AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
		1 | 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
000001	See Block 16C		

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
NASA/Langley Research Center 9B Langley Blvd., Bldg. 1195B M/S 126 Hampton VA 23681-2199	LARC	NASA/Langley Research Center 9B Langley Blvd., Bldg. 1195B M/S 126 Hampton VA 23681-2199	LARC

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)		9A. AMENDMENT OF SOLICITATION NO.
SCIENCE SYSTEMS AND APPLICATIONS, INC. 10210 GREENBELT RD STE 600 LANHAM MD 20706-6239	(x)	
		9B. DATED (SEE ITEM 11)
	X	10A. MODIFICATION OF CONTRACT/ORDER NO. NNL11AA00B
		10B. DATED (SEE ITEM 13) 12/09/2010
CODE 58009	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 _____ copies 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 ACKNOWLEDGEMENT 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)
N/A

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

CHECK ONE	
	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 date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	FAR 52.212-4(c): Contract Terms and Conditions - Commercial Items, Changes
	D. OTHER (Specify type of modification and authority)

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

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

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 (Type or print)	
James A. Good Contracts Manager		Sandra A. Chellis	
15B. CONTRACTOR/OFFEROR James A. Good (Signature of person authorized to sign)	15C. DATE SIGNED 9/19/11	16B. UNITED STATES OF AMERICA Sandra A. Chellis (Signature of Contracting Officer)	16C. DATE SIGNED 9/19/11

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

A. The purpose of this modification is to effect the following changes to the subject contract. Therefore, the following changes are hereby made:

1. Change the New Technology Representative information identified in Section G, Paragraph G.13 (a) from COTR: Garnett Hutchinson to COTR: Richard Law.

2. Delete item (g). Supplier Agreement Management (SAM) from Section H, Paragraph H.17, CAPABILITY MATURITY MODEL INTERGATION (CMMI) REQUIREMENTS (LaRC 52.246-104)(APRIL 2008).

3. Incorporate the following LaRC clause in Section H as Paragraph H.19:

H.19 REPORTING OF INCIDENTS INVOLVING WORKPLACE VIOLENCE (LaRC 52.223-93) (MAY 2011)

The contractor and its employees shall comply with LAPD 1600.5, Workplace Violence and Threatening Behavior. The contractor shall conduct training on and develop procedures for recognizing, managing and responding to incidents and threats of workplace violence as defined in LAPD 1600.5.

In accordance with LAPD 1600.5, if the LaRC Workplace Violence and Prevention Program (WVPP) Threat Assessment Team determines it is appropriate for the contractor to participate in a WVPP Threat Assessment Team meeting, the contractor shall comply with the request. The contractor shall report the disposition of any incidents to the LaRC WVPP Threat Assessment Team.

This requirement shall flow down to the subcontractors, however the subcontractors shall report up through the prime contractor.

4. Change the Contracting Officer Technical Representative information identified in Section II B of Exhibit B, Contract Documents, from Garnett Hutchinson, M/S 401 EMAIL: Garnett.I.Hutchinson@nasa.gov to Richard Law, M/S 401 EMAIL: Richard.C.Law@nasa.gov.

5. Incorporate the attached Revised Exhibit C, Off-site Government Furnished Property.

B. All other terms and conditions remain unchanged as a result of this modification no. 1.

EXHIBIT B

CONTRACT DOCUMENTATION REQUIREMENTS

DOCUMENTATION PREPARATION/SUBMISSION INSTRUCTIONS

A. Monthly Financial Management Report

1. The Contractor shall submit a monthly financial management report, via email as a Microsoft Excel 2007 or pdf document, as provided by the NFS clause 1852.242-73, NASA Financial Management Reporting NASA Procedural Requirements (NPR) 9501.2D, NASA Contractor Financial Management Reporting. This report shall be submitted utilizing NASA Form 533M, Monthly Contractor Financial Management Report, in accordance with submission instructions contained on the reverse side of the form.

2. For this task order contract, a 533M shall be provided for the levels indicated below:

a. Each Authorized Task
- Total for each task order for its inception date
- Subtotal for each calendar year (e.g. 11/1/2010 – 10/31/2011)

b. Contract Total. (Column 9b shall reflect total estimated cost of $# plus award fee of $#.)

c. It is NASA's goal to improve the timeliness for reporting financial data. The Contractor shall submit the NF 533M **not later than the 10th working day following the close of the Contractor's accounting period being reported.** Timeliness of financial reporting will be evaluated as part of the annual performance evaluation.

d. It is NASA's goal to improve the integrity of its financial data. Since NASA uses the Contractor's estimate for the current month (column 8a of the 533M) as accrued costs in its monthly financial statements, it is important that this estimate be your best projection of the actual costs to be reported in column 7a of the subsequent month's 533M.

e. For this task order contract, a 533M for each authorized cost reimbursement task order shall be provided. If specified in the Task Order, the Contractor shall report costs by Government WBS identifier (number).

Therefore, each NF533M shall include a narrative explanation for variances exceeding +-10 percent between estimated dollars shown in the prior month and actual dollars shown in the current month at the total contract level. (For example, the estimated dollars shown for June in column 8a. in the May 533M and the actual June dollars shown in column 7a. in the June 533M.) Accuracy of financial reporting will be evaluated as part of the annual performance evaluation.

3. The minimum reporting categories shall be included in column 6 of this report and shall include:

- Direct Labor Hours
  - Scientist
  - Engineer

    - Technician
    - Other Direct Labor (ODL)
- Direct Labor Dollars
    - Scientist
    - Engineer
    - Technician
    - Other Direct Labor (ODL)
- Overhead(s)
- Subcontract (to include vendor name)
- Material
- Other Direct Cost
- Travel Costs/Expenses
- G&A
- Total Estimated Cost
- Total Estimated Fee
- Total Estimated Cost Plus Fee

Note: NPR 9501.2D NASA Financial Management Report is located at the NODIS website: http://nodis3.gsfc.nasa.gov/main_lib.html

B. Monthly Progress Report -- The Contractor shall submit a monthly progress report summarizing work progress, manpower utilization for assigned work, and material expenditures, via email, in accordance with the requirements of each task order. This report shall be submitted within 10 operating days following the end of the reporting period.

C. Final Reports -- Each task order may require the Contractor to submit a final report, either formal or informal, which documents and summarizes the results. When a formal final Contractor report is required, it shall be submitted in accordance with the instructions contained in NASA FAR Supplement clause 1852.235-73 Final Scientific and Technical Reports. The specified number of approval copies shall be submitted within the time specified in the task orders.

D. Safety Reports -- The Contractor shall submit safety reports to the LaRC Safety and Facility Assurance Office. These reports shall be submitted on a quarterly basis if the period of performance exceeds ninety days. If the period of performance is less than ninety days, the Contractor shall submit a single report upon completion of on-site work. The Safety Report shall include the hours worked on the contract and the number of fatalities, lost time cases, OSHA recordable incidents and first aid cases which have occurred during the past quarter (if less than ninety days, during the contract's period of performance). NOTE: The NASA LaRC Safety and Facility Assurance Office (SFAO) has developed a web-based system entitled Contractor Monthly Accident Reporting (CMAR) located at http://cmar.larc.nasa.gov/login.cfm If you choose to submit your information electronically via CMAR, no additional hard-copy reports are required. Please contact the responsible NASA official identified at the site for additional information regarding access to the system.

E. Notice of Violation Response -- The Contractor shall respond to any Notice of Violation (NOV) issued for safety violations to the prime itself or its' subcontractors within three working days of issuance. The response should include cause for violation; mitigation of impact, if

applicable; planned prevention of recurrence. Response shall be submitted to the issuer of the NOV.

F. Information Technology (IT) Security Plan - The Contractor shall submit the IT Security Plan required by contract clause NFS 1852.204-76 Security Requirements for Unclassified Information Technology Resources for Contracting Officer approval no later than 30 days after effective date of the contract.

G. Annual IT Security Training Report - The purpose of this report is to obtain confirmation that IT security training for contractor employees required under paragraph (e) of NFS clause 1852.204-76 Security Requirements for Unclassified Information Technology Resources, has been completed by all individuals required to do so. NASA requires that this annual training be completed by 100% of the appropriate employees no later than June 30 of each year. Accordingly, a report that includes the information listed below shall be submitted to the Contracting Officer no later than June 30 of each calendar year, so long as the period of performance of the contract has not expired prior to June 30th.

Report Content: (1) the number of employees requiring IT security training in accordance with the contract clause (i.e., in accordance with NPR 2810.1 Nondiscrimination in Federally Assisted and Conducted Programs, which requires such training for all "employees who have access to NASA computer systems and networks that process, store, or transmit information"); (2) the number of those employees in item (1) that have completed the annual training as of June 30th; (3) whether the NASA on-line training system was used (use of the NASA on-line system is optional); and (4) a plan of action with milestones to reach 100% in item (2) if that level has not been achieved by June 30th.

