATION AND MARKING OF GOVERNMENT EQUIPMENT (DEVIATION)
(NFS 1852.245-74) (SEP 2007)**

(a) The Contractor shall identify all equipment to be delivered to the Government using NASA Technical Handbook (NASA-HDBK) 6003, Application of Data Matrix Identification Symbols to Aerospace Parts Using Direct Part Marking Methods/Techniques, and NASA Standard (NASA-STD) 6002, Applying Data Matrix Identification Symbols on Aerospace Parts Handbook. This includes deliverable equipment listed in the schedule and other equipment when NASA directs physical transfer to NASA or a third party. The Contractor shall identify property in both machine and human readable form unless the use of a machine readable-only format is approved by the NASA Industrial Property Officer.

(b) Property shall be marked in a location that will be human readable, without disassembly or movement of the property, when the items are placed in service unless such placement would have a deleterious effect on safety or on the item's operation.

(c) Concurrent with equipment delivery or transfer, the Contractor shall provide the following data in an electronic spreadsheet format:-

- (1) Item Description.
- (2) Unique Identification Number (License Tag).
- (3) Unit Price.
- (4) An explanation of the data used to make the unique identification number.

(d) For items physically transferred under paragraph (a) the following additional data is required:

- (1) Date originally placed in service.
- (2) Item condition.
- (3) Date last serviced.

(e) The data required in paragraphs (c) and (d) shall be delivered to the NASA center receiving activity listed below:

Ames Research Center
Central Shipping and Receiving
M/S 255-23
Moffett Field, CA 94035-1000

Mark for: Francisco Torres, COTR

(f) The contractor shall include the substance of this clause, including this paragraph (f), in all subcontracts that require delivery of equipment.

(END OF CLAUSE)

G.9. PROPERTY MANAGEMENT CHANGES (DEVIATION) (NFS 1852.245-75) (SEP 2007)

(a) The Contractor shall submit any changes to standards and practices used for management and control of Government property under this contract to the assigned property administrator and Industrial Property Officer (IPO), prior to making the change whenever the change --

- (1) Employs a standard that allows increase in thresholds or changes the timing for reporting loss, damage, or destruction of property;
- (2) Alters physical inventory timing or procedures;
- (3) Alters recordkeeping practices;
- (4) Alters practices for recording the transport or delivery of Government property; or
- (5) Alters practices for disposition of Government property.

(b) The Contractor shall contact the IPO at:

NASA Ames Research Center
Attn: Industrial Property Officer
M/S 255-2
Moffett Field, CA 94035-1000

Email: Maria-Elena.Lopez-1@nasa.gov

Phone: (650) 604-6882

(END OF CLAUSE)

[END OF SECTION]

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1. LISTING OF 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):

FAR website:

<http://acquisition.gov/far/index.html>

NFS website:

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
None included by reference		

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
1852.208-81	NOV 2004	RESTRICTIONS ON PRINTING AND DUPLICATION
1852.223-70	APR 2002	SAFETY AND HEALTH
1852.223-75	FEB 2002	MAJOR BREACH OF SAFETY OR SECURITY
1852.225-70	FEB 2000	EXPORT LICENSES (<i>Insert: NASA Ames Research Center</i>)
1852.228-72	SEP 1993	CROSS-WAIVER OF LIABILITY FOR SPACE SHUTTLE SERVICES
1852.228-76	DEC 1994	CROSS-WAIVER OF LIABILITY FOR SPACE STATION ACTIVITIES
1852.235-73	DEC 2006	FINAL SCIENTIFIC AND TECHNICAL REPORTS (ALT II) (FEB 2003)
1852.242-72	AUG 1992	OBSERVANCE OF LEGAL HOLIDAYS (ALT I) (SEP 1989) (ALT II) (OCT 2000)
1852.244-70	APR 1985	GEOGRAPHIC PARTICIPATION IN THE AEROSPACE PROGRAM

(END OF CLAUSE)

H.2. TASK ORDER PROCEDURE (NFS 1852.216-80) (OCT 1996)

(a) Only the Contracting Officer may issue task orders to the Contractor, providing specific authorization or direction to perform work within the scope of the contract and as specified in the schedule. The Contractor may incur costs under this contract in performance of task orders and task order modifications issued in accordance with this clause. No other costs are authorized unless otherwise specified in the contract or expressly authorized by the Contracting Officer.

(b) Prior to issuing a task order, the Contracting Officer shall provide the Contractor with the following data:

(1) A functional description of the work identifying the objectives or results desired from the contemplated task order.

(2) Proposed performance standards to be used as criteria for determining whether the work requirements have been met.

(3) A request for a task plan from the Contractor to include the technical approach, period of performance, appropriate cost information, and any other information required to determine the reasonableness of the Contractor's proposal.

(c) Within 15 calendar days after receipt of the Contracting Officer's request, the Contractor shall submit a task plan conforming to the request. For each task plan, the Contractor shall provide the representation set forth in 52.227-15, Limited Rights Data and Restricted Rights Software.

(d) After review and any necessary discussions, the Contracting Officer may issue a task order to the Contractor containing, as a minimum, the following:

- (1) Date of the order.
- (2) Contract number and order number.
- (3) Functional description of the work identifying the objectives or results desired from the task order, including special instructions or other information necessary for performance of the task.
- (4) Performance standards, and where appropriate, quality assurance standards.
- (5) Maximum dollar amount authorized (cost and fee or price). This includes allocation of award fee among award fee periods, if applicable.
- (6) Any other resources (travel, materials, equipment, facilities, etc.) authorized.
- (7) Delivery/performance schedule including start and end dates.
- (8) If contract funding is by individual task order, accounting and appropriation data.

(e) The Contractor shall provide acknowledgment of receipt to the Contracting Officer within 5 calendar days after receipt of the task order.

(f) If time constraints do not permit issuance of a fully defined task order in accordance with the procedures described in paragraphs (a) through (d), a task order which includes a ceiling price may be issued.

(g) The Contracting Officer may amend tasks in the same manner in which they were issued.

(h) In the event of a conflict between the requirements of the task order and the Contractor's approved task plan, the task order shall prevail.

(END OF CLAUSE)

H.3. KEY PERSONNEL AND FACILITIES (NFS 1852.235-71) (MAR 1989)

(a) The personnel and/or facilities listed below (or specified in the contract Schedule) are considered essential to the work being performed under this contract. Before removing, replacing, or diverting any of the listed or specified personnel or facilities, the Contractor shall (1) notify the Contracting Officer reasonably in advance and (2) submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on this contract.

(b) The Contractor shall make no diversion without the Contracting Officer's written consent; provided, that the Contracting Officer may ratify in writing the proposed change, and that ratification shall constitute the Contracting Officer's consent required by this clause.

(c) The list of personnel and/or facilities (shown below or as specified in the contract Schedule) may, with the consent of the contracting parties, be amended from time to time during the course of the contract to add or delete personnel and/or facilities.

Key Personnel (Name and Title)

Facilities (Name and Address)

Dr. Stephen Lesh, Program Manager

Not Applicable

(END OF CLAUSE)

H.4. ADDITIONAL REPORTS OF WORK – RESEARCH AND DEVELOPMENT (NFS 1852.235-74) (FEB 2003)

In addition to the final report required under this contract, the Contractor shall submit the following report(s) to the Contracting Officer:

(a) Monthly progress reports. The Contractor shall submit separate monthly reports of all work accomplished during each month of contract performance. Reports shall be in narrative form, brief, and informal. They shall include a quantitative description of progress, an indication of any current problems that may impede performance, proposed corrective action, and a discussion of the work to be performed during the next monthly reporting period.

(b) Quarterly progress reports. The Contractor shall submit separate quarterly reports of all work accomplished during each three-month period of contract performance. In addition to factual data, these reports should include a separate analysis section interpreting the results obtained, recommending further action, and relating occurrences to the ultimate objectives of the contract. Sufficient diagrams, sketches, curves, photographs, and drawings should be included to convey the intended meaning.

(c) Submission dates. Monthly and quarterly reports shall be submitted by the 15th day of the month following the month or quarter being reported. If the contract is awarded beyond the middle of a month, the first monthly report shall cover the period from award until the end of the following month. No monthly report need be submitted for the third month of contract effort for which a quarterly report is required. No quarterly report need be submitted for the final three months of contract effort since that period will be covered in the final report. The final report shall be submitted within 15 days after the completion of the effort under the contract.

(END OF CLAUSE)

H.5. INCORPORATION OF THE CONTRACTOR'S PROPOSAL



B-4

(END OF CLAUSE)

H.6. EMERGENCY PREPAREDNESS AND RESPONSE (ARC 52.223-90) (SEP 2007)

(a) Contractors shall comply with Ames Procedural Requirements (APR) 1601.4, "Emergency Operations Plan."

(b) Contractors doing business with ARC are also employers in their own right and, as such, are responsible for protecting their employees, the environment, and property from the effects of hazardous events. Contractors shall develop and maintain appropriate emergency response and recovery plans, facility shutdown/startup plans, standard operations procedures, and checklists for emergency response to their facilities and operations. Contractors shall ensure training and certification of their employees as required to support their emergency response and recovery plan. Contractors shall participate in ARC drills and/or exercises to validate adequacy of emergency response and recovery plans and to ensure contractor employees are trained on how to respond. During a disaster/emergency, the contractor's Project Manager or other line supervisor shall be prepared to provide personnel accountability and facility status information to the designated NASA Facility Manager or Emergency Operations Center (EOC) Representative.

(c) Many contractor employees also serve as emergency response or mission essential resources with regards to performing certain emergency response and recovery functions associated with the overall NASA Ames Research Center and agency response. As such, their emergency response or mission essential roles for the Center and agency need to be identified prior to an emergency or disaster. These individuals must also be notified of their roles, trained in their roles and participate in any drills that serve to increase the Center's effectiveness in responding to and recovering from emergencies and disasters.

(d) The contractor's obligation may include resolution of unusual or emergency situations, pursuant to FAR Part 18, "Emergency Acquisitions." The contractor may be required to assist NASA, within the general scope of work, but in currently unidentified ways, in preparation for, or in response to emergencies. Obligations under this requirement shall only arise under prescribed circumstances that enable NASA to utilize "Emergency Acquisition Flexibilities," as defined at FAR 18.001. If the emergency preparedness and response requirements result in changes to the contract, all contract adjustments will be processed in accordance with the changes clause.

(END OF CLAUSE)

**H.7. DISASTER ASSISTANCE AND RESCUE TEAM (DART) PARTICIPATION
(ARC 52.223-91) (APR 2004)**

(a) Contractor employees are eligible to participate in the Disaster Assistance and Rescue Team (DART) if approved in writing by the Contractor and appointed by the Government. If a Contractor approves of an employee's participation, the contractor agrees to modify the employee's position description to include participation in DART, and to provide additional indemnification (e.g., worker's compensation insurance, general liability, etc.) as may be necessary to protect its employee and/or the Government while the employee is participating in the program.

(b) **DART Definition.** This team is comprised of civil service, contractor, Ames Associate, resident agent, and military personnel that work at Ames Research Center, the NASA Research Park, and Moffett Federal Airfield. The team composition includes, but is not limited to, scientists, engineers, wind tunnel mechanics, aircraft mechanics, facility maintenance personnel, computer specialists, industrial hygienists, safety professionals, heavy equipment operators, administrative personnel, managers, procurement officials, and data specialists. DART is an umbrella organization that has ten functional groups. The groups are Search, Rescue, Hazardous Materials Response, Damage and Utility Control, Structural Assessment, Emergency Communications, Medical, Logistics, Technical Support, and Emergency Operations Center as well as the Emergency Communications Facility. Typically, participation will involve approximately 5% of the employee's (full) time, except for initial training/orientation, which will involve approximately 10% of the employee's (full) time. The executive management at Ames Research Center strongly encourages contractor participation on DART, which needs all of our support, as it has proven to be a valuable element of the Center's Emergency Service Program.