H. RESERVED

I. RESERVED

J. NASA Property in the Custody of Contractors (NASA FORM (NF)1018) -- The Contractor shall submit the NF 1018 no later than October 15th of each year in accordance with the Section I, NFS clause entitled 1852.245-73 Financial Reporting of NASA Property in the Custody of Contractors. The Contractor shall maintain a property control plan and update as necessary.

K. Documentation for Transferring Property to the Government
It is not the intent of the Government for the Contractor to acquire property, titled to the Government, as a direct cost to the contract however, in the event that it is necessary and in accordance with the NFS clause 1852.245-71, Installation- Provided Government Property clause of this contract, accountability for that property which is acquired for the Government under this contract shall be passed to the Government using the following procedure:

The transfer of accountability shall be initiated by the Contractor submitting a Requisition and Invoice/Shipping Document, DD Form 1149, accompanied by a copy of the Contractor's applicable purchasing and receipt document for the property. The Contractor shall insert both the Contractor's Subcontract/ Purchase Order number and the Government contract number on the DD Form 1149 under the Federal Stock Number, Description, and Coding of Material and/or Services block. For purchases of supplies and materials, this document shall be submitted within 30 days after the end of each calendar-year quarter (that is, not later than January 30, April 30, July 30, and October 30). For equipment purchases, the DD 1149 shall be submitted

within five workdays after acceptance of each item of equipment by the Contractor. Receipt by the Contractor of a copy of the DD Form 1149 signed by the Government relieves the Contractor of accountability for the property specified on that form.

L. Quality Plan -- Within 30 calendar days after the effective date of the contract, the Contractor shall submit a quality plan that specifies which procedures and associated resources shall be applied by whom and when to a specific project, product or process in order to accomplish contractual requirements. The plan and subsequent revisions will be reviewed and accepted by the Contracting Officer or the designated representative.

M. Quality System Documents (ISO 9001) -- The Contractor shall submit the following ISO-compliant documents in accordance with **H.15**, Quality Management System Certification/Registration Requirements or **H.16**, ISO 9001 Certification/Registration Requirements Regarding the Offeror's Quality Management System, whichever applies, no later than nine months from the effective date of contract:

1. Quality System Manual

2. Quality System Procedures - These procedures shall address:

(1) Contract and subcontract management, (2) customer requirement review and execution, (3) task management, including work order generation and processing, (4) document control, (5) handling of customer supplied product, (6) corrective, preventive, and continuing improvement action systems, (7) training of employees, and (8) customer satisfaction/performance measurement.

N. Federal Contractor Veterans Employment Report -- In compliance with Clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans, the Contractor shall submit the Federal Contractor Veterans Employment Reports (VETS-100) as required by this clause.

O. Evidence of Insurance -- The Contractor shall submit evidence of the insurance coverage, required by the Section H, NFS Clause 1852.228-75 Minimum Insurance Coverage, (i.e., a Certificate of Insurance or other confirmation), to the Contracting Officer prior to performing under this contract. The Contractor shall also present such evidence to the Contracting Officer prior to commencement of performance under any options exercised, if applicable.

P. Interim patent rights report - After the first anniversary date of the contract, the Contractor shall submit an annual list of all subject inventions to be disclosed as set forth in FAR 52.227-11 Patent Rights--Retention by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). This report is due by March 31 of each year.

Q. Final patent rights report - The Contractor shall submit a listing of all subject inventions or certify that there were none as set forth in FAR 52.227-11 Patent Rights--Retention by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). This report is due prior to contract closeout.

R. Invention disclosure reporting - The Contractor shall disclose each subject invention under the contract as set forth in FAR 52.227-11 Patent Rights--Retention by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). The electronic or paper version of NASA Form 1679, Disclosure of Invention and New

Technology (Including Software), may be used for this reporting. Both the electronic and paper versions of this form may be accessed at http://invention.nasa.gov. Disclosures are required within two months after the inventor discloses it in writing to Contractor personnel who are responsible for patent matters.

S. On and Near-Site Staffing Report - The contractor shall submit a report which includes the number of on-site and near-site Work Year Equivalents (WYE's) performing work on the contract, broken down by skill category. An initial report shall be submitted within 30 days from the effective date of the contract. Subsequent updated reports are due quarterly, on January 1, April 1, July 1 and October 1 of each year.

These reports shall be e-mailed to the following: larc-dl-contractorwye@mail.nasa.gov

The subject line for the e-mail should be "Contractor WYE".

"On-site" WYE's include the time worked by prime contractor and subcontractor employees on this contract whose primary duty station is on-site at Langley Research Center, whether such employees charge direct or indirect in the contractor's or subcontractor's accounting systems (e.g., management and administrative staff may charge their time to an "indirect" account, but the time worked by such individuals shall still be counted in the on-site WYE).

"Near-site" WYE's include the time worked by prime contractor and subcontractor employees on this contract whose primary duty station is within 50 miles of LaRC, whether such employees charge direct or indirect in the contractor's or subcontractor's accounting systems. Work performed on local college campuses shall not be considered "near site" WYE's.

The contractor shall use the number of hours in its productive work year to compute the number of WYE's to be reported.

The contractor shall break out the On-site and Near-site WYE by skill category using the following categories: Scientist, Engineer, Technician, Administrative Professional, and Clerical.

The contractor shall break out the On-site and Near-site WYE by task order number, project title, and principle Technical Monitor.

T. Organizational Conflict of Interest Avoidance Plan – In compliance with Section H, H.12 Organizational Conflicts Of Interest (OCI) (LaRC 52.227-96) and I.12, Access to Sensitive Information (NFS 1852.237-72), the Contractor shall provide the Contracting Officer with a comprehensive OCI avoidance plan IAW the RFP suspense date and update as needed throughout the contract performance period.

U. Source Code – The Contractor shall provide to the Contracting Officer's Technical Representative, all source code and all supporting documentation explaining the use and outcome of source code for each Task Order. See Section H, H.2.

V. Self-Assessment Report – The Contractor may submit a Self-Assessment Report in accordance with the instructions contained in the Award Fee Evaluation Plan (Exhibit L). The Self-Assessment shall not exceed 5 pages, not including cost analysis reports, and shall be delivered to the Government within 25 days from the end of each award fee evaluation period.

W. Estimate of Percentage of Recovered Material Content for EPA Designated Products - In compliance with Clause I.8, Estimate of Percentage of Recovered Material Content for EPA Designated Products (FAR 52.223-9), the Contractor shall provide to the Environmental Management Office the percentage of the total recovered material used in contract performance including, if applicable, the percentage of postconsumer material content, upon contract completion.

II. DOCUMENT DISTRIBUTION REQUIREMENTS

A. Unless otherwise specified elsewhere in this contract, reports and other documentation shall be submitted f.o.b. destination as specified below, addressed as follows:

National Aeronautics and Space Administration Langley Research Center
Attn: **TBD/See below** , Mail Stop **TBD/See below** Contract NNL11AA00B
Hampton, VA 23681-2199

B. The following letter codes designate the recipients of reports and other documentation which are required to be delivered prepaid to Langley Research Center by the Contractor:

A--Contract Specialist, Mail Stop 126

B--Contracting Officer Technical Representative
Garnett L. Hutchinson, M/S 401
EMAIL: Garnett.I.Hutchinson@nasa.gov

C--New Technology Representative, Mail Stop 401

D—Financial Management, LaRC-DL-NF533@mail.nasa.gov

E--Safety and Facility Assurance Branch, Mail Stop 421

F--Contractor Labor Relations Officer, Mail Stop 144

G—Financial Management, Mail Stop 175

H--Patent Counsel, Mail Stop 141

I--Industrial Property Officer, Mail Stop 377

J--Center Information Technology Security Manager (CITSM), Mail Stop 124

K--According to instructions on form

L--As required by Task Order

M--Task Monitor

N--Center STI Publication Manager, Mail Stop 196

O--Industry Assistance Representative, Mail Stop 144

P--On and Near-Site Staffing Report, LaRC-DL-contractorwye@mail.nasa.gov

Q—Environmental Management Office, Mail Stop 418

C. The following are the distribution requirements for reports and other documentation required to be delivered f.o.b. destination. The numeral following the letter code specifying the number of copies to be provided:

LETTER CODE AND DOCUMENT: DISTRIBUTION

DISTRIBUTION REQUIREMENTS		
Document Letter	**Document**	**Distribution Code and Quantity**
A	Monthly Financial Management Report (533M)	A-1, B-1, D-1 (Via Email)
B	Monthly Progress Report	A-1, B-1, M-1 (Via Email)
C	Final Reports	A-1, B-2, M-1
D	Safety Reports or CMAR website	E-1, or in accordance with directions posted on the website (CMAR).
E	Notice of Violation Responses	A-1, E-1
F	IT Security Plan	A-1, B-1, J-1
G	Annual IT Security Training Report	A-1, B-1, J-1,
H	RESERVED	A-1, B-1, F-1
I	RESERVED	N/A
J	NASA Property in the Custody of Contractors (NF 1018)	I-1
K	Requisition and Invoice/Shipping Document	I-1

EXHIBIT B

L	Quality Plan	A-1, B-1, E-1
M	Quality System Documents	A-1, B-1
N	Federal Contractor Veterans Employment Report (VETS-100)	K-1
O	Evidence of Insurance	A-1
P	Interim Patent Report	A-1, B-1, C-1, H-1
Q	Final Patent Report	A-1, B-1, C-1, H-1
R	Invention Disclosure Reporting	A-1, B-1, C-1, H-1
S	On and Near-Site Staffing Report	A-1, B-1, P-1 (Via E-mail)
T	Organizational Conflicts of Interest Avoidance Plan	A-1, B-1
U	Source Code and Supporting Documentation	B-1
V	Self-Assessment Report	A-1, B-1 (Via E-mail)
W	Estimate of Percentage of Recovered Material Content for EPA Designated Products	Q-1

D. When the Contract Specialist is not designated above to receive a copy of a report or document, the Contractor shall furnish a copy of the report/document transmittal letter to the Contract Specialist. If delegated, the Contractor shall also furnish a copy of the transmittal letter and a copy of each Financial Management Report to the delegated Administrative Contracting Officer of the cognizant DoD (or other agency) contract administrative services component.

Government Property List Off-Site
Exhibit C

CONTRACT NO: NNL11AA00B								
SSAI Decal	Old Decal (no longer attached)	ECN	Item Description	Manufacturer	Model Number	Serial Number	Unit Price	Notes/Additions/Deletions
G000666	G117967	2009175.	RADIOMETER	ORIEL	70100	528	$4,745.00	
G000664	G117968	2009176	DETECTOR HEAD	ORIEL	70123	3163112	$1,004.00	
G000720	G117977	2008990	SPECTRORADIOMETER	ASD	FS3502500P	6207	$51,877.00	
G001383	G119967	1636417	MONITOR	SUN	LSA800	0027KY0236	$2,298.00	
G001092	G122703	38676	DISK DRIVE	FUJITSU	M2954S	50036629	$1,472.00	
G001180	G122749	NA	UPS	APC	SU2200NET	ES9714341165	$958.00	
G000717	G122832	1873203	LAPTOP COMPUTER	NEC	PC 624091803	75002764	$3,757.00	
G000716	G122834	1873202	LAPTOP COMPUTER	NEC	PC624091803	74009951	$3,757.00	
G000657	G122954	NA	CABLEMETER	FLUKE	620 LAN	6875964	$649.50	
G000683	G124645	NONE	POWER SUPPLY	ORIEL	68835	224	$3,228.10	
G000667	G124646	NONE	PHOTOFEEDBACK SYSTEM	ORIEL	68850	1371	$2,028.25	
G001451	G124663	2106800	HARD DRIVE, EXTERNAL	RHINO JR.	FJR100-1W	03140A0094	$948.00	
G000724	G124672	N/A	SPHERE WITH INPUT/OUTPUT PORTS	ORIEL	70481LHS	NONE	$1,515.25	
G000679	G145637	N/A	RCR COLUMNATOR	ANALYTICAL SPECTRUM	NONE	NONE	$790.00	
G001340	G150884	NA	CPU	DELL	XPSR450	H685Q	$1,870.00	
G001184	G150919	NA	CPU	SUN	NONE	NONE	$4,964.00	
G000690	G153086	NA	ADAPTER, AUTO/PLANE	NEC	129912A	NONE	$119.13	
G000691	G153087	NA	ADAPTER, AUTO/PLANE	NEC	129912A	NONE	$119.13	
G000684	G157104	1613132	ROTATIONAL STAGE	POLYTIC	M037DG	1319	$4,335.00	
G000675	G158279	NA	LAMP FIXTURE	ORIEL	6372	NONE	$221.00	
G000671	G158280	NA	POWER SUPPLY	ORIEL	68811	659	$2,661.00	
G000673	G158281	NA	HOUSING W/IGNITOR	ORIEL	66028	356	$2,226.00	
G000672	G158282	NA	RADIOMETRIC POWER SUPPLY	ORIEL	68835	194	$3,172.00	
G000674	G158283	NA	LAMP HOUSING, 1000W	ORIEL	66187	251	$2,044.00	
G000685	G158284	NA	FIBER OPTIC ASSEMBLY	ORIEL	77800	NONE	$367.00	
G000686	G158285	NA	POWER SUPPLY	ORIEL	6047	NONE	$196.00	
G000687	G158286	NA	POWER SUPPLY	ORIEL	6043	NONE	$196.00	
G000722	G158287	NA	CALIBRATION LAMP	ORIEL	6035	NONE	$197.00	
G000721	G158288	NA	CALIBRATION LAMP	ORIEL	6033	NONE	$295.00	

Government Property List Off-Site
Exhibit C

SSAI Decal	Old Decal (no longer attached)	ECN	Item Description	Manufacturer	Model Number	Serial Number	Unit Price	Notes/Additions/Deletions
G000689	G158289	NA	MONOCHROMATOR SPHERE	ORIEL	70482	NONE	$989.00	
G000669	G158290	NA	FOCUSING TUBE	ORIEL	77259	NONE	$564.00	
G000676	G158291	NA	PHOTOFEEDBACK SYSTEM	ORIEL	68850	1132	$1,993.00	
G000668	G158292	NA	RADIOMETRIC POWER SUPPLY	ORIEL	68831	723	$2,526.00	
G000670	G158293	NA	HOUSING LAMP	ORIEL	66182	313	$1,197.00	
G000659	G158294	NA	FILTER WHEEL	ORIEL	NONE	NONE	$996.00	
G000688	G158295	NA	HAND CONTROLLER	ORIEL	74009	94615757	$497.00	
G000715	G158300	1873201	LAPTOP COMPUTER	NEC	PC624091803	75002740	$4,957.00	
G000658	G163584	1884759	FIBER OPTIC BENCH	NEWPORT CORP	NONE	NONE	$2,425.00	
G001339	G177311	NA	LAPTOP	COMPAQ	NONE	3J1CJMXZH014	$2,402.11	
G001314	G177327	NA	PROJECTOR, LCD	EPPLEY	TLP780U	31634546	$1,275.00	
G000725	G177333	NA	DIRECT IRRADIANCE ATTACHMENT	ANALYTICAL SPECTRAL	NONE	NONE	$750.00	
G001107	G177335	NA	DISK DRIVE	SUN	ULTRASCSI	142C5BD9	$3,541.34	
G000735	G177349	1637164	DIGITAL CAMERA	SONY	NONE	NONE	$1,160.00	
G001450	G177350	2098610	TAPE TRANSPORT, MAGNETIC	STORCASE	FJR100-1	99288A0160	$3,360.00	
G001421	G177351	2098611	TAPE TRANSPORT, MAGNETIC	STORCASE	FJR100-1	99288A0241	$3,360.00	
G000677	G178129	NA	UPS	APC	SUA1500	AS0246231950	$420.00	
G000723	G180762	NA	VACUUM	EUREKA	6984	NONE	$299.95	
G001389	G180768	NA	SWITCH, ETHERNET	CISCO	NONE	CAT0813N0OE	$5,104.00	
G001390	G180769	NA	SWITCH, ETHERNET	CISCO	NONE	CAT0829N2RD	$5,104.00	
G001247	G180775	NONE	UPS	APC	SUA1500	AS0246130935	$382.00	
G000739	G180787	NONE	COLD WEATHER PISTOL GRIP	ANALYTICAL SPECTRAL	NONE	NONE	$500.00	
G000740	G180788	NONE	FIBER OPTIC CABLE	ANALYTICAL SPECTRAL	NONE	135619	$6,000.00	
G000680	G180797	1096491	POWER SUPPLY	SPECTRA-PHYSICS	7300-L2	3016	$13,775.00	
G000665	G180798	2105223	SIGNAL PROCESSOR	THERMO ORIEL	70100-3-2503	NONE	$1,070.00	
G000663	G180799	2105210	SIGNAL CONTROLLER	THERMO ORIEL	77055	116	$1,211.00	
G000660	G180800	2105212	GAS DETECTOR	THERMO ORIEL	70328	181	$2,532.00	
G000662	G180801	2105211	SIGNAL CONTROLLER	THERMO ORIEL	77055	115	$1,211.00	
G000682	G182600	NONE	BENCH, 8 FT STANDARD OPTICAL	ORIEL	NONE	11160	$981.00	