(END OF CLAUSE)

**H.8. SUBCONTRACTING AND DATA RIGHTS (ARC 52.227-97) (OCT 2006)
ALTERNATE I (OCT 2006)**

(a) It is strongly recommended that the Contractor flow down the data rights provisions of this contract to lower tier subcontractors to ensure that it can fulfill its data rights obligations to the Government. See Clause FAR 52.227-14(h), *Rights in Data—General*. The Contractor shall be held responsible to obtain rights for the Government where it fails to fulfill such obligations.

(b) Pursuant to Clause FAR 52.227-14(c)(2), the Contractor must obtain Contracting Officer approval before incorporating any data not first produced under the Contract into data delivered under the contract. Before delivering such data, the Contractor must identify it and grant the Government, or acquire on its behalf, the broad licenses required by subparagraph (c) of the *Rights in Data—General* clause.

(c) The Contractor shall make the representation required by FAR 52.227-15 for each contract task order. On a case-by-case basis, the Government will insert the purposes, rights or limitations under which the Government can use Limited Rights Data and Restricted Rights Software into the alternate clauses II and III of FAR 52.227-14.

(END OF CLAUSE)

**H.9. INFORMATION INCIDENTAL TO CONTRACT ADMINISTRATION (ARC 52.227-98)
(OCT 2004)**

NASA shall have unlimited rights in information incidental to contract administration including administrative and management information created by the Contractor and specified for delivery to NASA in performance of the contract, expressly excluding financial information. Specifically, NASA shall have the right to release such administrative and management information to any third party to satisfy NASA's requirements.

(END OF CLAUSE)

H.10. ORGANIZATIONAL CONFLICTS OF INTEREST, AND LIMITATION ON FUTURE CONTRACTING

(a) The Contracting Officer has determined that this acquisition may give rise to a potential organizational conflict of interest. Accordingly, the attention of prospective Offerors is directed to FAR Subpart 9.5 - Organizational Conflicts of Interest.

(b) The nature of this potential conflict is:

The Requesting Organizations have both NASA and non-NASA customers. Some of those customers include aerospace vehicle designers and manufacturers. Because contractors are involved in new technology development, testing, and fabrication, they are expected to have access to government sensitive and third party proprietary data. If the awardee or a subcontractor were an aerospace vehicle designer or manufacturer, other aerospace vehicle manufacturers might cease to use NASA-ARC expertise and facilities. This would negate the purpose of our laboratories and facilities as a national resource. Access by the awardee to Government-sensitive or third party proprietary data creates a potential organizational conflict of interest.

(c) To avoid, neutralize, or mitigate the potential organizational conflict of interest, the following restrictions upon future contracting shall apply:

(1) If the Contractor, under the terms of this contract, or through the performance of tasks pursuant to this contract, is required to develop specifications or statements of work that are to be incorporated into a solicitation, the Contractor shall be ineligible to perform the work described in that solicitation as a prime or subcontractor under an ensuing NASA contract. This restriction shall remain in effect for a reasonable time, as agreed to by the Contracting Officer and the Contractor, sufficient to avoid unfair competitive advantage or potential bias (this time shall in no case be less than the duration of the initial production contract). NASA shall not unilaterally require the Contractor to prepare such specifications or statements of work under this contract.

(2) The Contractor shall not, during the performance of the contract and for a period of three years following completion of performance thereof, engage in the following activities:

- (i) Design, develop, or produce aerospace vehicles-
- (ii) Participate in competitions, as either a prime proposer or a proposed subcontractor, based upon data obtained because of the Contractor's access to, and support of, the AEMMS

technical requirements, or participate in competitions, as either a prime proposer or a proposed subcontractor, where the Contractor participated in defining requirements of the competition as a result of supporting the AEMMS technical requirements.

(d) If, in the performance of work under this Contract, the Contractor has access to Government Sensitive Data or third-party proprietary data, the Contractor shall protect such data from unauthorized use or disclosure so long as it remains proprietary. In addition, the Contractor shall not be permitted to use such data other than in performance under this Contract, unless:

(1) It receives the explicit written permission of the owner of such data and the Contracting Officer; or

(2) Such data has been released or otherwise made available to the public by the Government or the owner of the third-party proprietary data. In addition, the Contractor agrees that to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (5 U.S.C. 552a), or other confidential or privileged technical, business, or financial information under this Contract, it shall treat such information in accordance with any use or dissemination restrictions imposed on such information. Further, the Contractor shall not submit an unsolicited proposal to the Government which is based on such data until one year after such data is released or otherwise made available to the public; further, any unsolicited proposal submitted pursuant to this provision shall identify any relationship to work produced under this contract and any proposed use of such data.

(e) Additionally:

(1) If, in the performance of work under this Contract, the Contractor enters into a separate agreement with a company for the protection of Government Sensitive Data or third-party proprietary data, the Contractor shall furnish a copy of that agreement to the Contracting Officer.

(2) The Contractor must educate its employees, through formal training, not to divulge Government Sensitive Data or third-party proprietary data, trade secrets, confidential information, or restricted data of companies received in connection with the performance of work under this Contract. The Contractor shall provide a plan to implement this training for the approval of the Contracting Officer.

(3) The Contractor shall obtain from all employees having access to Government Sensitive Data or third-party proprietary data under this Contract a written agreement which shall prohibit those employees, during the term of their employment and thereafter, from disclosing to others or using for their own behalf, such data received in connection with the performance of work under this Contract, and from retaining a copy of such data after termination of their employment under this Contract.

(f) The term "Contractor" as used in this clause shall include:

(i) the corporate or other entity executing this Contract with the Government;

(ii) such entity's parent, subsidiary, affiliate, or successor entities to the extent that the parent, subsidiary, affiliate, or successor entity has responsibility for the performance of work under this Contract; and

(iii) the Contractor's subcontractors that:

- (A) support AEMMS, as delineated in the Statement of Work of this Contract or
- (B) handle, receive, reduce, interpret, or transmit data obtained, used, or produced in conjunction with AEMMS.

(g) The term "Contract" as used in this clause shall include options, extensions, and any successor contracts performed or to be performed by the Contractor without any other contractor intervening.

(h) The term "Data" as used in this clause, means recorded information, regardless of form or media on which it may be recorded. The term includes technical data and computer software. The term further includes Government Sensitive Data or third-party proprietary data including proprietary data, trade secret information, data protected by the Privacy Act of 1974 (5 U.S.C. 552a) and other confidential or privileged technical, business or financial data.

(i) The term "Government Sensitive Data" as used in this clause means data for which the disclosure or use is controlled by the U.S. Statute or implementing published federal regulations or NASA policy and, where so identified, includes data first produced by the Contractor.

(j) The Contractor's Organizational Conflicts of Interest Avoidance Plan is incorporated by reference into this contract (see Attachment J.1(a)6). This Plan addresses Organizational Conflicts of Interest at the contract level. Each individual task order will state if additional Organizational Conflicts of Interest requirements exist and, if so, an additional Organizational Conflicts of Interest Avoidance Plan may be required by the Contracting Officer to address potential conflicts of interest prior to authorization of that task order.

(k) The Contractor shall include paragraphs (a) through (j) of this clause in every subcontract. The Contractor shall be responsible for ensuring compliance with all of the provisions of this clause by each of its subcontractors.

(END OF CLAUSE)

H.11. PATENT RIGHTS

The RFP includes the Patent Rights-Retention by the Contractor Clause (FAR 52.227-11), as modified by 1852.227-11. It is anticipated that the Contractor may have Contractor background inventions that could be applied to Contract research and incorporated into deliverables under the Contract. The Government may need rights to use such Contractor background inventions in order to practice technologies produced under this Contract in other Government contracts. Thus, Contracting Officer permission is required before Contractor background inventions may be included in Contract deliverables. To the extent a contractor background invention has been Federally funded, the Government will receive its government-purpose license rights to practice the background invention. Where there is no Federal funding of the background invention, the Contractor will identify to the Contracting Officer the rights that it proposes to grant the Government to use such invention in other Government contracts. The Government shall receive a government-purpose license to practice any contractor background invention where such Contracting Officer permission is not obtained prior to incorporating its background inventions into Contractor work.

(END OF CLAUSE)

H.12. SEVERENCE PAY (ARC 52.231-90) (JUN 2008)

In conjunction with FAR 31.205-6(g), the severance pay cost shall not exceed 40 hours pay for each year of employment per employee up to a maximum of 80 hours per eligible employee. Severance cost eligibility computation for reimbursement shall also be limited to only the period of employment on the service contract at Ames Research Center. In no event shall the Government reimburse the Contractor for severance cost for employees who voluntarily accept employment in place with the succeeding contractor within ninety (90) days after completion of the current contract.

(END OF CLAUSE)

H.13. PERFORMANCE ASSESSMENT

(a) As part of the Government's surveillance activities, a periodic performance assessment will be conducted under this contract. Information from the assessment may be provided to the contractor for corrective actions and performance improvement. Additionally, these assessments may be considered when the government is considering exercising an option, and may be reviewed as part of the past performance evaluations for future NASA requirements and may be ascertained by other organizations requesting past performance information.

(b) Examples of performance factors that may be used by the Government include but are not limited to the following:

OVERALL MANAGEMENT

Performance in attracting, developing, and retaining professional and management staff that meet the requirements of the contract. Contractor's management policies and procedures (including intellectual property management, organizational conflicts of interest, management and protection of data, handling of data and export control).

QUALITY

Quality of the work performed under the contract or task order.

TIMELINESS

Timeliness of completing the contract or task order milestones and submitting deliverables.

PRICE/COST

Ability to control, adjust and accurately project contract costs (estimated contract costs, not budget or operating plan costs). Ability to control the management and administration costs for this contract. Ability to control the direct labor, indirect and overtime costs. Optimal allocation of resources, including the use of part-time personnel. Cost reductions through the use of cost savings programs, cost avoidance programs, alternate designs and process methods. Reduced purchasing costs through increased use of competition will also be assessed.

OTHER

Ability to manage subcontracts in support of the contract effort. Ability to ensure safety, and compliance with environmental impact restrictions.

(c) Periodic feedback to the Contractor will include an assessment of overall contract performance.

(END OF CLAUSE)

H.14. CONTRACTOR PURCHASING (COST REIMBURSEMENT)

The contract (or task order) Statement of Work (SOW) describes the work to be performed. The contractor may determine a need to procure supplies and services from outside vendors which are incidental to performing this SOW. These purchasing activities should promote competition to the maximum extent possible and promote best value purchases; however, these purchasing functions are limited to necessary and incidental items tied directly to contractor performance. As such, the contractor is prohibited from purchasing items for direct use by the government as these items should be procured by the Government. The contractor shall not perform purchasing functions or act in any other way as an agent for the government. Examples of prohibited purchases that may present themselves for a support service contract include the purchase, for government use, of the following: office supplies, hardware, computers and other peripheral devices, vehicles, personal and convenience items. Other examples of prohibited purchases include: pass-through purchases unrelated to the overall scope of the contract (i.e., non-contract related ODCs). The Contracting Officer at the time of negotiation will make a determination as to the appropriateness of the ODCs being proposed by the contractor. The contractor is required to notify the Contracting Officer of any requests by Government personnel to direct a specific procurement action to a specific source without appropriate justification and approval (see NFS 1806.303-170).

The contractor shall not be entitled to payment or reimbursement for any purchase that is not incidental to the direct performance of the specific work they have agreed to perform under the Contract. Furthermore, the contractor shall not be entitled to payment or reimbursement for any tasks or services performed, nor for any incidental or administrative expenses whatsoever not incurred in or incidental to direct performance of the contract SOW.

(END OF CLAUSE)

H.15. NON-PERSONAL SERVICES

(a) As stated in the Office of Federal Procurement Policy Letter 92-1, dated September 23, 1992, Inherently Governmental Functions, no personal services shall be performed under this contract. No Contractor employee will be directly supervised by the Government. All individual employee assignments, and daily work direction, shall be given by the applicable employee supervisor. If the Contractor believes any Government action or communication has been given that would create a personal services relationship between the Government and any Contractor employee, the Contractor shall promptly notify the Contracting Officer of this communication or action.

(b) The Contractor shall not perform any inherently governmental actions under this contract. No Contractor employee shall hold him or herself out to be a Government employee, agent, or representative. No Contractor employee shall state orally or in writing at any time that he or she is acting on behalf of the Government. In all communications with third parties in connection with this contract, Contractor employees shall identify themselves as Contractor employees and specify the name of the company for which they work. In all communications with other Government contractors in connection with this contract, the Contractor employee shall state that they have no authority to in any way change the contract and that if the other contractor believes this communication to be a direction to change their contract, they should notify the Contracting Officer for that contract and not carry out the direction until a clarification has been issued by the Contracting Officer.

(c) The Contractor shall ensure that all of its employees working on this contract are informed of the substance of this clause. Nothing in this clause shall limit the Government's rights in any way under any other provision of the contract, including those related to the Government's right to inspect and accept the services to be performed under this contract. The substance of this clause shall be included in all subcontracts at any tier.

(END OF CLAUSE)

H.16. MANAGEMENT AND PROTECTION OF DATA (ARC 52.227-93) (JUL 1988)

(a) In the performance of this contract it is anticipated that the Contractor may have access to, be furnished, use, or generate the following types of data (recorded information):

- (1) data submitted to the Government with limited rights or restricted rights notices;
- (2) data of third parties which the Government has agreed to handle under protective arrangements; and
- (3) data generated by or on behalf of the Government which the Government intends to control the use and dissemination thereof.

(b) In order to provide management appropriate for protecting the interests of the Government and other owners of such data, the Contractor agrees with respect to data in category (a)(1) above, and with respect to any data in categories (a)(2) and (a)(3) when so identified by the Contracting Officer, to:

- (1) use and disclose such data only to the extent necessary to perform the work required under this contract, with particular emphasis on restricting disclosure of the data to those persons who have a definite need for the data in order to perform under this contract;
- (2) not reproduce the data unless reproduction of the data is specifically permitted elsewhere in the contract or by the Contracting Officer;
- (3) refrain from disclosing the data to third parties without the written consent of the Contracting Officer; and
- (4) return or deliver the data including all copies thereof to the Contracting Officer or his designated recipient when requested by the Contracting Officer.

(END OF CLAUSE)

H.17. HANDLING OF DATA (ARC 52.227-96) (JUN 1989)

(a) Paragraph (d)(1) of the "Rights in Data--General" clause of this contract permits the Government to restrict the Contractor's right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Contractor in the performance of the contract provided such restriction is expressly set forth in the contract. Pursuant to this authority, the following restrictions shall apply to such data and shall be included, in substance, in all subcontracts:

- (b) Data specifically used.

(1) In the performance of this contract, it is anticipated the Contractor may have access, or be furnished, data (including financial, administrative, cost or pricing, or management information as well as technical data or computer software) of third parties which the Government has agreed to handle under protective arrangements, as well as such Government data for which the Government intends to control the use and dissemination.

(2) In order to protect the interests of the Government and the owners of such data, the Contractor agrees, with respect to such third party or Government data that is either marked with a restrictive legend or specifically identified in this contract or in writing by the Contracting Officer as being subject to this clause, to use and disclose such data only to the extent necessary to perform the work required under this contract, preclude disclosure of such data outside the Contractor's organization, and return or dispose of such data as directed by the Contracting Officer when the data is no longer needed for contract performance.

(3) Notwithstanding (2) above, the Contractor shall not be restricted in the use and disclosure of any data that becomes generally available without breach of this clause by this Contractor, is known to or is developed by the Contractor independently of any disclosure of proprietary, restricted, or confidential data hereunder, or is rightfully received by the Contractor from a third party without restriction.

(c) Data first produced.

Data first produced by the Contractor under this contract may include data for which the Government wants to control the use and dissemination. The Contracting Officer may require, or this contract may presently specify, that the Contractor apply restrictive legends to such identified data prior to delivery to the Government, or to third parties at the Government's direction, that restrict the use and disclosure of the data by any third party recipient. However, such restrictive legends shall in no way affect the Contractor's or the Government's rights to such data as provided in the "Rights in Data--General" clause of this contract.

(END OF CLAUSE)

[END OF SECTION]

PART II - CONTRACT CLAUSES**SECTION I - CONTRACT CLAUSES****I.1. LISTING OF 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):

FAR website:

<http://acquisition.gov/far/index.html>

NFS website:

<http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm>**I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)**

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
52.202-1	JUL 2004	DEFINITIONS
52.203-3	APR 1984	GRATUITIES
52.203-5	APR 1984	COVENANT AGAINST CONTINGENT FEES
52.203-6	SEP 2006	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	SEP 2007	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS
52.203-13	DEC 2008	CONTRACTOR CODE OF BUSINESS ETHICS AND CONDUCT
52.203-14	DEC 2007	DISPLAY OF HOTLINE POSTER(S)
52.203-15	MAR 2009	WHISTLEBLOWER PROTECTIONS UNDER THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009
52.204-4	AUG 2000	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER
52.204-7	APR 2008	CENTRAL CONTRACTOR REGISTRATION
52.204-11	MAR 2009	AMERICAN RECOVERY AND REINVESTMENT ACT—REPORTING REQUIREMENTS
52.209-6	SEP 2006	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT
52.211-15	APR 2008	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS
52.215-2	MAR 2009	AUDIT AND RECORDS – NEGOTIATION, ALTERNATE I

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
52.215-8	OCT 1997	ORDER OF PRECEDENCE - UNIFORM CONTRACT FORMAT
52.215-11	OCT 1997	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA -- MODIFICATIONS
52.215-13	OCT 1997	SUBCONTRACTOR COST OR PRICING DATA -- MODIFICATIONS
52.215-15	OCT 2004	PENSION ADJUSTMENTS AND ASSET REVERSIONS
52.215-17	OCT 1997	WAIVER OF FACILITIES CAPITAL COST OF MONEY
52.215-18	JUL 2005	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS
52.215-21	OCT 1997	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA - MODIFICATIONS
52.216-7	DEC 2002	ALLOWABLE COST AND PAYMENT (<i>Insert "30 DAYS" in paragraph (a)(3)</i>)
52.216-8	MAR 1997	FIXED FEE
52.216-18	OCT 1995	ORDERING (<i>Insert "DATE OF CONTRACT AWARD" through "TWO YEARS FROM THE EFFECTIVE DATE OF THE CONTRACT" in paragraph (a)</i>)
52.216-19	OCT 1995	ORDER LIMITATIONS (<i>Insert "\$1K", "\$4.6M", "\$23M", "30 DAYS", and "5 DAYS" in paragraphs (a), (b)(1), (b)(2), (b)(3) and (d), respectively</i>)
52.216-22	OCT 1995	INDEFINITE QUANTITY (<i>Insert "1 YEAR FROM THE END DATE OF THE CONTRACT" in paragraph (d)</i>)
52.217-8	NOV 1999	OPTION TO EXTEND SERVICES (<i>Insert "30 DAYS"</i>)
52.217-9	MAR 2000	OPTION TO EXTEND THE TERM OF THE CONTRACT (<i>Insert "15 days" and "30 days" in paragraph (a). Insert "5 years" in paragraph (c).</i>)
52.219-6	JUN 2003	NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE
52.219-8	MAY 2004	UTILIZATION OF SMALL BUSINESS CONCERNS
52.219-14	DEC 1996	LIMITATIONS ON SUBCONTRACTING
52.219-28	APR 2009	POST-AWARD SMALL BUSINESS PROGRAM REREPRESENTATION
52.222-2	JUL 1990	PAYMENT FOR OVERTIME PREMIUMS (<i>Insert: "\$0" in paragraph (a)</i>)
52.222-3	JUN 2003	CONVICT LABOR
52.222-21	FEB 1999	PROHIBITION OF SEGREGATED FACILITIES
52.222-26	MAR 2007	EQUAL OPPORTUNITY
52.222-36	SEP 2006	EQUAL OPPORTUNITIES FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA AND OTHER SPECIAL VETERANS
52.222-36	JUN 1998	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
52.222-37	SEP 2006	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.222-50	FEB 2009	COMBATING TRAFFICKING IN PERSONS
52.222-54	JAN 2009	EMPLOYMENT ELIGIBILITY VERIFICATION
52.223-5	AUG 2003	POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (ALT I)(AUG 2003) (ALT II)(AUG 2003)
52.223-6	MAY 2001	DRUG-FREE WORKPLACE
52.223-10	AUG 2000	WASTE REDUCTION PROGRAM
52.223-14	AUG 2003	TOXIC CHEMICAL RELEASE REPORTING
52.223-15	DEC 2007	ENERGY EFFICIENCY IN ENERGY-CONSUMING PRODUCTS
52.225-1	FEB 2009	BUY AMERICAN ACT-SUPPLIES
52.225-13	JUN 2008	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES
52.227-1	DEC 2007	AUTHORIZATION AND CONSENT (ALT I) (APR 1984)
52.227-2	DEC 2007	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT
52.227-11	DEC 2007	PATENT RIGHTS—OWNERSHIP BY THE CONTRACTOR
52.227-14	DEC 2007	RIGHTS IN DATA – GENERAL (DEC 2007)(ALT II) (<i>Insert:</i> (i) Use (except for manufacture) by support service contractors. (ii) Evaluation by nongovernment evaluators. (iii) Use (except for manufacture) by other contractors participating in the Government's program of which the specific contract is part. <i>at the end of paragraph(a))(DEC 2007) (ALT III) (DEC 2007)(AS MODIFIED BY NFS 1852.227-14, RIGHTS IN DATA – GENERAL)</i>
52.227-16	JUN 1987	ADDITIONAL DATA REQUIREMENTS
52.227-17	DEC 2007	RIGHTS IN DATA – SPECIAL WORKS (AS MODIFIED BY NFS 1852.227-17, RIGHTS IN DATA – SPECIAL WORKS)
52.227-23	JUN 1987	RIGHTS TO PROPOSAL DATA (TECHNICAL) Page Numbers: All Proposal Date: 1/13/10
52.228-7	MAR 1996	INSURANCE-LIABILITY TO THIRD PERSONS
52.230-6	MAR 2008	ADMINISTRATION OF COST ACCOUNTING STANDARDS
52.232-9	APR 1984	LIMITATION ON WITHHOLDING OF PAYMENTS
52.232-17	OCT 2008	INTEREST
52.232-18	APR 1984	AVAILABILITY OF FUNDS
52.232-20	APR 1984	LIMITATION OF COST
52.232-22	APR 1984	LIMITATION OF FUNDS
52.232-23	JAN 1986	ASSIGNMENT OF CLAIMS
52.232-25	OCT 2008	PROMPT PAYMENT (ALT I) (FEB 2002)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
52.232-34	MAY 1999	PAYMENT BY ELECTRONIC FUNDS TRANSFER- OTHER THAN CENTRAL CONTRACTOR REGISTRATION (<i>Insert: "no later than 15 days prior to submission of the first request for payment" in paragraph (b)(1)</i>)
52.233-1	JUL 2002	DISPUTES (ALTERNATE I) (DEC 1991)
52.233-3	AUG 1996	PROTEST AFTER AWARD (ALT I) (JUN 1985)
52.233-4	OCT 2004	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM
52.237-2	APR 1984	PROTECTION OF GOVERNMENT BUILDINGS, EQUIPMENT, AND VEGETATION
52.237-3	JAN 1991	CONTINUITY OF SERVICES
52.239-1	AUG 1996	PRIVACY OR SECURITY SAFEGUARDS
52.242-1	APR 1984	NOTICE OF INTENT TO DISALLOW COSTS
52.242-3	MAY 2001	PENALTIES FOR UNALLOWABLE COSTS
52.242-4	JAN 1997	CERTIFICATION OF FINAL INDIRECT COSTS
52.242-13	JUL 1995	BANKRUPTCY
52.243-2	AUG 1987	CHANGES-COST-REIMBURSEMENT (ALT I) (APR 1984)
52.244-2	JUN 2007	SUBCONTRACTS (<i>Insert: "TBD" in paragraphs (d) and (j)</i>) (ALT 1) (JUN 2007)
52.244-5	DEC 1996	COMPETITION IN SUBCONTRACTING
52.244-6	AUG 2009	SUBCONTRACTS FOR COMMERCIAL ITEMS
52.245-1	JUN 2007	GOVERNMENT PROPERTY
52.245-9	JUN 2007	USE AND CHARGES
52.247-1	FEB 2006	COMMERCIAL BILL OF LADING NOTATIONS
52.249-6	MAY 2004	TERMINATION (COST-REIMBURSEMENT)
52.249-14	APR 1984	EXCUSABLE DELAYS
52.251-1	APR 1984	GOVERNMENT SUPPLY SOURCES
52.253-1	JAN 1991	COMPUTER GENERATED FORM/S