Government Property List Off-Site
Exhibit C

SSAI Decal	Old Decal (no longer attached)	ECN	Item Description	Manufacturer	Model Number	Serial Number	Unit Price	Notes/Additions/Deletions
G001093	G182608	NA	CD-RW RECORDER	YAMAHA	CRW3200SX	FFS0003190	$299.99	
G001106	G182611	2102587	CPU	SUN	NONE	FT23450213	$1,121.00	
G001094	G182625	2102588	CPU	SUN	NONE	FT23450138	$1,121.00	
G001104	G182632	2102620	CPU	SUN	NONE	FT23520380	$1,121.00	
G001082	G182634	2102606	CPU	SUN	NONE	FT22150483	$1,121.00	
G000661	G183283	2105418	DETECTOR, SI	THERMO ORIEL	70318	118	$1,807.00	
G001083	G183299	2102422	MONITOR	SUN	GH18PS	NONE	$1,565.00	
G001292	G192775	NA	HARD DRIVE, EXTERNAL	LACIE	300721	140808985	$475.00	
G000738	G192784	2106719	LAPTOP (MPL)	DELL	PP05L	CN-04Y212-48643-34P-2808	$2,500.00	
G001139	G192789	NA	KEYBOARD	MICROSOFT	NONE	NONE	$0.00	
G000638	G197163	1878874	CPU	DIGITAL	NONE	NONE	$1,000.00	
G001100	G197172(P)	2101487	MONITOR	DELL	NONE	KR09J3674760224UAK70	PRICE INCL W/G001099	CPU W/KEYBOARD & MOUSE(G001099) TRANSFERRED VIA NNL07AA00C-PHO-0027, DTD 6/19/09. MONITOR RETAINED.
G001101	G197174	3047238	CPU W/KB & MOUSE	DELL	NONE	83WSG31	$700.00	
G001174	G197190	1742970	CPU	DIGITAL	PB550A9	N1715069QC	$4,100.00	
G001176	G197194	SEE NOTE	EXTERNAL ENCLOSURE W/3 DRIVES	ANDATACO	NONE	NONE	$6,300.00	
G001349	G197197	2008769	CPU W/KB & MOUSE	DIGITAL	PB64A-BA	N161903JKY	$2,000.00	
G001350	G197197(P)	1262592	MONITOR	VIEWSONIC	2082	5441508799	PRICE INCL W/G001349	
G001354	G197198	NA	DRIVE, EXTERNAL	WESTERN SCIENTIFIC	NONE	NONE	$100.00	
G001353	G197199	NA	DRIVE, EXTERNAL	WESTERN SCIENTIFIC	NONE	484817	$100.00	
G001352	G197200	NA	DRIVE, EXTERNAL	WESTERN SCIENTIFIC	NONE	576940	$100.00	
G001351	G197201	1882164	DISK DRIVE UNIT	WESTERN SCIENTIFIC	NONE	484890	$980.00	
G001480	G197204	2099921	CPU W/KB & MOUSE	SUN	A23	148CO57B	$5,200.00	
G001481	G197204(P)	2099928	MONITOR		LSA800	0120409-0126KY0175	PRICE INCL W/G001480	
G001175	G197205	1742972	CPU W/KB & MOUSE	DIGITAL	PB550A9	N1715069RE	$2,100.00	
G001277	G197222	3022631	LAPTOP COMPUTER	DELL	PP07L	NONE	$12,096.00	
G001133	G197259	NA	JAZ DRIVE	IOMEGA	V20005	NONE	$100.00	
G001123	G197260	2100097	DISK DRIVE UNIT	STORCASE TECHNOLOGY	DS100-4-160	201518211	$3,335.00	
G001124	G197261	2106203	CPU W/KB & MOUSE	COMPAQ	E2F6W-A9	L931CQB1A602	$1,668.00	
G001487	G197277	1884898	CPU W/KB & MOUSE	DIGITAL	PBPSMIATA	4015DP9Z1001	$1,500.00	

Government Property List Off-Site
Exhibit C

SSAI Decal	Old Decal (no longer attached)	ECN	Item Description	Manufacturer	Model Number	Serial Number	Unit Price	Notes/Additions/Deletions
G001488	G197277(P)	2099788	MONITOR	SONY	SDM-M81	NONE	PRICE INCL W/G001487	
G001109	G197281(P)	2099931	MONITOR	SUN		0120409-0126KY0154	PRICE INCL W/G001108	
G001432	G197285	2105169	CPU W/KB & MOUSE	DELL	NONE	NONE	$2,529.00	
G000697	G197293	2101846	LAPTOP COMPUTER	DELL	PP01X	HST0M11	$2,450.00	
G000641	G197295	2101189	PROJECTOR	DIRECTPLUS	DP-30	100510	$1,226.00	
G001384	G197308	3047251	LAPTOP COMPUTER	DELL	PP05L	J12NB51	$3,500.00	
G001055	G197309	NA	SCANNER, FLATBED	HEWLETT PACKARD	SCANJET 5300C	NONE	$300.00	
G001319	G197311	NA	CPU W/KEYBOARD AND MOUSE	HEWLETT PACKARD	XW8200	USU442008Q	$11,091.00	
G000778	G197317	NA	HARD DRIVE, EXTERNAL	LACIE	NONE	151309126	$385.51	
G001066	G197323	NA	MONITOR, FLAT SCREEN	SAMSUNG	715V N	GS17H9NY339533 B	$240.00	
G001095	G80965	2098905	MONITOR	SUN	GDM20E20	9617GI4195	$3,900.00	
G000793	N/A	2102044	COMPUTER, LAPTOP	SONY	PCG8AIR	R2724915	$2,449.00	
G000602	N/A	N/A	WIRELESS DATA TRANSCEIVER	FREEWAVE	FGR-115RE	929-9152	$1,350.00	
G000791	N/A	3048998	ACER TRAVELMATE 8204 WLMI LAPTOP	ACER	ZC1	LXTAX06034604005A0EM00	$2,300.00	
G000795	N/A	N/A	DROBO 4-BAY STORAGE ARRAY W/2 1TB DRIVES	DATA ROBOTICS, INC	DRO4D-U	TDC081201434	$1,025.75	
G000796	N/A	N/A	DROBO 4-BAY STORAGE ARRAY W/2 1TB DRIVES	DATA ROBOTICS, INC	DRO4D-U	TDC081201366	$1,025.76	
G000797	N/A	N/A	DROBO 4-BAY STORAGE ARRAY W/2 1TB DRIVES	DATA ROBOTICS, INC	DRO4D-U	TDC081201221	$1,025.76	
G000800	N/A	n/a	THERMO-HYGROMETER (DIGITAL)	OMEGA	RH411	None	$349	
G000803	N/A	N/A	TRACE SERIES INVERTER/CHARGER	XANTREX	TR2412-120-60	P10000933	$859.00	
G000809	N/A	1641070	LAPTOP, PC	DELL	PP15L	CN0D80061296161B3205	$2,368.00	
G000813	N/A	N/A	W/PUREX XBASE & EPILOG CHUCK STYLE ROTARY	EPILOG CORPORATION	8000 LASER SYS	8020-0969622412FMR	$39,240.00	SSAI PO 0608, DATED 4/2/09, TASK 3-028
G000823	N/A	N/A	LIDAR FUNCTIONAL VIBRATION (AIR COOLED) TEST EQUIP.PLUS HEAD EXPANDER AND THREAD	LDS TEST & MEASUREMENTS, INC.	V556 1/4 UNF	10234	$33,855.00	SSAI PO 0608, DATED 4/2/09, TASK 3-028
G000832	N/A	N/A	RECIRCULATING WATER CHILLER W/OPTIONAL DI PKG, RS-485 COMMUNICATIONS, 1/4 NPTF	K-O CONCEPTS, INC.	LCR-8.0	09120314	$5,000.00	SSAI PO 0948, DATED 11/16/09 , TASK 3-018
G000833	N/A	N/A	LASER SHAKER CONTROLLER	LDS TEST & MEASUREMENTS, INC.	LAS200	10233693	$22,550.00	SSAI PO 0608, DATED 4/2/09, TASK 3-028
G000834	N/A	1641190	LAPTOP, INSPIRON	DELL	INSPIRON	(01)07898349890528	$2,300.00	
G000920	N/A	N/A	DI PACKAGE, RS-485 COMMUNICATIONS, BYPASS VALUE AND RTD SENSOR	K-O CONCEPTS	LCR-8.0		$5,614	SSAI PO 0208, DATED 6/11/10, TASK 3-028
G000921	N/A	N/A	DI PACKAGE, RS-485 COMMUNICATIONS, BYPASS VALUE AND RTD SENSOR	K-O CONCEPTS	LCR-8.0		$5,614	SSAI PO 0208, DATED 6/11/10, TASK 3-028
G000946	N/A	N/A	WIRES AND SENSORS TO BE ASSEMBLED INTO UNMANNED AIR VEHICLE	UNKNOWN	UNKNOWN	UNKNOWN	$1,200	NASA/LARC FORM 52, SCN 945514, DATED 9/10/10
G000947	N/A	N/A	HSRL THERMALLY TUNED MICHELSON, 355NM	LIGHTMACHINERY	P/N 0--4721	N/A	$75,264	SUBCONTRACT DELIVERABLE, INVOICE 59217-1012 DATED 10/12/10