II. NASA FAR SUPPLEMENT (48 CFR CHAPTER 18)

<u>CLAUSE NO.</u>	<u>DATE</u>	<u>TITLE</u>
1852.216-89	JUL 1997	ASSIGNMENT AND RELEASE FORMS
1852.219-74	SEP 1990	USE OF RURAL AREA SMALL BUSINESSES
1852.219-76	JUL 1997	NASA 8 PERCENT GOAL
1852.223-74	MAR 1996	DRUG- AND ALCOHOL-FREE WORKPLACE
1852.227-11	---	PATENT RIGHTS—RETENTION BY THE CONTRACTOR (SHORT FORM) ** Modifies FAR Clause 52.227-11**
1852.228-75	OCT 1998	MINIMUM INSURANCE COVERAGE
1852.235-70	DEC 2006	CENTER FOR AEROSPACE INFORMATION
1852.237-70	DEC 1988	EMERGENCY EVACUATION PROCEDURES
1852.237-72	JUN 2005	ACCESS TO SENSITIVE INFORMATION
1852.237-73	JUN 2005	RELEASE OF SENSITIVE INFORMATION
1852.242-78	APR 2001	EMERGENCY MEDICAL SERVICES AND EVACUATION

(END OF CLAUSE)

I.2. PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL (FAR 52.204-9) (SEP 2007)

(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 and Federal Information Processing Standards Publication (FIPS PUB) Number 201.

(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.

FIPS 201 graphically displays the following procedure for the issuance of a PIV credential.

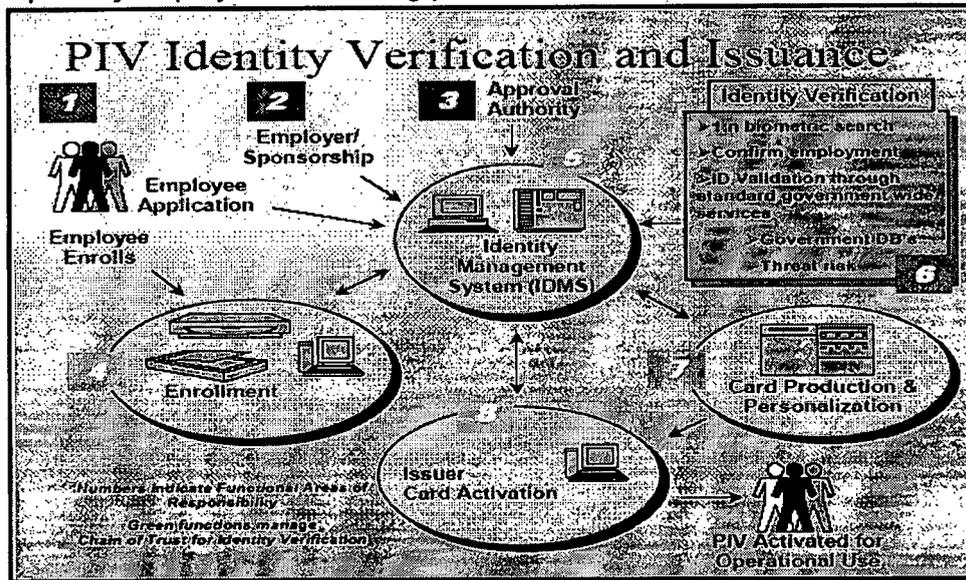


Figure A-1, FIPS 201, Appendix A

The following steps describe the procedures for the NASA Personal Identity Verification Card Issuance (PCI) of a PIV credential:

Step 1:

The Contractor's Corporate Security Officer (CSO), Program Manager (PM), or Facility Security Officer (FSO) submits a formal letter that provides a list of contract employees (applicant) names requesting access to the NASA Contracting Officer's Technical Representative (COTR). In the case of a foreign national applicant, approval through the NASA Foreign National Management System (NFMMS) must be obtained for the visit or assignment before any processing for a PIV credential can take place. Further, if the foreign national is not under a contract where a COTR has been officially designated, the foreign national will provide the information directly to their visit/assignment host, and the host sponsor will fulfill the duties of the COTR mentioned herein. In each case, the letter shall provide notification of the contract or foreign national employee's (hereafter the "applicant") full name (first, middle and last), social security number (SSN) or NASA Foreign National Management System Visitor Number if the foreign national does not have a SSN, and date of birth. If the contract employee has a current satisfactorily completed National Agency Check with Inquiries (NACI) or an equivalent or higher degree of background investigation, the letter shall indicate the type of investigation, the agency completing the investigation, and date the investigation was completed. Also, the letter must

specify the risk/sensitivity level associated with the position in which each applicant will be working (NPR 1600.1, §4.5 is germane) Further, the letter shall also acknowledge that contract employees may be denied access to NASA information or information systems based on an unsatisfactory background investigation/adjudication. .

After reviewing the letter for completeness and concurring with the risk/sensitivity levels, the COTR/host must forward the letter to the Center Chief of Security (CCS). The CCS shall review the OPM databases (e.g., DCII, PIP, et al.), and take appropriate steps to validate the applicant's investigation status. Requirements for a NACI or other investigation shall be initiated only if necessary.

Applicants who do not currently possess the required level of background investigation shall be directed to the e-QIP web site to complete the necessary background investigation forms online. The CCS shall provide to the COTR/host information and instructions on how to access the e-QIP for each contract or foreign national employee requiring access

Step 2:

Upon acceptance of the letter/background information, the applicant will be advised that in order to complete the investigative process, he or she must appear in-person before the authorized PIV registrar and submit two forms of identity source documents in original form. The identity source documents must come from the list of acceptable documents included in Form I-9, Employment Eligibility Verification, one which must be a Federal¹ or State issued picture identification. Fingerprints will be taken at this time. The applicant must appear **no later than** the entry on duty date.

When the applicant appears, the registrar will electronically scan the submitted documents; any document that appears invalid will be rejected by the registrar. The registrar will capture electronically both a facial image and fingerprints of the applicant. The information submitted by the applicant will be used to create or update the applicant identity record in the Identity Management System (IDMS).

Step 3:

Upon the applicant's completion of the investigative document, the CCS reviews the information, and resolves discrepancies with the applicant as necessary. When the applicant has appeared in person and completed fingerprints, the package is electronically submitted to initiate the NACI. The CCS includes a request for feedback on the NAC portion of the NACI at the time the request is submitted.

Step 4:

Prior to authorizing physical access of a contractor employee to a federally-controlled facility or access to a Federal information system, the CCS will ensure that a check has been performed with the National Crime Information Center (NCIC) and Interstate Identification Index. In the case of a foreign national, a national check of the Bureau of Immigration and Customs Enforcement (BICE) database will be performed for each applicant. If this process yields negative information, the CCS will immediately notify the COTR/host of the determination regarding access made by the CCS.

¹ A non-PIV government identification badge, including the NASA Photo Identification Badge, MAY NOT BE USED for the original issuance of a PIV vetted credential

Step 5:

Upon receipt of the completed NAC, the CCS will update IDMS from the NAC portion of the NACI and indicate the result of the suitability determination. If an unsatisfactory suitability determination is rendered, the COTR will advise the contractor that the employee is being denied physical access to all federally-controlled facilities and Federal information systems.

Based on a favorable NAC and NCIC/III or BICE check, the CCS will authorize the issuance of a PIV federal credential in the Physical Access Control System (PACS) database. The CCS, based on information provided by the COTR/host, will determine what physical access the applicant should be granted once the PIV issues the credential.

Step 6:

Using the information provided by the applicant during his or her in-person appearance, the PIV card production facility creates and instantiates the approved PIV card for the applicant with an activation date commensurate with the applicant's start date.

Step 7:

The applicant proceeds to the credential issuance facility to begin processing for receipt of his/her federal credential.

The applicant provides to the credential issuing operator proof of identity with documentation that meets the requirements of FIPS 201 (DHS Employment Eligibility Verification (Form I-9) documents. These documents **must** be the same documents submitted for registration.

The credential issuing operator will verify that the facial image, and optionally reference finger print, matches the enrollment data used to produce the card. Upon verification of identity, the operator will locate the employee's record in the PACS database, and modify the record to indicate the PIV card has been issued. The applicant will select a PIN for use with his or her new PIV card. Although root data is inaccessible to the operator, certain fields (hair color, eye color, et al.) may be modified to more accurately record the employee's information.

The applicant proceeds to a kiosk or other workstation to complete activation of the PIV card using the initial PIN entered at card issuance.

**ALTERNATIVE FOR APPLICANTS WHO DO NOT HAVE A COMPLETED AND
ADJUDICATED NAC AT THE TIME OF ENTRANCE ON DUTY**

Steps 1 through 4 shall be accomplished for all applicants in accordance with the process described above. If the applicant is unable to appear in person until the time of entry on duty, or does not, for any other reason, have a completed and adjudicated NAC portion of the NACI at the time of entrance on duty, the following interim procedures shall apply.

1. If the documents required to submit the NACI have not been completed prior to EOD, the applicant will be instructed to complete all remaining requirements for submission of the investigation request. This includes presentation of I-9 documents and completion of fingerprints, if not already accomplished. If the applicant fails to complete these activities as prescribed in NPR 1600.1 (Chapters 3 & 4), it may be considered as failure to meet the conditions required for physical access to a federally-controlled facility or access to a Federal information system, and result in denial of such access.

2. Based on favorable results of the NCIC, the applicant shall be issued a temporary NASA identification card for a period not-to-exceed six months. If at the end of the six month period the NAC results have not been returned, the agency will at that time make a determination if an additional extension will be granted for the temporary identification card.
3. Upon return of the completed NAC, the process will continue from Step 5.

(END OF CLAUSE)

I.3. NOTIFICATION OF OWNERSHIP CHANGES (FAR 52.215-19) (OCT 1997)

- (a) The Contractor shall make the following notifications in writing:
- (1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.
 - (2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.
- (b) The Contractor shall—
- (1) Maintain current, accurate, and complete inventory records of assets and their costs;
 - (2) Provide the ACO or designated representative ready access to the records upon request;
 - (3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and
 - (4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.
- (c) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(END OF CLAUSE)

I.4. NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNION DUES OR FEES (FAR 52.222-39) (DEC 2004)

- (a) *Definition.* As used in this clause—
- "United States" means the 50 States, the District of Columbia, Puerto Rico, the Northern Mariana Islands, American Samoa, Guam, the U.S. Virgin Islands, and Wake Island.
- (b) Except as provided in paragraph (e) of this clause, during the term of this contract, the Contractor shall post a notice, in the form of a poster, informing employees of their rights concerning union membership and payment of union dues and fees, in conspicuous places in and about all its plants and offices, including all places where notices to employees are customarily posted. The notice shall include the following information (except that the information pertaining to National Labor Relations Board shall not be included in notices posted in the plants or offices of carriers subject to the Railway Labor Act, as amended 45 U.S.C. 151-188).

Notice to Employees

Under Federal law, employees cannot be required to join a union or maintain membership in a union in order to retain their jobs. Under certain conditions, the law permits a union and an employer to enter into a union-security agreement requiring employees to pay uniform periodic dues and initiation fees. However, employees who are not union members can object to the use of their payments for certain purposes and can only be required to pay their share of union costs relating to collective bargaining, contract administration, and grievance adjustment.

If you do not want to pay that portion of dues or fees used to support activities not related to collective bargaining, contract administration, or grievance adjustment, you are entitled to an appropriate reduction in your payment. If you believe that you have been required to pay dues or fees used in part to support activities not related to collective bargaining, contract administration, or grievance adjustment, you may be entitled to a refund and to an appropriate reduction in future payments.

For further information concerning your rights, you may wish to contact the National Labor Relations Board (NLRB) either at one of its Regional offices or at the following address or toll free number:

National Labor Relations Board
Division of Information
1099 14th Street, N.W.
Washington, DC 20570
1-866-667-6572
1-866-316-6572 (TTY)

To locate the nearest NLRB office, see NLRB's website at <http://www.nlr.gov>

(c) The Contractor shall comply with all provisions of Executive Order 13201 of February 17, 2001, and related implementing regulations at 29 CFR Part 470, and orders of the Secretary of Labor.

(d) In the event that the Contractor does not comply with any of the requirements set forth in paragraphs (b), (c), or (g), the Secretary may direct that this contract be cancelled, terminated, or suspended in whole or in part, and declare the Contractor ineligible for further Government contracts in accordance with procedures at 29 CFR Part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures. Such other sanctions or remedies may be imposed as are provided by 29 CFR Part 470, which implements Executive Order 13201, or as are otherwise provided by law.

(e) The requirement to post the employee notice in paragraph (b) does not apply to—

- (1) Contractors and subcontractors that employ fewer than 15 persons;
- (2) Contractor establishments or construction work sites where no union has been formally recognized by the Contractor or certified as the exclusive bargaining representative of the Contractor's employees;
- (3) Contractor establishments or construction work sites located in a jurisdiction named in the definition of the United States in which the law of that jurisdiction forbids enforcement of union-security agreements;
- (4) Contractor facilities where upon the written request of the Contractor, the Department of Labor Deputy Assistant Secretary for Labor-Management Programs has waived the posting

requirements with respect to any of the Contractor's facilities if the Deputy Assistant Secretary finds that the Contractor has demonstrated that—

(i) The facility is in all respects separate and distinct from activities of the Contractor related to the performance of a contract; and

(ii) Such a waiver will not interfere with or impede the effectuation of the Executive order; or

(5) Work outside the United States that does not involve the recruitment or employment of workers within the United States.

(f) The Department of Labor publishes the official employee notice in two variations; one for contractors covered by the Railway Labor Act and a second for all other contractors. The Contractor shall—

(1) Obtain the required employee notice poster from the Division of Interpretations and Standards, Office of Labor-Management Standards, U.S. Department of Labor, 200 Constitution Avenue, NW, Room N-5605, Washington, DC 20210, or from any field office of the Department's Office of Labor-Management Standards or Office of Federal Contract Compliance Programs;

(2) Download a copy of the poster from the Office of Labor-Management Standards website at <http://www.olms.dol.gov> or

(3) Reproduce and use exact duplicate copies of the Department of Labor's official poster.

(g) The Contractor shall include the substance of this clause in every subcontract or purchase order that exceeds the simplified acquisition threshold, entered into in connection with this contract, unless exempted by the Department of Labor Deputy Assistant Secretary for Labor-Management Programs on account of special circumstances in the national interest under authority of 29 CFR 470.3(c). For indefinite quantity subcontracts, the Contractor shall include the substance of this clause if the value of orders in any calendar year of the subcontract is expected to exceed the simplified acquisition threshold. Pursuant to 29 CFR Part 470, Subpart B—Compliance Evaluations, Complaint Investigations and Enforcement Procedures, the Secretary of Labor may direct the Contractor to take such action in the enforcement of these regulations, including the imposition of sanctions for noncompliance with respect to any such subcontract or purchase order. If the Contractor becomes involved in litigation with a subcontractor or vendor, or is threatened with such involvement, as a result of such direction, the Contractor may request the United States, through the Secretary of Labor, to enter into such litigation to protect the interests of the United States.

(END OF CLAUSE)

I.5. SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION TECHNOLOGY RESOURCES (NFS 1852.204-76) (OCT 2009)(DEVIATION)

(a) The Contractor shall protect the confidentiality, integrity, and availability of NASA Electronic Information and IT resources and protect NASA Electronic Information from unauthorized disclosure.

(b) This clause is applicable to all NASA contractors and subcontractors that process, manage, access, or store unclassified electronic information, to include Sensitive But Unclassified (SBU) information, for NASA in support of NASA's missions, programs, projects and/or institutional requirements. Applicable requirements, regulations, policies, and guidelines are identified in the Applicable Documents List (ADL) provided as an attachment to the contract. The documents listed in the ADL can be found at:

www.nasa.gov/offices/ocio/itsecurity/index.html For policy information considered sensitive, the documents will be identified as such in the ADL and made available through the Contracting Officer.

(c) Definitions

(1) IT resources means any hardware or software or interconnected system or subsystem of equipment, that is used to process, manage, access, or store electronic information.

(2) NASA Electronic Information is any data (as defined in the Rights in Data clause of this contract) or information (including information incidental to contract administration, such as financial, administrative, cost or pricing, or management information) that is processed, managed, accessed or stored on an IT system(s) in the performance of a NASA contract.

(3) IT Security Management Plan -- This plan shall describe the processes and procedures that will be followed to ensure appropriate security of IT resources that are developed, processed, or used under this contract.

(4) IT Security Plan – this is a FISMA requirement; see the ADL for applicable requirements.

Within 30 days after contract award, the Contractor shall develop and deliver an IT Security Management Plan. The delivery address and approval authority will be included in the ADL. All contractor personnel requiring physical or logical access to NASA IT resources must complete NASA's annual IT Security Awareness training. Refer to the IT Training policy located in the IT Security website at <https://itsecurity.nasa.gov/policies/index.html>

(d) The Contractor shall afford Government 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 a program of IT inspection (to include vulnerability testing), investigation and audit to safeguard against threats and hazards to the integrity, availability, and confidentiality of NASA Electronic Information or to the function of IT systems operated on behalf of NASA, and to preserve evidence of computer crime.

(e) 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 in accordance with retention documentation available in the ADL. The Contractor shall provide a listing of all NASA Electronic information and IT resources generated in performance of the contract. At that time, the Contractor shall request disposition instructions from the Contracting Officer. The Contracting Officer will provide disposition instructions within 30 calendar days of the contractor's request.

(f) The Contracting Officer may waive specific requirements of this clause upon request of the contractor. The Contractor shall provide all relevant information requested by the Contracting Officer to support the waiver request.

The Contractor shall insert this clause, including this paragraph in all subcontracts that process, manage, access or store NASA Electronic Information in support of the mission of the Agency.

(END OF CLAUSE)

I.6. SHARED SAVINGS (NFS 1852.243-71) (MARCH 1997)

(a) The Contractor is entitled, under the provisions of this clause, to share in cost savings resulting from the implementation of cost reduction projects which are presented to the Government in the form of Cost Reduction Proposals (CRP) and approved by the Contracting Officer. These cost reduction projects may require changes to the terms, conditions or statement of work of this contract. Any cost reduction projects must not change the essential function of any products to be delivered or the essential purpose of services to be provided under the contract.

(b) Definitions:

(1) **Cost savings**, as contemplated by this clause mean savings that result from instituting changes to the covered contract, as identified in an approved Cost Reduction Proposal.

(2) **Cost Reduction Proposal** - For the purposes of this clause, a Cost Reduction Proposal means a proposal that recommends alternatives to the established procedures and/or organizational support of a contract or group of contracts. These alternatives must result in a net reduction of contract cost and price to NASA. The proposal will include technical and cost information sufficient to enable the Contracting Officer to evaluate the CRP and approve or disapprove it.

(3) **Covered contract** - As used in this provision, covered contract means the contract, including unexercised options but excluding future contracts, whether contemplated or not, against which the CRP is submitted.

(4) **Contractor implementation costs** - As used in this provision, Contractor implementation costs, or "implementation costs", shall mean those costs which the Contractor incurs on covered contracts specifically in developing, preparing, submitting, and negotiating a CRP, as well as those costs the Contractor will incur on covered contracts to make any structural or organizational changes in order to implement an approved CRP.

(5) **Government costs** - As used in this provision, the term Government costs means internal costs of NASA, or any other Government agency, which result directly from development and implementation of the CRP. These may include, but are not limited to, costs associated with the administration of the contract or with such contractually related functions such as testing, operations, maintenance and logistics support. These costs also include costs associated with other Agency contracts (including changes in contract price or cost and fee) that may be affected as a result of the implementation of a CRP. They do not include the normal administrative costs of reviewing and processing the Cost Reduction Proposal.

(c) **General.** The Contractor will develop, prepare and submit CRP's with supporting information as detailed in paragraph (e) of this clause, to the Contracting Officer. The CRP will describe the proposed cost reduction activity in sufficient detail to enable the Contracting Officer to evaluate it and to approve or disapprove it. The Contractor shall share in any net cost savings realized from approved and implemented CRPs in accordance with the terms of this clause. The Contractor's actual percentage share of the cost savings shall be a matter for negotiation with the Contracting Officer, but shall not, in any event, exceed 50 percent of the total cost savings recognized by the Contracting Officer. The Contractor may propose changes in other activities that impact performance on its contract, including Government and other Contractor operations, if such changes will optimize cost savings. A Contractor shall not be entitled to share, however, in any cost savings that are internal to the Government, or which result from changes made to any contracts to which it is not a party even if those changes were proposed as a part of its CRP. Early communication between the Contractor and Government is encouraged. The

communication may be in the form of a concept paper or preliminary proposal. The Government is not committed to accepting any proposal as a result of these early discussions.

(d) Computation of cost savings. The cost savings to be shared between the Government and the Contractor will be computed by the Contracting Officer by comparing a current estimate to complete (ETC) for the covered contract, as structured before implementation of the proposed CRP, to a revised ETC which takes into account the implementation of that CRP. The cost savings to be shared shall be reduced by any cost overrun, whether experienced or projected, that is identified on the covered contract before implementation of the CRP. Although a CRP may result in cost savings that extend far into the future, the period in which the Contractor may share in those savings will be limited to no more than five years. Implementation costs of the Contractor must be considered and specifically identified in the revised ETC. The Contracting Officer shall offset Contractor cost savings by any increased costs (whether implementing or recurring) to the Government when computing the total cost savings to be shared. The Contractor shall not be entitled, under the provisions of this clause, to share in any cost reductions to the contract that are the result of changes stemming from any action other than an approved CRP. However, this clause does not limit recovery of any such reimbursements that are allowed as a result of other contract provisions.

(e) Supporting Information. As a minimum, the Contractor shall provide the following supporting information with each CRP:

(1) Identification of the current contract requirements or established procedures and/or organizational support which are proposed to be changed.

(2) A description of the difference between the current process or procedure and the proposed change. This description shall address how proposed changes will meet NASA requirements and discuss the advantages and disadvantages of the existing practice and the proposed changes.

(3) A list of contract requirements which must be revised, if any, if the CRP is approved, along with proposed revisions. Any changes to NASA or delegated contract management processes should also be addressed.

(4) Detailed cost estimates which reflect the implementation costs of the CRP.

(5) An updated ETC for the covered contract, unchanged, and a revised ETC for the covered contract which reflects changes resulting from implementing the CRP. If the CRP proposes changes to only a limited number of elements of the contract, the ETCs need only address those portions of the contract that have been impacted. Each ETC shall depict the level of costs incurred or to be incurred by year, or to the level of detail required by the Contracting Officer. If other CRPs have been proposed or approved on a contract, the impact of these CRPs must be addressed in the computation of the cost savings to ensure that the cost savings identified are attributable only to the CRP under consideration in the instant case.

(6) Identification of any other previous submissions of the CRP, including the dates submitted, the agencies and contracts involved, and the disposition of those submittals.

(f) Administration.

(1) The Contractor shall submit proposed CRPs to the Contracting Officer who shall be responsible for the review, evaluation and approval. Normally, CRP's should not be entertained for the first year of performance to allow the Contracting Officer to assess performance against the basic requirements. If a cost reduction project impacts more than a single contract, the Contractor may, upon concurrence of the Contracting Officers responsible for the affected contracts, submit a single CRP which addresses fully the cost savings projected on all affected contracts that contain this Shared Savings Clause. In the case of multiple contracts affected,

responsibility for the review and approval of the CRP will be a matter to be decided by the affected Contracting Officers.