Government Property List Off-Site
Exhibit C

SSAI Decal	Old Decal (no longer attached)	ECN	Item Description	Manufacturer	Model Number	Serial Number	Unit Price	Notes/Additions/Deletions
G000949	N/A	2099562	CHASSIS, EXPANSION (8 SLOT)	NATIONAL INSTRUMENTS	PXI1000B	V04X00BB0	$32,954.50	NASA/LARC FORM 52, SCN 944196, DATED 2/26/10
G000952	N/A	N/A	HP POWER ADAPTER AND DOCKING STATION	HP	HSTNN-IX02	CNU032X0HK	$503.70	EMPLOYEE VOUCHER (BILL EDMONDS) DATED 12/2/10, SUBTASK 2616-T1E UNDER TASK 1-014
G000953	N/A	N/A	WATER-WATER COOLING MODULE PLUS OPTIONAL 28 VDC MAIN, 250-WATT/REAR PANEL AND SHEET METAL FAB.	K-O CONCEPTS	LG-20	N/A	$5,205	SSAI PO 0000247 DATED 7/14/10 TASK D74 & Task D57
G000954	N/A	N/A	WATER-WATER COOLING MODULE PLUS OPTIONAL 28 VDC MAIN, 250-WATT/REAR PANEL AND SHEET METAL FAB.	K-O CONCEPTS	LG-20	N/A	$5,205	SSAI PO 0000247 DATED 7/14/10 TASK D74 & Task D57
G000955	N/A	N/A	PUMP MOTOR, VDR PART M09-106-04	K-O CONCEPTS	N/A	N/A	$829	SSAI PO 0000369 DATED 10/27/10 TASK D74
G000956	N/A	N/A	PUMP MOTOR, VDR PART M09-106-04	K-O CONCEPTS	N/A	N/A	$829	SSAI PO 0000369 DATED 10/27/10 TASK D74
122	122					TOTAL	[illegible]	
DELETIONS FROM PREVIOUS EXHIBIT C								
G000748	G157092	258122	RADIOMETER	EPPLEY	PIR	26169F3	$2,150.00	DD FORM 1149 # NNL07AA00C-PHO-0054, DTD 9/30/10
G000718	G158268	1873206	NOTEBOOK COMPUTER	NEC	PC624091803	75002803	$4,957.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G000737	G161012	1876430	NOTEBOOK COMPUTER	NEC	V6237	F81501478	$4,135.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G000755	G180760	2106453	WIRE BONDING MACHINE	KULICKE & SOFFA IND.	4524	700256	$13,000.00	DD FORM 1149 # NNL07AA00C-PHO-0038, DTD 11/09/09 (PCARSS CASE S2101A3789S)
G001253	G180765	NA	HARD DRIVE, EXTERNAL	ACOMDATA	NONE	A0392121	$179.99	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G000756	G180766	NA	CHASSIS W/COMPONENTS	NATIONAL INSTRUMENTS	SCXI-1000	NONE	$695.00	DD FORM 1149 # NNL07AA00C-PHO-0038, DTD 11/09/09 (PCARSS CASE S2101A3789S)
G000719	G183297	1873208	LAPTOP	NEC	NONE	75002811	$4,957.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001323	G183298	2101495	LAPTOP	DELL	PP01A	NONE	$2,422.34	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G000760	G197148	NA	UPS	APC	BK650MC	PB0101320530	$285.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001348	G197191	1430962	TRANSPORT, MAGNETIC TAPE	AVIV CORP.	NONE	17501089	$100.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001347	G197192	2009977	DISK DRIVE UNIT	SEAGATE	ST42400N	15971	$100.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001346	G197193	1091213	DISK SYSTEM	US DESIGN CORP.	QS1000	Q200752	$14,699.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001341	G197195	1254753	CPU W/KB & MOUSE	DIGITAL	PE40A-CA	AB306034WN	$13,600.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001342	G197195(P)	1254754	MONITOR	DIGITAL	VRT19-HA	IS22126535	PRICE INCL. W/G001341	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001115	G197248	3047246	CPU W/KB & MOUSE	DELL	NONE	2R9DF51	$7,000.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001116	G197248(P)	3047262	MONITOR	DELL	NONE	CN-02Y315-71618-45F-AMYP	PRICE INCL W/G001115	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001136	G197263	2106539	CPU W/KB & MOUSE	SAMSUNG	NONE	NONE	$4,800.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10

Government Property List Off-Site
Exhibit C

SSAI Decal	Old Decal (no longer attached)	ECN	Item Description	Manufacturer	Model Number	Serial Number	Unit Price	Notes/Additions/Deletions
G001137	G197283(P)	2106536	MONITOR	VIEWSONIC	VLCDS23895-2W	A13024801060	PRICE INCL W/G001136	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G001345	G197292	1086309	DISK DRIVE UNIT	DIGITAL	SZ12B-XA	AB052016A0	$2,268.00	DD FORM 1149 # NNL07AA00C-PHO-0045, DTD 9/30/10
G000808	N/A	N/A	TRACE SERIES INVERTER/CHARGER	XANTREX	TR2412-120-60	P10005908	$894.00	DD FORM 1149 # NNL07AA00C-PHO-0046, DTD 8/16/10
G000614	G178137	NA	UPS	APC	SUA1500	AS0246231730	$420.00	REPORT OF LOSS, DAMAGE OR DESTRUCTION SUBMITTED TO DCMA FOR RELIEF OF RESPONSIBILITY IN APRIL 2010.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 2

2. AMENDMENT/MODIFICATION NO	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO	5. PROJECT NO. (If applicable)
000002	See Block 16C		

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
NASA/Langley Research Center 9B Langley Blvd., Bldg. 1195B M/S 126 Hampton VA 23681-2199	LARC	NASA/Langley Research Center 9B Langley Blvd., Bldg. 1195B M/S 126 Hampton VA 23681-2199	LARC

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)		9A. AMENDMENT OF SOLICITATION NO.
SCIENCE SYSTEMS AND APPLICATIONS, INC. 10210 GREENBELT RD STE 600 LANHAM MD 20706-6239	(x)	9B. DATED (SEE ITEM 11)
	X	10A. MODIFICATION OF CONTRACT/ORDER NO NNL11AA00B
CODE 5S009 FACILITY CODE		10B. DATED (SEE ITEM 13) 12/09/2010

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 _____ copies 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 ACKNOWLEDGEMENT 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)

N/A

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

CHECK ONE	
	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 date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) Mutual Agreement of the Parties

E. IMPORTANT: Contractor ☐ is not ☒ is required to sign this document and return 1 copies to the issuing office.

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

See attached.

Payment Terms:

Net 30 days

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 (Type or print)	
Janine Good Contracts Manager		Sandra A. Chellis	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED 3/22/12	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED 03/22/12

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

A. The purpose of this modification is to effect the following changes to the subject contract. Therefore, the following changes are hereby made:

1. Change the New Technology Representative information identified in Section G, Paragraph G.13 (a) from COTR: Richard Law to COTR: Lindsay Rogers.

2. Delete **H.18 GOVERNMENT FURNISHED INFORMATION TECHNOLOGY (IT) SERVICES** in its entirety and replace with the following:

H.18 GOVERNMENT FURNISHED INFORMATION TECHNOLOGY (IT) SERVICES

NASA Langley Research Center will furnish all necessary computers and related information technology services that will be connected to the NASA network infrastructure for all on-site contractors. The Agency enterprise service provider will manage the information technology services. The Contractor shall not connect any hardware to the NASA network infrastructure without the permission of Langley Research Center Chief Information Officer (CIO).

NASA Langley Research Center will provide the Contractor access to appropriate NASA information and information systems via a client-based virtual private network (VPN) where necessary. The VPN system shall be operated and maintained by the Agency enterprise service provider with local oversight provided by the Langley Research Center CIO. Individual system and user access will be dependent upon compliance with NASA policies. Dedicated, site-to-site network connections from the contractor's off-site location to the NASA Langley Research Center network will not be allowed.

(End of clause)

3. Incorporate **FAR CLAUSE 52.203-16, PREVENTING PERSONAL CONFLICTS OF INTEREST (DEC 2011)**, by reference in Section I.1.

4. Change the Contracting Officer Technical Representative information identified in Section II B of Exhibit B, Contract Documentation Requirements Documentation Preparation/Submission Instructions, from Richard Law, M/S 401 EMAIL: Richard.C.Law@nasa.gov to Lindsay Rogers, M/S 401 EMAIL: Lindsay.M.Rogers@nasa.gov.

B. All other terms and conditions of this contract remain unchanged as a result of this modification no. 2.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
		1 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
000003	See Block 16C	N/A	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
NASA/Langley Research Center 9B Langley Blvd., Bldg. 1195B M/S 126 Hampton VA 23681-2199	LARC		

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)		9A. AMENDMENT OF SOLICITATION NO.
SCIENCE SYSTEMS AND APPLICATIONS, INC. 10210 GREENBELT RD STE 600 LANHAM MD 20706-6239	(x)	9B. DATED (SEE ITEM 11)
	X	10A. MODIFICATION OF CONTRACT/ORDER NO. NNL11AA00B
		10B. DATED (SEE ITEM 13) 12/09/2010
CODE 5S009	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 _____ copies 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)
N/A

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

CHECK ONE	
	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).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) Mutual Agreement of the Parties

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

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)
See attached.
Payment Terms:
Net 30 days

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 (Type or print)	
Janine Good Contract Manager		Tameka K. Woodley	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED 9/4/13	16B. UNITED STATES OF AMERICA (Signature of Contracting Officer)	16C. DATE SIGNED 9/4/2013

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

A. The purpose of this modification is to effect the following changes to the subject contract. Therefore, the following changes are hereby made:

1. Change the New Technology Representative information identified in Section G, Paragraph G.13 (a) from COTR: Lindsay Rogers to COTR: Shannon Walker.

2. Change the Contracting Officer Technical Representative information identified in Section II B of Exhibit B, Contract Documentation Requirements Documentation Preparation/Submission Instructions, from Lindsay Rogers, M/S 401 EMAIL: Lindsay.M.Rogers@nasa.gov to Shannon Walker, M/S 401 EMAIL: Shannon.L.Walker@nasa.gov.

3. Change the Evaluation Factors and Considerations identified in Part III of Exhibit I, Award Fee Evaluation Plan:

    i. Delete all Sub-criteria Weight percentages from paragraphs A-C
    ii. Delete the Cost Estimating section from paragraph C in its entirety

4. Change the Example of Task Order Standards document, Appendix E of the Award Fee Evaluation Plan, by deleting all the sub-criteria weight percentages

B. All other terms and conditions of this contract remain unchanged as a result of this modification no. 3.

EXHIBIT B

CONTRACT DOCUMENTATION REQUIREMENTS

DOCUMENTATION PREPARATION/SUBMISSION INSTRUCTIONS

A. Monthly Financial Management Report

1. The Contractor shall submit a monthly financial management report, via email as a Microsoft Excel 2007 or pdf document, as provided by the NFS clause 1852.242-73, NASA Financial Management Reporting NASA Procedural Requirements (NPR) 9501.2D, NASA Contractor Financial Management Reporting. This report shall be submitted utilizing NASA Form 533M, Monthly Contractor Financial Management Report, in accordance with submission instructions contained on the reverse side of the form.

2. For this task order contract, a 533M shall be provided for the levels indicated below:

a. Each Authorized Task
- Total for each task order for its inception date
- Subtotal for each calendar year (e.g. 11/1/2010 – 10/31/2011)

b. Contract Total. (Column 9b shall reflect total estimated cost of $# plus award fee of $#.)

c. It is NASA's goal to improve the timeliness for reporting financial data. The Contractor shall submit the NF 533M **not later than the 10th working day following the close of the Contractor's accounting period being reported.** Timeliness of financial reporting will be evaluated as part of the annual performance evaluation.

d. It is NASA's goal to improve the integrity of its financial data. Since NASA uses the Contractor's estimate for the current month (column 8a of the 533M) as accrued costs in its monthly financial statements, it is important that this estimate be your best projection of the actual costs to be reported in column 7a of the subsequent month's 533M.

e. For this task order contract, a 533M for each authorized cost reimbursement task order shall be provided. If specified in the Task Order, the Contractor shall report costs by Government WBS identifier (number).

Therefore, each NF533M shall include a narrative explanation for variances exceeding +-10 percent between estimated dollars shown in the prior month and actual dollars shown in the current month at the total contract level. (For example, the estimated dollars shown for June in column 8a. in the May 533M and the actual June dollars shown in column 7a. in the June 533M.) Accuracy of financial reporting will be evaluated as part of the annual performance evaluation.

3. The minimum reporting categories shall be included in column 6 of this report and shall include:

- Direct Labor Hours
  - Scientist
  - Engineer

    - Technician
    - Other Direct Labor (ODL)
- Direct Labor Dollars
    - Scientist
    - Engineer
    - Technician
    - Other Direct Labor (ODL)
- Overhead(s)
- Subcontract (to include vendor name)
- Material
- Other Direct Cost
- Travel Costs/Expenses
- G&A
- Total Estimated Cost
- Total Estimated Fee
- Total Estimated Cost Plus Fee

Note: NPR 9501.2D NASA Financial Management Report is located at the NODIS website: http://nodis3.gsfc.nasa.gov/main_lib.html

B. Monthly Progress Report -- The Contractor shall submit a monthly progress report summarizing work progress, manpower utilization for assigned work, and material expenditures, via email, in accordance with the requirements of each task order. This report shall be submitted within 10 operating days following the end of the reporting period.

C. Final Reports -- Each task order may require the Contractor to submit a final report, either formal or informal, which documents and summarizes the results. When a formal final Contractor report is required, it shall be submitted in accordance with the instructions contained in NASA FAR Supplement clause 1852.235-73 Final Scientific and Technical Reports. The specified number of approval copies shall be submitted within the time specified in the task orders.

D. Safety Reports -- The Contractor shall submit safety reports to the LaRC Safety and Facility Assurance Office. These reports shall be submitted on a quarterly basis if the period of performance exceeds ninety days. If the period of performance is less than ninety days, the Contractor shall submit a single report upon completion of on-site work. The Safety Report shall include the hours worked on the contract and the number of fatalities, lost time cases, OSHA recordable incidents and first aid cases which have occurred during the past quarter (if less than ninety days, during the contract's period of performance). NOTE: The NASA LaRC Safety and Facility Assurance Office (SFAO) has developed a web-based system entitled Contractor Monthly Accident Reporting (CMAR) located at http://cmar.larc.nasa.gov/login.cfm If you choose to submit your information electronically via CMAR, no additional hard-copy reports are required. Please contact the responsible NASA official identified at the site for additional information regarding access to the system.

E. Notice of Violation Response -- The Contractor shall respond to any Notice of Violation (NOV) issued for safety violations to the prime itself or its' subcontractors within three working days of issuance. The response should include cause for violation; mitigation of impact, if

applicable; planned prevention of recurrence. Response shall be submitted to the issuer of the NOV.

F. Information Technology (IT) Security Plan - The Contractor shall submit the IT Security Plan required by contract clause NFS 1852.204-76 Security Requirements for Unclassified Information Technology Resources for Contracting Officer approval no later than 30 days after effective date of the contract.

G. Annual IT Security Training Report - The purpose of this report is to obtain confirmation that IT security training for contractor employees required under paragraph (e) of NFS clause 1852.204-76 Security Requirements for Unclassified Information Technology Resources, has been completed by all individuals required to do so. NASA requires that this annual training be completed by 100% of the appropriate employees no later than June 30 of each year. Accordingly, a report that includes the information listed below shall be submitted to the Contracting Officer no later than June 30 of each calendar year, so long as the period of performance of the contract has not expired prior to June 30th.

Report Content: (1) the number of employees requiring IT security training in accordance with the contract clause (i.e., in accordance with NPR 2810.1 Nondiscrimination in Federally Assisted and Conducted Programs, which requires such training for all "employees who have access to NASA computer systems and networks that process, store, or transmit information"); (2) the number of those employees in item (1) that have completed the annual training as of June 30th; (3) whether the NASA on-line training system was used (use of the NASA on-line system is optional); and (4) a plan of action with milestones to reach 100% in item (2) if that level has not been achieved by June 30th.

H. RESERVED

I. RESERVED

J. NASA Property in the Custody of Contractors (NASA FORM (NF)1018) -- The Contractor shall submit the NF 1018 no later than October 15th of each year in accordance with the Section I, NFS clause entitled 1852.245-73 Financial Reporting of NASA Property in the Custody of Contractors. The Contractor shall maintain a property control plan and update as necessary.

K. Documentation for Transferring Property to the Government
It is not the intent of the Government for the Contractor to acquire property, titled to the Government, as a direct cost to the contract however, in the event that it is necessary and in accordance with the NFS clause 1852.245-71, Installation- Provided Government Property clause of this contract, accountability for that property which is acquired for the Government under this contract shall be passed to the Government using the following procedure:

The transfer of accountability shall be initiated by the Contractor submitting a Requisition and Invoice/Shipping Document, DD Form 1149, accompanied by a copy of the Contractor's applicable purchasing and receipt document for the property. The Contractor shall insert both the Contractor's Subcontract/ Purchase Order number and the Government contract number on the DD Form 1149 under the Federal Stock Number, Description, and Coding of Material and/or Services block. For purchases of supplies and materials, this document shall be submitted within 30 days after the end of each calendar-year quarter (that is, not later than January 30, April 30, July 30, and October 30). For equipment purchases, the DD 1149 shall be submitted

within five workdays after acceptance of each item of equipment by the Contractor. Receipt by the Contractor of a copy of the DD Form 1149 signed by the Government relieves the Contractor of accountability for the property specified on that form.

L. Quality Plan -- Within 30 calendar days after the effective date of the contract, the Contractor shall submit a quality plan that specifies which procedures and associated resources shall be applied by whom and when to a specific project, product or process in order to accomplish contractual requirements. The plan and subsequent revisions will be reviewed and accepted by the Contracting Officer or the designated representative.