(2) Within 60 days of receipt, the Contracting Officer shall complete an initial evaluation of any proposed cost reduction plan to determine its feasibility. Failure of the Contracting Officer to provide a response within 60 days shall not be construed as approval of the CRP. The Government shall promptly notify the Contractor of the results of its initial evaluation and indicate what, if any, further action will be taken. If the Government determines that the proposed CRP has merit, it will open discussions with the Contractor to establish the cost savings to be recognized, the Contractor's share of the cost savings, and a payment schedule. The Contractor shall continue to perform in accordance with the terms and conditions of the existing contract until a contract modification is executed by the Contracting Officer. The modification shall constitute approval of the CRP and shall incorporate the changes identified by the CRP, adjust the contract cost and/or price, establish the Contractor's share of cost savings, and incorporate the agreed to payment schedule.

(3) The Contractor will receive payment by submitting invoices to the Contracting Officer for approval. The amount and timing of individual payments will be made in accordance with the schedule to be established with the Contracting Officer. Notwithstanding the overall savings recognized by the Contracting Officer as a result of an approved CRP, payment of any portion of the Contractor's share of savings shall not be made until NASA begins to realize a net cost savings on the contract (i.e., implementation, startup and other increased costs resulting from the change have been offset by cumulative cost savings). Savings associated with unexercised options will not be paid unless and until the contract options are exercised. It shall be the responsibility of the Contractor to provide such justification as the Contracting Officer deems necessary to substantiate that cost savings are being achieved.

(4) Any future activity, including a merger or acquisition undertaken by the Contractor (or to which the Contractor becomes an involved party), which has the effect of reducing or reversing the cost savings realized from an approved CRP for which the Contractor has received payment may be cause for recomputing the net cost savings associated with any approved CRP. The Government reserves the right to make an adjustment to the Contractor's share of cost savings and to receive a refund of moneys paid if necessary. Such adjustment shall not be made without notifying the Contractor in advance of the intended action and affording the Contractor an opportunity for discussion.

(g) Limitations. Contract requirements that are imposed by statute shall not be targeted for cost reduction exercises. The Contractor is precluded from receiving reimbursements under both this clause and other incentive provisions of the contract, if any, for the same cost reductions.

(h) Disapproval of, or failure to approve, any proposed cost reduction proposal shall not be considered a dispute subject to remedies under the Disputes clause.

(i) Cost savings paid to the Contractor in accordance with the provisions of this clause do not constitute profit or fee within the limitations imposed by 10 U.S.C. 2306(d) and 41 U.S.C. 254(b).

(End of Clause)

1.7. OMBUDSMAN (NFS 1852.215-84) (OCT 2003) (ALTERNATE I) (JUN 2000)

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from Offerors, potential Offerors, and contractors during the pre-award and post-award 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,

NASA Ames Research Center
Lewis S. Braxton, III
Director of Center Operations; M/S 200-8
Moffett Field, CA 94035-1000
Telephone: (650) 604-5068
FAX: (650) 604-1668
Email: Lewis.S.Braxton@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.

(c) If this is a task or delivery order contract, the ombudsman shall review complaints from contractors and ensure they are afforded a fair opportunity to be considered, consistent with the procedures of the contract.

(END OF CLAUSE)

I.8. AUTHORIZED DEVIATIONS IN CLAUSES (FAR 52.252-6)(APR 1984)

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this solicitation or contract of any NASA FAR Supplement (48 CFR CHAPTER 18) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(END OF CLAUSE)

[END OF SECTION]

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,

NASA Ames Research Center
Lewis S. Braxton, III
Director of Center Operations; M/S 200-8
Moffett Field, CA 94035-1000
Telephone: (650) 604-5068
FAX: (650) 604-1668
Email: Lewis.S.Braxton@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.

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(b) The use in this solicitation or contract of any NASA FAR Supplement (48 CFR CHAPTER 18) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(END OF CLAUSE)

I.9 AVAILABILITY OF FUNDS FOR THE NEXT FISCAL YEAR (FAR 52.232-19)(APR 1984)

Funds are not presently available for performance under this contract beyond September 30, 2010. The Government's obligation for performance of this contract beyond that date 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 for performance under this contract beyond September 30, 2010, until funds are made available to the Contracting Officer for performance and until the Contractor receives notice of availability, to be confirmed in writing by the Contracting Officer.

(END OF CLAUSE)

[END OF SECTION]

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1 CONTRACT ID CODE	PAGE 1	OF 2	PAGES 2
2 AMENDMENT/MODIFICATION NO. Modification No. One (1)	3 EFFECTIVE DATE See Block 16c	4 REQUISITION/PURCHASE REQ. NO Not Applicable	5 PROJECT NO (If applicable)			
6 ISSUED BY NASA Ames Research Center Acquisition Branch for Mission Support Moffett Field, CA 94035-1000	CODE JAC	7 ADMINISTERED BY (If other than Item 6) Naomi Castillo-Velasquez, Mail Stop 243-1 Phone: 650-604-3421 Fax: 650-604-3952 Email: Naomi.Castillo-Velasquez@nasa.gov		CODE JAC		
8 NAME AND ADDRESS OF CONTRACTOR (No. Street, county, State and ZIP Code) Science and Technology Corporation 10 Basil Sawyer Drive Hampton, VA 23666-1393 Attn: Ms. Elyse A. Webb, Contracts Manager Ph: (757) 766-5819; Email: webb@stcnet.com			(4)	9A AMENDMENT OF SOLICITATION NO		
				9B DATED (SEE ITEM 11)		
				10A MODIFICATION OF CONTRACT/ORDER NO NNA10DF26C		
				10B DATED (SEE ITEM 11)		
				07/29/10		
CODE	FACILITY CODE					

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended. is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning one (1) copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATA SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12 ACCOUNTING AND APPROPRIATION DATA (If required)

Not Applicable

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(4)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT/ORDER NO. IN ITEM 10A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
X	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: FAR 43.103(a) Bilateral Modification
	D. OTHER: Specify type of modification and authority)

E. IMPORTANT: Contractor is not, is required to sign this document and return 1 copy to the issuing office.

14 DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

The purpose of this modification is to incorporate FAR Clause 52.232-19, "Availability of Funds for the Next Fiscal Year" into Section I of the contract.

(Continued on Page 2)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A NAME AND TITLE OF SIGNER (Type or print) Elyse Webb, Contracts Manager	15B CONTRACTOR/OFFEROR <i>Elyse Webb</i> (Signature of person authorized to sign)	15C DATE SIGNED 8/18/10	16A NAME AND TITLE OF CONTRACTING OFFICER (Type or print) Naomi Castillo-Velasquez, Contracting Officer	16B UNITED STATES OF AMERICA BY <i>Naomi Castillo-Velasquez</i> (Signature of Contracting Officer)	16C DATE SIGNED 8-19-10
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14. DESCRIPTION OF AMENDMENT/MODIFICATION cont.

- A. The purpose of this modification is to incorporate FAR Clause 52.232-19, "Availability of Funds for the Next Fiscal Year" into Section I of the contract. Therefore, Contract NNA10DF26C shall be modified as follows:
- B. The Following FAR Clause is hereby added as follows:

**I.9 AVAILABILITY OF FUNDS FOR THE NEXT FISCAL YEAR
(FAR 52.232-19)(APR 1984)**

Funds are not presently available for performance under this contract beyond September 30, 2010. The Government's obligation for performance of this contract beyond that date 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 for performance under this contract beyond September 30, 2010, until funds are made available to the Contracting Officer for performance and until the Contractor receives notice of availability, to be confirmed in writing by the Contracting Officer.

(End of clause)

- C. All other terms and conditions remain the same.
- D. As a result of the above, the following change pages are provided. You are instructed to omit and replace and add pages as follows:

OMIT

I-49

J-50

ADD/REPLACE WITH ATTACHED

I-49

ADD I-50

J-51

End of Modification No. 1

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE		PAGE OF PAGES	
				1	2
2. AMENDMENT/MOD NO. Modification No. Two (2)		3. EFFECTIVE DATE See Block 16C		4. REQUISITION/PURCHASE REQ. NO. See Page 2	
6. ISSUED BY NASA Ames Research Center Naomi Castillo-Velasquez M/S 243-1 Moffett Field, CA 94035-1000		7. ADMINISTERED BY		5. PROJECT NO	
8. NAME AND ADDRESS OF CONTRACTOR (No. Street, County, State and ZIP Code) Science and Technology Corporation 10 Basil Sawyer Drive Hampton, VA 23666-1393 Attn: Ms. Elyse A. Webb, Contracts Manager Ph: (757) 766-5819; Email: webb@stcnet.com		Cage Code: 2U795 DUNS: 019066810		9A. AMENDMENT OF SOLICITATION NO	
CODE		FACILITY CODE		9B. DATED (SEE ITEM 11)	
				10A. MOD. OF CONTRACT/ORDER No NNA10DF26C	
				10B. DATED (SEE ITEM 13) 7/29/10	
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS					
The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers (IS OR IS NOT) extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:					
(a) By completing Items 8 and 15, and returning one (1) copy of the amendment,					
(b) By acknowledging receipt of this amendment on each copy of the offer submitted, or					
(c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.					
12. ACCOUNTING AND APPROPRIATION DATA (if required) See Page 2					
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.					
<input type="checkbox"/> A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.					
<input type="checkbox"/> B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).					
<input type="checkbox"/> C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:					
<input checked="" type="checkbox"/> D. OTHER (Specify type of modification and authority) FAR 52.232-22, "Limitation of Funds - As Modified by NFS 1832.705-2" Unilateral					
IMPORTANT: Contractor IS NOT required to sign this document and return copies to the issuing office.					
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) The purpose of this modification is to obligate funds on the contract. (Continued on Page 2)					
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.					
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. NAME AND TITLE OF CONTRACTING OFFICER Natalie LeMar, Contracting Officer		
15B. CONTRACTOR/OFFEROR (Electronic Signature Applied)		15C. DATE SIGNED	16B. UNITED STATES OF AMERICA NATALIE LEMAR (8/31/2010)  (Electronic Signature Applied)		16C. DATE SIGNED
NSN 7540-01-152-6070 PREVIOUS EDITION UNUSABLE					
30-105					
STANDARD FORM 30 (REV. 10-83) ES Prescribed by GSA FAR (48 CFR) 53 243					

B.2. ESTIMATED COST AND FIXED FEE (NFS 1852.216-74) (DECEMBER 1991)

The estimated cost of this contract is to be negotiated by task order exclusive of the fixed fee to be negotiated by task order. The total estimated cost and fixed fee is to be negotiated by task order.

(END OF CLAUSE)

B.3. CONTRACT FUNDING (NFS 1852.232-81) (JUNE 1990)

B-4

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is [REDACTED]. This allotment is for the line items 01 and 02 and covers the following estimated period of performance: date of award through November 10, 2010

B-4

(b) An additional amount of [REDACTED] is obligated under this contract for payment of fee.

SUMMARY OF CONTRACT FUNDING	FROM	BY	TO
Cost	[REDACTED]	[REDACTED]	[REDACTED]
Fixed Fee	[REDACTED]	[REDACTED]	[REDACTED]
Total Cost Plus Fixed Fee	[REDACTED]	[REDACTED]	[REDACTED]

B-4

(c) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is \$0.00. This allotment is for the line item 03 and covers the following estimated period of performance: date of award through \$0.00.

(d) An additional amount of \$0.00 is obligated under this contract for payment of fee.

SUMMARY OF RECOVERY CONTRACT FUNDING	FROM	BY	TO
Cost	\$0.00	\$0.00	\$0.00
Fixed Fee	\$0.00	\$0.00	\$0.00
Total Cost Plus Fixed Fee	\$0.00	\$0.00	\$0.00

(END OF CLAUSE)

B.4. LIMITATIONS ON PERIOD OF PERFORMANCE

The period of performance for issuing task orders under this contract is for 2 years from the effective date of the contract. This contract also includes three one-year options for additional ordering periods if exercised by the Government. Each individual task order will include its own period of performance.