M. Quality System Documents (ISO 9001) -- The Contractor shall submit the following ISO-compliant documents in accordance with **H.15**, Quality Management System Certification/Registration Requirements or **H.16**, ISO 9001 Certification/Registration Requirements Regarding the Offeror's Quality Management System, whichever applies, no later than nine months from the effective date of contract:

1. Quality System Manual

2. Quality System Procedures - These procedures shall address:

(1) Contract and subcontract management, (2) customer requirement review and execution, (3) task management, including work order generation and processing, (4) document control, (5) handling of customer supplied product, (6) corrective, preventive, and continuing improvement action systems, (7) training of employees, and (8) customer satisfaction/performance measurement.

N. Federal Contractor Veterans Employment Report -- In compliance with Clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans, the Contractor shall submit the Federal Contractor Veterans Employment Reports (VETS-100) as required by this clause.

O. Evidence of Insurance -- The Contractor shall submit evidence of the insurance coverage, required by the Section H, NFS Clause 1852.228-75 Minimum Insurance Coverage, (i.e., a Certificate of Insurance or other confirmation), to the Contracting Officer prior to performing under this contract. The Contractor shall also present such evidence to the Contracting Officer prior to commencement of performance under any options exercised, if applicable.

P. Interim patent rights report - After the first anniversary date of the contract, the Contractor shall submit an annual list of all subject inventions to be disclosed as set forth in FAR 52.227-11 Patent Rights--Retention by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). This report is due by March 31 of each year.

Q. Final patent rights report - The Contractor shall submit a listing of all subject inventions or certify that there were none as set forth in FAR 52.227-11 Patent Rights--Retention by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). This report is due prior to contract closeout.

R. Invention disclosure reporting - The Contractor shall disclose each subject invention under the contract as set forth in FAR 52.227-11 Patent Rights--Retention by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). The electronic or paper version of NASA Form 1679, Disclosure of Invention and New

Technology (Including Software), may be used for this reporting. Both the electronic and paper versions of this form may be accessed at http://invention.nasa.gov. Disclosures are required within two months after the inventor discloses it in writing to Contractor personnel who are responsible for patent matters.

S. On and Near-Site Staffing Report - The contractor shall submit a report which includes the number of on-site and near-site Work Year Equivalents (WYE's) performing work on the contract, broken down by skill category. An initial report shall be submitted within 30 days from the effective date of the contract. Subsequent updated reports are due quarterly, on January 1, April 1, July 1 and October 1 of each year.

These reports shall be e-mailed to the following: larc-dl-contractorwye@mail.nasa.gov

The subject line for the e-mail should be "Contractor WYE".

"On-site" WYE's include the time worked by prime contractor and subcontractor employees on this contract whose primary duty station is on-site at Langley Research Center, whether such employees charge direct or indirect in the contractor's or subcontractor's accounting systems (e.g., management and administrative staff may charge their time to an "indirect" account, but the time worked by such individuals shall still be counted in the on-site WYE).

"Near-site" WYE's include the time worked by prime contractor and subcontractor employees on this contract whose primary duty station is within 50 miles of LaRC, whether such employees charge direct or indirect in the contractor's or subcontractor's accounting systems. Work performed on local college campuses shall not be considered "near site" WYE's.

The contractor shall use the number of hours in its productive work year to compute the number of WYE's to be reported.

The contractor shall break out the On-site and Near-site WYE by skill category using the following categories: Scientist, Engineer, Technician, Administrative Professional, and Clerical.

The contractor shall break out the On-site and Near-site WYE by task order number, project title, and principle Technical Monitor.

T. Organizational Conflict of Interest Avoidance Plan – In compliance with Section H, H.12 Organizational Conflicts Of Interest (OCI) (LaRC 52.227-96) and I.12, Access to Sensitive Information (NFS 1852.237-72), the Contractor shall provide the Contracting Officer with a comprehensive OCI avoidance plan IAW the RFP suspense date and update as needed throughout the contract performance period.

U. Source Code – The Contractor shall provide to the Contracting Officer's Technical Representative, all source code and all supporting documentation explaining the use and outcome of source code for each Task Order. See Section H, H.2.

V. Self-Assessment Report – The Contractor may submit a Self-Assessment Report in accordance with the instructions contained in the Award Fee Evaluation Plan (Exhibit L). The Self-Assessment shall not exceed 5 pages, not including cost analysis reports, and shall be delivered to the Government within 25 days from the end of each award fee evaluation period.

W. Estimate of Percentage of Recovered Material Content for EPA Designated Products - In compliance with Clause I.8, Estimate of Percentage of Recovered Material Content for EPA Designated Products (FAR 52.223-9), the Contractor shall provide to the Environmental Management Office the percentage of the total recovered material used in contract performance including, if applicable, the percentage of postconsumer material content, upon contract completion.

II. DOCUMENT DISTRIBUTION REQUIREMENTS

A. Unless otherwise specified elsewhere in this contract, reports and other documentation shall be submitted f.o.b. destination as specified below, addressed as follows:

National Aeronautics and Space Administration Langley Research Center
Attn: **TBD/See below** , Mail Stop **TBD/See below** Contract NNL11AA00B
Hampton, VA 23681-2199

B. The following letter codes designate the recipients of reports and other documentation which are required to be delivered prepaid to Langley Research Center by the Contractor:

A--Contract Specialist, Mail Stop 126

B--Contracting Officer Technical Representative
~~Lindsay Rogers~~Shannon Walker, M/S 401
EMAIL: ~~Lindsay.M.Rogers@nasa.gov~~Shannon.L.Walker@nasa.gov

C--New Technology Representative, Mail Stop 401

D—Financial Management, LaRC-DL-NF533@mail.nasa.gov

E--Safety and Facility Assurance Branch, Mail Stop 421

F--Contractor Labor Relations Officer, Mail Stop 144

G—Financial Management, Mail Stop 175

H--Patent Counsel, Mail Stop 141

I--Industrial Property Officer, Mail Stop 377

J--Center Information Technology Security Manager (CITSM), Mail Stop 124

K--According to instructions on form

L--As required by Task Order

M--Task Monitor

N--Center STI Publication Manager, Mail Stop 196

O--Industry Assistance Representative, Mail Stop 144

P--On and Near-Site Staffing Report, LaRC-DL-contractorwye@mail.nasa.gov

Q—Environmental Management Office, Mail Stop 418

C. The following are the distribution requirements for reports and other documentation required to be delivered f.o.b. destination. The numeral following the letter code specifying the number of copies to be provided:

LETTER CODE AND DOCUMENT: DISTRIBUTION

DISTRIBUTION REQUIREMENTS		
Document Letter	**Document**	**Distribution Code and Quantity**
A	Monthly Financial Management Report (533M)	A-1, B-1, D-1 (Via Email)
B	Monthly Progress Report	A-1, B-1, M-1 (Via Email)
C	Final Reports	A-1, B-2, M-1
D	Safety Reports or CMAR website	E-1, or in accordance with directions posted on the website (CMAR).
E	Notice of Violation Responses	A-1, E-1
F	IT Security Plan	A-1, B-1, J-1
G	Annual IT Security Training Report	A-1, B-1, J-1,
H	RESERVED	A-1, B-1, F-1
I	RESERVED	N/A
J	NASA Property in the Custody of Contractors (NF 1018)	I-1
K	Requisition and Invoice/Shipping Document	I-1

EXHIBIT B

L	Quality Plan	A-1, B-1, E-1
M	Quality System Documents	A-1, B-1
N	Federal Contractor Veterans Employment Report (VETS-100)	K-1
O	Evidence of Insurance	A-1
P	Interim Patent Report	A-1, B-1, C-1, H-1
Q	Final Patent Report	A-1, B-1, C-1, H-1
R	Invention Disclosure Reporting	A-1, B-1, C-1, H-1
S	On and Near-Site Staffing Report	A-1, B-1, P-1 (Via E-mail)
T	Organizational Conflicts of Interest Avoidance Plan	A-1, B-1
U	Source Code and Supporting Documentation	B-1
V	Self-Assessment Report	A-1, B-1 (Via E-mail)
W	Estimate of Percentage of Recovered Material Content for EPA Designated Products	Q-1

D. When the Contract Specialist is not designated above to receive a copy of a report or document, the Contractor shall furnish a copy of the report/document transmittal letter to the Contract Specialist. If delegated, the Contractor shall also furnish a copy of the transmittal letter and a copy of each Financial Management Report to the delegated Administrative Contracting Officer of the cognizant DoD (or other agency) contract administrative services component.

AWARD FEE EVALUATION PLAN

Science, Technology and Research Support Services (STARSS II)

Contract No. NNL11AA00B

Exhibit I

CONTENTS

Exhibit I

PART I - AWARD FEE EVALUATION BOARD CHARTER AND MEMBERS

A. General

The Award Fee Evaluation Board (AFEB) derives its authority from a Langley Research Center (LaRC) memorandum signed by the Director dated January 7, 2011.