(END OF CLAUSE)

- 1. The purpose of this modification is to obligate funds. Therefore, Contract NNA10DF26C is modified as follows:

Accounting and Appropriation Data:

PR number	Amount Obligated
4200355487	[REDACTED]
4200356652	[REDACTED]
4200355722	[REDACTED]
Total	[REDACTED]

B-4

- 2. Section B.3, Contract Funding, (NFS 1852.232-81) (JUNE 1990) shall be deleted in its entirety and replaced with the following:

B.3. CONTRACT FUNDING (NFS 1852.232-81) (JUNE 1990)

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is **\$0.00**. This allotment is for the line items 01 and 02 and covers the following estimated period of performance: date of award through **November 10, 2010**.

(b) An additional amount of **\$0.00** is obligated under this contract for payment of fee.

SUMMARY OF CONTRACT FUNDING	FROM	BY	TO
Cost	[REDACTED]	[REDACTED]	[REDACTED]
Fixed Fee	[REDACTED]	[REDACTED]	[REDACTED]
Total Cost Plus Fixed Fee	[REDACTED]	[REDACTED]	[REDACTED]

B-4

(c) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is **\$0.00**. This allotment is for the line item 03 and covers the following estimated period of performance: date of award through TBD.

(d) An additional amount of **\$0.00** is obligated under this contract for payment of fee.

SUMMARY OF RECOVERY ACT FUNDING	FROM	BY	TO
Cost	\$0.00	\$0.00	\$0.00
Fixed Fee	\$0.00	\$0.00	\$0.00
Total Cost Plus Fixed Fee	\$0.00	\$0.00	\$0.00

(END OF CLAUSE)

As a result of the above, the following change pages are provided. You are instructed to omit and replace as follows:

OMIT
Page 5

REPLACE WITH ATTACHED
Page 5

STATEMENT OF WORK
For
AERONAUTICS AND EXPLORATION MISSION MODELING AND SIMULATION
(AEMMS)

October 20, 2009

1.0 INTRODUCTION

The principal purpose of this contract is to provide support to research and development activities of the Systems Analysis Branch of the Flight Vehicle Research and Technology Division, the Aeromechanics Division of the Army Aviation & Missile Research, Development & Engineering Center's Aeroflightdynamics Directorate, and the Applied Modeling and Simulation Branch, and the Fundamental Modeling and Simulation Branches of the NASA Advanced Supercomputing (NAS) Division (hereafter known as the Requesting Organizations). This document describes the current and anticipated research programs of the organizations. The major objectives include the development and application of technologies for the design and analysis of aerospace vehicles and systems, large-scale numerical simulations in support of NASA and Army mission critical engineering applications, and fundamental advances in numerical methodologies, algorithms, physical models, and application code development.

2.0 SCOPE OF WORK

2.1 GENERAL SCOPE

The scope of the effort to be performed within this contract is described in this section.

The Contractor shall provide fundamental and engineering research and development, pursuant to contract task orders issued by the Contracting Officer. These services shall include the personnel, facilities, equipment and materials (unless otherwise provided by the Government) to accomplish the tasks.

Task assignments will be issued to perform services in the following areas: project management, systems engineering, systems analysis, research and analysis, design and development, testing, computer modeling, technical writing, computer systems administration, administrative services, and other functions necessary to complete projects. The Contractor shall provide management and administrative functions necessary to effectively and efficiently manage the work performed under this contract.

The Contractor shall perform services to enable the modeling, simulation, and analysis of systems relevant to the NASA aeronautics, exploration, space operations and science missions as required by task order in the following technical areas:

- a) Aerospace systems analysis tools development and application
- b) Aerospace vehicle and system design, analysis and optimization
- c) Computational Fluid Dynamics (CFD) tools development and application
- d) High fidelity modeling and simulation of aerospace vehicles and systems
- e) Development of improved physical models
- f) Integrated multidisciplinary design and analysis framework development
- g) Risk analysis methods development and application to aerospace systems
- h) Geometry and Grid generation tool development
- i) Planetary and Earth Science modeling
- j) Modeling and simulation of "green" technology applications
- k) Optimization and mission decision support tools and analysis
- l) Computational chemistry, computational biology, and computational material science

Specific requirements will be defined for each task order according to the current and future needs of programs and projects involving the requesting organizations. The Contractor may be tasked to accomplish either an entire project from conception to operation, or a specific part of a project such as design or testing.

2.2 CONTRACTOR RESPONSIBILITIES

The Contractor's responsibilities shall include the management of personnel, timely and effective implementation of task assignments, monitoring of any applicable subcontract performance, management of scheduled deliveries, and timely and effective reporting to the Government. These responsibilities shall also include efficient cost and risk management methods as well as procedures to ensure that the Government is aware of task assignment status and progress achieved. Management includes managing financial and personnel resources as well as conforming to established NASA policies and to budgetary guidelines. Most of the work will be performed on-site at Ames Research Center (ARC), Moffett Field, California.

The Contractor shall participate with the Government to upgrade and maintain required plans, procedures, and work instructions in order to maintain the organization's compliance with any third-party quality system and shall participate in any audits to maintain the quality system compliance/certification. Where the Contractor has primary responsibility for a functional or business area, the Contractor shall have primary responsibility for maintaining compliant documentation associated with that area.

The Contractor shall provide qualified management personnel, organizational structure, procedures and administration support functions to effectively and efficiently manage the work performed under this contract. The management and administrative structure shall provide a single point of contact for interface to the Contracting Officer's Technical Representative (COTR) and shall provide procedures and management supervision to ensure compliance with applicable government regulations for accomplishing this contract.

The Contractor shall be responsible for ensuring that all contractor and subcontractor personnel engaged in performance of this Statement of Work have appropriate qualifications, knowledge, and certification to perform work in accordance with the task assignments. The Contractor must have the flexibility to hire personnel at all appropriate levels of skills and experience, including, but not limited to, administrative staff, university students, post-docs, junior and senior research scientists and engineers. The Contractor will support the Requesting Organizations' goals to acquire a highly skilled workforce that is aligned with NASA missions and continues to value intellectual advantage and synergy that is made possible by a diverse workforce. The Contractor will ensure that all foreign national visitors and all employees have completed the required background checks, approvals and clearance requirements for access to the NASA Ames Research Center property.

The Contractor shall provide computer system administration support necessary for the fulfillment of the work of this contract, when tasked by the Government. This work shall include on-site IT support services for desktop, laptop, workstation, and server computers.

Research office and laboratory space, computer hardware, and software, deemed necessary for the direct fulfillment of the task orders will be provided by the Government. The Contractor may purchase, with COTR approval, and in accordance with the Subcontracts clause at FAR 52.244-2, any materials (consumables and non-consumables) necessary for the fulfillment of their task requirements.

The Contractor shall comply with the health and safety requirements contained in APR 1700.1 and the system safety and mission assurance requirements in NPR 7120.5, NASA Space Flight Program and Project Management Requirements, and applicable processes and procedures of the Requesting Organizations.

The Contractor shall comply with software engineering requirements in accordance with:

NPR 7150.2, NASA Software Engineering Requirements

APR 7150.2, Ames Software Engineering Requirements

The contractor shall also support educational outreach and internship opportunities from high school to doctorate levels to support NASA programs, to provide students with exposure to public service and enhancement of their educational experience.

3.0 REQUIREMENTS

3.1 GENERAL

3.1.1 Technologies

Research and Development in the Systems Analysis Branch focuses on the development, test, application and evolution of computational modeling and simulation tools and technologies for system and vehicle conceptual analysis and design. In support of the aeronautics and space exploration missions, the branch develops tools and integrated processes to enable new analysis methods in support of technology portfolio, vehicle, and mission analysis. Technologies and tools using high end computing for mission simulation and vehicle design are developed for, and applied to, advanced aerospace vehicle concepts.

The NAS Division develops CFD/IT/Physical modeling and Computational Chemistry technologies to support the Exploration, Aeronautics, Space Operations and Science Missions. Emphasis is on tool development and analysis of mission enabling technologies and engineering applications on NAS High End Computing (HEC) systems. Applications are varied and evolving with the new NASA Exploration and Science missions. Flow regimes range from incompressible through hypersonic velocities. There is a constant need to develop new computational tools to improve the physical model and analysis capability of fluid dynamic and chemical processes. Multiscale modeling in radiation biology and computational material science is another area of current emphasis.

The Aeromechanics Division develops tools for the computational simulation of rotorcraft, including codes to model rotor aerodynamics and methods for the coupling of computational fluid dynamics with computational structural dynamics.

3.1.2 Customers

The Systems Analysis Branch develops and applies technology in support of numerous government and industry customers. Support to the Aeronautics Research Mission is provided to the Hypersonics project to perform system studies on a variety of Access to Space concepts and in the area of entry vehicle and decelerator research and analysis. The Exploration Mission is served through aerodynamic and aerothermodynamic

analysis of exploration vehicles including the Orion Crew Exploration Vehicle; performance and risk analysis tool development, integration and test; supporting the design of Thermal Protection Systems for launch and entry vehicles, including Ares V and Orion, and flight risk analysis of launch and entry vehicles, including Ares I and Mars entry vehicles. Cross-cutting support is provided to a variety of Agency studies addressing missions such as Mars entry and sample returns; and to design efforts with Industry and Other Government Agencies for aircraft and space flight vehicles including "green" aircraft technology development and Lighter than Air (LTA) vehicle and mission design and analysis.

The NAS Applied Modeling and Simulation Branch supports the NASA Exploration Systems Mission Directorate (ESMD), Aeronautics Research Mission Directorate (ARMD), and the Space Operations Mission Directorate (SOMD). This involves a wide range of research and application work. Examples mostly include high-fidelity CFD simulations to support qualification for flight and shuttle debris analysis, Ares I and V design analysis and database generation, complex simulations of the shuttle flame trench, and flame propagation within the shuttle vehicle assembly building, rotorcraft simulations, and green technology simulations. Development of new technologies to automate grid generation, solution submission, and data reduction/post-processing is also carried out in support of all three missions. Project work often includes rapid response to complex problems with short time-frames for deliverables.

The NAS Fundamental Modeling and Simulation Branch supports the ESMD, ARMD, SOMD and the Science Mission Directorate (SMD). There is greater emphasis on fundamental research in the areas of rotorcraft, fixed-wing subsonics, supersonics, and hypersonic flight vehicles. Examples include numerical algorithms, new enabling technologies, and physical models to improve the efficiency and accuracy of CFD and computational chemistry simulations for NASA mission applications. These methods are developed for inviscid and viscous flows ranging from incompressible to hypersonic flight conditions. Numerical algorithm development and application codes include Euler, RANS, Detached-Eddy Simulations, Large-Eddy Simulations, and Direct Numerical Simulations.

The Aeromechanics Division is chartered with the development of advanced rotorcraft modeling and simulation capabilities in support of Army aviation.

3.2 SPECIFIC REQUIREMENTS

3.2.1 Integrated Analysis Environments

3.2.1.1 General

This area may include:

Development of data models, user interfaces and integrated tools and models in support of aircraft, exploration, and planetary entry vehicle design and analysis. Existing and new tools and frameworks will be applied to launch vehicles; entry, descent and landing systems; and atmospheric flight vehicles. The task will include gap analysis to identify requirements for new tools, tool integration, tool modification, and/or tool validation and, with prioritization from government task requestors, further development activities will be driven by this analysis.

Development, validation, and integration of hypersonic and supersonic decelerator design and analysis tools including integration of fluids and structures codes, and the development of propulsive deceleration analysis capabilities. Support in the identification of analytical gaps and requirements for experimental code validation for decelerators.

Test and integration of vehicle and system analysis and design environments.

Development of data specification structures including the development of application-specific data ontologies, data structure development, and the integration of the structure with analysis codes and frameworks.

Development of multi-fidelity tool integration capabilities, cross-framework integration processes, and process management techniques.

Development of risk analysis capabilities for exploration vehicles and architectures, launch vehicles, and planetary entry vehicles.

3.2.1.2 Contractor Responsibilities

The Contractor shall be responsible for conducting research and development in the areas described above. Example specific problem areas are given as follows:

- a) Support gap analysis to identify requirements for new tools, tool integration, tool modification, and/or tool validation to enable the activities listed in (b).
- b) Support in the development, test, and integration of new tools to improve design and analysis of atmospheric flight, launch, and entry vehicles concentrating on the disciplines of aerodynamics, aerothermodynamics, structures and fluid/structures interaction, trajectory, weights and sizing, and TPS sizing.
- c) Define and develop integration methods for multi-fidelity processes, including software integration within existing frameworks (e.g., Model Center), and data integration methods.
- d) Support in the identification of analytical gaps and requirements for experimental code validation for hypersonic and supersonic decelerator analysis.
- e) Support the development of decelerator design and analysis capabilities.
- f) Develop and demonstrate methods to integrate engineering level tool processes and frameworks with NAS supercomputers and other cluster environments to enable the integration of high fidelity and parallelized codes within the analysis framework.
- g) Develop and validate analysis process management capabilities to enable the selection of appropriate tools and input conditions, given a database of benchmarked tool results across a range of configurations and flight conditions.
- h) Develop risk models and risk analysis tools for launch vehicles, exploration vehicles and subsystems, planetary entry vehicles and subsystems (e.g., TPS), and exploration architectures.

3.2.2 Aerospace Vehicle and System Design and Analysis

3.2.2.1 General

This area includes:

- Design and development of vehicle and system concepts for exploration and aeronautics missions.
- Design and development of vehicle and system concepts in support of Industry and Other Government Agency requirements for aircraft, space flight, and planetary entry vehicles.
- Performing technology and system trade studies.

- Development and application of mission performance and risk analysis methods.
- Development and application of mission modeling and simulation capabilities to perform multi-fidelity analysis to predict system performance characteristics and risk profiles.

3.2.2.2 Contractor Responsibilities

The Contractor may be required, by task order, to provide the following support:

- a) Perform systems analysis for launch, entry, and descent of exploration and space science missions.
- b) Perform systems analysis for atmospheric flight vehicles including the integration of their flight characteristics with the airspace architecture.
- c) Develop and apply new methods and processes in support of exploration mission vehicle and system design and analysis. Develop and integrate multi-disciplinary, multi-fidelity analysis models for ascent, abort, earth re-entry, and planetary entry for anticipated vehicle and launch configurations.
- d) Perform system and technology trade studies for aeronautics and exploration vehicles and architectures.
- e) Develop and validate new engineering and CFD capabilities as required to support the design and analysis of space, atmospheric flight, and planetary entry vehicles.
- f) Develop an aerodynamic database of a reference CEV capsule concept, baselined against available Apollo test and flight data. Document best practices for application and set up of CFD codes for different configurations and flight conditions.
- g) Develop and apply methodologies for vehicle and systems analysis in support of aeronautics missions.
- h) Develop revolutionary concepts for aeronautics in pursuit of NASA goals and objectives for the aeronautics mission. Provide trade studies, and cost and benefits analysis of these concepts. Identify critical revolutionary technologies that will be required to develop these concepts.
- i) Develop and apply risk analysis methods to support technology and architecture trades for the exploration mission.

3.2.3 Computer System Administration

3.2.3.1 General

Support branch requirements by providing PC systems administration. Provide regular backups, troubleshoot system problems, perform set-up of new equipment, and update systems as required with all cognizance of and adherence to NASA and NAS IT Security requirements and processes. Oversee use of the Branch model-building machine, identifying requirements for maintenance, new materials, etc.

3.2.3.2 Contractor Responsibilities

The Contractor shall be responsible for developing and supporting technology portfolio analysis and management capabilities. Example specific requirements include:

- a) Provide regular backups, troubleshoot system problems, perform set-up of new equipment, and update systems as required.

- b) Maintain cognizance of and adherence to NASA IT Security requirements and processes. Communicate regularly to branch management and personnel regarding security requirements and their impacts.
- c) Support installation and testing of AUS Linux server and associated compute nodes. Provide installation support for COTS and in-house codes, maintaining configuration control over cluster-installed codes.

3.2.4 NAS Division and Branch Requirements

3.2.4.1 General

Areas of current and future activity include, but are not limited to:

- Computational Fluid Dynamic (CFD) algorithm and tool development
- Space Vehicle Launch and Ascent Analysis
- Space Shuttle Analysis
- Development and application of analysis tools in support of advanced rotorcraft design
- Development of automated CFD parameter-study tools
- Planetary and Earth Science CFD modeling
- Modeling and Simulation of green technology applications
- Computational chemistry modeling

3.2.4.2 Contractor Responsibilities

- a) Computational Fluid Dynamic (CFD) algorithm and tool development
 - o Advanced finite-difference and finite-volume algorithms
 - o Parallel algorithms on NASA high-end computing platforms
 - o Overset, unstructured, unstructured prismatic, and Cartesian grid systems
 - Grid generation and flow-solvers
 - o Implicit and explicit methods
 - o High-order accuracy
 - o Steady and time-accurate flows
 - o Turbulence modeling
 - o Chemically reacting and multi-phase flows
 - o Incompressible, low-speed, transonic, supersonic and hypersonic regimes
 - o IT/CFD frameworks and solution environments
 - Based on UNIX shells, script and computer languages, e.g., C-shell, PERL, PYTHON, MYSQL, XML, F77, F90, C, C++, etc.
- b) Space Vehicle Launch and Ascent
 - o Vehicle on launch pad with tower
 - o Space vehicle ascent trajectory
 - o Abort scenario
- c) Space Shuttle
 - o Return to Flight (RTF)
 - o Debris analysis
 - o Engine Liquid Propulsion Subsystem
 - Simulation of entire system
 - Flow liner crack analysis
- d) Simulation of the internal and external environment of green eco-friendly buildings
- e) Rotorcraft simulations
 - o Improve rotorcraft simulation accuracy and efficiency
 - Grid adaption, high-order accurate methods, parallel algorithms

- o Time-dependent visualization methods
- o Multidisciplinary frameworks including CFD, Computational Structural Dynamics (CSD) and rotorcraft trim coupling
- o Blade vortex interaction
- o Turbulence modeling for rotating rotor blades
- f) Automated CFD parameter-study tools
 - o AeroDB Framework
- g) Planetary and Earth Science CFD modeling
 - o Meso and micro-scale viscous simulations of high-wind events and weather related phenomena
- h) Computational chemistry modeling
 - o Parallel chemistry algorithms on NASA high-end computing platforms
 - o Accurate theoretical spectroscopy for astronomy, astrobiology, Earth science and entry physics
 - o Chemical reaction rates and charged particle collision cross sections with applications in space science, astrobiology, Earth science, radiation biology, entry physics, and thermal protection systems
 - o Multiscale modeling in radiation biology, from Angstrom scale quantum mechanical description of radiation damage to nucleotides to meso-scale modeling of cell damages
 - o Multiscale modeling in computational material science, from the atomic level (order of nm) to the macroscopic level (order of mm or cm).

3.2.5 Computational Fluid Dynamics Applications for Rotary-Wing Vehicles

3.2.5.1 General

Computational simulations of rotor aerodynamics typically need to model discrete rotor blades with relative motion between the rotors, the fuselage and surrounding ducts or shrouds. These types of calculations involve multiple overset grids and small time steps to capture the details of the individual rotors.

The Reynolds-averaged Navier-Stokes flow solver that is primarily used for this task is the OVERFLOW-2 code developed by NASA Langley's Pieter Buning. OVERFLOW-2 is a general-purpose Navier-Stokes code designed for fixed wing overset-grid computations on both moving and static grids. For moving-grid simulations, the OVERFLOW-2 code accommodates arbitrary relative motion between vehicle components. The modified code automatically organizes grid components into groups of approximately equal size. This group-wise structure has been exploited to facilitate efficient parallel computations of multi-body problems on scalable computer platforms. On parallel machines, each processor is assigned a group of grids for computation, with inter-group communications performed using the Message Passing Interface (MPI) protocol.

In addition to rotor aerodynamics solutions alone, the Army Aeroflightdynamics Directorate (AFDD) at Ames Research Center is also developing new methods for coupling computational fluid dynamics (CFD) with computational structural dynamics (CSD). The aim is to improve the accuracy for the multi-disciplinary rotorcraft modeling. This CFD/CSD is meant to remedy the fact that methods in that are commonly used by the rotorcraft technical community for coupling rotorcraft elastic and aeroelastic behavior are wholly inadequate to treat the most difficult problems of rotary-wing aeroelastic coupling. Recent applications of AFDD's new CFD and CSD coupling methods have

resulted in major advances the ability to accurately model complex rotorcraft aeromechanics problems.

In addition to the coupling of legacy structural dynamics and computational fluid dynamics codes such as RCAS and OVERFLOW, the Army Aeroflightdynamics Directorate is also developing a new software package called Helios, which aims to perform coupled rotorcraft CFD/CSD analysis with improvements in speed, accuracy, and throughput compared with the legacy software tools cited above. The Helios goal is to transform the analysis-test paradigm that currently exists within the domestic rotorcraft industry to one built around high-performance computing

This new Helios software package uses an unstructured-grid CFD code for the near-body flow solver, a uniform Cartesian off-body flow solver, plus a new rotor dynamics and trim model that is truly scaleable. The Army Aeroflightdynamics Directorate needs software developers, software testers, and software quality control experts for this new code development project.

3.2.5.2 Contractor Responsibilities

The Contractor shall be responsible for conducting research in the areas described above. Example specific problem areas are given as follows:

- a) Apply coupled versions of the OVERFLOW-2 computational fluid dynamics and the RCAS computational structural dynamics codes to analyze specific Army and NASA rotorcraft problems. These applications will entail structured overset-grid generation for practical rotary-wing fuselages and rotor systems such as the Army's CH-47 Chinook and the UH-60 Blackhawk helicopters.
- b) Develop scaleable finite-element computational analysis methods for rotor dynamics and trim. These rotor dynamics and trim models must integrate with the overall Helios CFD/CSD framework for rotor aeromechanics.
- c) Take responsibility for software quality control, testing, and evaluation of the new Helios code during its multi-year development cycle.
- d) Provide system administration, and support for about 25 PC's that run the Linux operating system. These Linux workstations are used for software development, flow visualization, and analysis of computed rotary-wing flow field solutions. A major part of this requirement will consist of ongoing upgrades to operating system and applications software.

3.2.6 Travel

Contractor personnel may be required to travel for short periods of time to attend meetings, to participate in industry site visits, or to attend technical conferences. The Contractor will budget for these expenses as well as anticipated publication expenses in the submission of the response to a task order or modification to a task order.

3.2.7 CTO Accounting – Move to Deliverables

Since tasks are internally funded by the ARC requesting organization, contractor expense accountability must be accomplished on a task basis.

3.3. PERFORMANCE MEASUREMENT

The Contractor shall adhere to the performance measurements detailed in each task order.

4.0 DELIVERABLES AND REPORTS

Contract deliverables and reports are identified and described in the Data Requirements List attachment to this contract. Task specific deliverables will be defined in each task.

5.0 EMERGENCY PREPAREDNESS AND RESPONSE

The Contractor's obligation may include resolution of unusual or emergency situations. The Contractor may be required to assist NASA, within the general scope of work, but in currently unidentified ways, in preparation for, or in response to emergencies. Obligations under this requirement shall only arise when one or more of the criteria at FAR 18.001, enabling NASA to utilize "Emergency Acquisition Flexibilities", are met. If the emergency preparedness and response requirements result in changes to the contract, all contract adjustments will be processed in accordance with the Changes clause of this contract.

6.0 SYSTEM SAFETY, RELIABILITY, AND QUALITY ASSURANCE

The contractor shall interface and coordinate with the NASA ARC Safety, Environmental and Mission Assurance Directorate for defining and implementing safety, reliability, and quality assurance requirements.

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

NPD 1280.1
APR 1280.1
NPD 8730.5

NASA Management System Policy
Ames Management System (AMS) Quality Manual
NASA Quality Assurance Program Policy

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

7.0 PHASE-IN AND PHASE-OUT

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

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