The Charter of the AFEB is to maintain an organization and establish a method of operation which will ensure acquisition of data necessary to permit a valid semi-annual assessment of the Contractor's performance in the following three (3) areas: Technical Performance, Project Management, and Cost. The AFEB is to develop an evaluation plan, evaluate the Contractor's overall performance concerning the contract work, discuss such evaluations with the Contractor, and submit to the Fee Determination Official (FDO) a fee recommendation for each evaluation period with applicable results and findings.

B. Award Fee Evaluation Board

The AFEB Membership consists of those individuals appointed in the memorandum dated January 10, 2011, signed by the Deputy Director. Changes in the AFEB Chairperson, other Voting members, secretary, and coordinators will be approved by the FDO. The AFEB Chairperson will approve changes in monitors. The Center Director assigns the FDO and will make changes as required. The Contractor will be provided with copies of any such changes.

PART II - EVALUATION PROCESS

The participants in the award fee process and the process itself are described below:

A. AFEB Meeting - The meetings will be scheduled so that the evaluation process can be completed and the Determination and Findings presented to the FDO for action within 45 days following completion of the evaluation period. At least three voting AFEB members shall be present in order to conduct the meeting.

B. AFEB Chairperson - A NASA LaRC employee designated to lead the award fee evaluation process. The Chair is responsible for leading the preparation of the award fee plan and for all meetings of the AFEB. The Chair shall schedule all meetings so that the evaluation process can be completed within the time allotted. If the AFEB Chair is unavailable to schedule and conduct the meeting, the FDO shall appoint one of the other voting members to serve as Chairperson for the award fee evaluation period.

C. AFEB Secretary - A NASA LaRC employee responsible for the documentation of the activities of the AFEB. The Secretary is responsible for the minutes of meetings or other documentation that summarizes the information reviewed, including any additional information provided by the Contractor, and the consideration given to all such information. The Secretary is also responsible for announcements, documentation and files that are important to support the meetings and recommendations of the Board.

D. Monitor - A NASA LaRC employee designated to observe, assess, and report the performance by the Contractor on a specified Task Orders (TOs). Monitors are identified on the TOs. The Monitor will complete a semi-annual TO performance report using the performance standards specified in the TOs as the basis for evaluation. The Monitor will assign an overall

adjective and numerical rating to TOs, with consideration given to quality and timeliness, using the definitions set forth in Exhibit B. In addition, the Monitor shall indicate any major strengths or weaknesses that need to be brought to the AFEB's attention.

E. Contractor - The Contractor may submit a 5-page (or less) self-assessment report including the cost analysis reports (not included in the 5-page limitation) to the technical and business coordinators within 25 days from the end of the initial 6-month evaluation period and each additional 6-month evaluation period. The report shall contain any pertinent information that is considered critical to the evaluation process. The Technical and Business Coordinators will assess the Contractor's performance for the period using this report. Furthermore, the Contractor will have the opportunity to provide a 15-minute presentation to the AFEB at the beginning of the AFEB meeting.

F. Technical and Business Coordinators - NASA LaRC employees designated to receive, validate, and assess the monitors' reports and present performance information to the AFEB. The Deputy Director has appointed coordinators as set forth in Part I above.

There are two coordinators for this contract. The Technical Coordinator is responsible for documenting and presenting the evaluation of the Contractor's Technical performance and will support the Business Coordinator in addressing the Management and Safety performance. The Business Coordinator is responsible for documenting and presenting the evaluation of the Contractor's Cost and Management and Safety performance.

The Technical Coordinator will review and consolidate the Monitors' semi-annual evaluation reports and input their adjective and numerical ratings into a database, which will average (weighted) the total numerical score. The Technical Coordinator will make an independent assessment of the performance rendered by the Contractor and may modify Monitor input if circumstances warrant doing so. The Technical Coordinator will present the recommended final score along with any significant strengths and/or weaknesses and input from the Contractor to the AFEB.

The Business Coordinator will evaluate Management and Safety and Cost and recommend an adjective rating as described in Exhibit B. The Business Coordinator will also review the cost analysis as defined below and present the findings to the AFEB. Under Management and Safety, the Business Coordinator will take into account the effectiveness of the Contractor in recognizing and resolving business problems and include technical comments from the Technical Coordinator. The Business Coordinator will document strong and weak points in reference to business management along with the results of the cost analysis and report the findings to the AFEB.

The Coordinators' reports will be forwarded to the AFEB at least 2 days prior to the scheduled AFEB meeting. The Coordinators will present an oral briefing of their evaluation results to the AFEB at the evaluation meeting.

G. AFEB - A team of NASA LaRC employees who perform a review of all aspects of Contractor performance and recommend an appropriate performance rating and fee amount to the FDO. All changes to the voting member appointments will be approved by the FDO.

The AFEB will develop an evaluation plan for evaluating the Contractor's performance and will periodically review the plan to determine if it is still current and whether any changes are

necessary. The AFEB will convene on a schedule that ensures completion of the total award fee process within 60 days according to Exhibit A.

Using the approved evaluation plan and giving due consideration to all known performance data, the AFEB will assess the Contractor's overall performance. The AFEB will develop an adjective rating as set forth in **Appendix B** of this plan for each of the evaluation factors: Technical Performance, Management and Safety, and Cost. The adjective ratings will then be converted to a numerical rating.

The AFEB will then weigh each of the factor numerical ratings by the Factor weights as follows:

Technical Performance	50%
Project Management	25%
Cost	25%

The AFEB will then sum the weighted scores to derive a recommended award fee rating. The AFEB will review the rating to ensure that it reflects the consensus regarding the Contractor's total overall performance for the period. The AFEB will then derive a recommended fee amount.

The AFEB will provide the Contractor with a briefing of the evaluation findings. The AFEB will consider any further performance data offered by the Contractor, and if necessary, will revise evaluation findings, adjective ratings, and recommend a fee rating to reflect this additional information. The AFEB will document its evaluation results and recommend a fee amount for transmittal to the FDO. If the FDO's final determination of award fee is different from that recommended by the AFEB, the FDO will document the rationale for the AFEB's file. The business coordinator will prepare a "Notice of Award Fee" for transmittal by the Contracting Officer to the Contractor.

The Office of Procurement will maintain the official award fee evaluation files containing: the AFEB Establishment Memorandum and revisions, evaluation plan and revisions, minutes of meetings, coordinators' and monitors' reports, Contractor submittals, general correspondence, memoranda to the FDO, determinations of award fee, notices of award fee, and other documents of significance.

H. Fee Determination Official - A member of LaRC's management designated to review the semi-annual recommendation of the AFEB in order to make a final determination of award fee.

PART III - EVALUATION FACTORS AND CONSIDERATIONS

The following is a description of evaluation factors to be considered. The Contractor's performance levels will be assessed for each factor using the adjective ratings described in Exhibit B of this plan. The evaluation process will encompass actual performance and the conditions under which it was achieved. For example, performance will be considered in light of the priorities and workload existing during the evaluation period, taking into consideration factors beyond the Contractor's control, which either enhanced or detracted from performance.

A. Technical Performance - The effectiveness of the Contractor's overall technical performance will be evaluated on each Task Order and wrapped up to the contract level.
Criteria Weight 50%

Consideration will be given to the following sub-criteria.

Deliverables: The primary basis of the evaluation will be the specific performance standards listed in individual TOs

- Quality
- Timeliness

~~*Sub-criteria Weight 60%*~~

Risk Mitigation: Consideration will also be given to the ability to assess and manage risk including:

- Mission success
- Safety, security, health
- Export control

~~*Sub-criteria Weight 40%*~~

B. Project Management - This factor is evaluated at the contract level, for each Award Fee Period.
Criteria Weight 25%

Management: The effectiveness of the Contractor's overall business management will be evaluated. Consideration will be given to:

- Management effectiveness
- Response to emergency and other urgent TOs
- Recognition, resolution and prevention of problems
- Management of project schedule and documentation
- Communications/cooperation/working relationships with Government
- Effective staffing of the contract (including training)
- Soundness of management systems (e.g., purchasing, subcontracting, time and attendance, and work scheduling)
- Adequacy of staff to perform the contract
- Trends of recurring problems
- Management of Government facilities and property

~~*Sub-criteria Weight 60%*~~

Safety & Health: The Contractor's safety and health program and record will also be evaluated as part of this Factor. Consideration will be given to:

- Company's emphasis on safety,
- Effectiveness of the safety organization
- safety training
- actions taken to prevent accidents or safety violations
- recognition of safety hazards/violations and remedial actions
- An analysis will be made of lost-time and other accidents, the number, types, duration of lost time, and reasons for the accidents

~~*Sub-criteria Weight 40%*~~

The technical and business coordinators will consider any other actions that significantly contribute to or detract from effective management.

C. Cost - The effectiveness of the Contractor's management of cost will be evaluated for the contract level for each Award Fee Period. The cost evaluation will be based on the TOs performed during the initial 6-month evaluation period and each subsequent 6-month evaluation period and an overall assessment of the Contractor's indirect rates.
Criteria Weight 25%

Cost Analysis: Of paramount importance is the reasonableness of the cost incurred as compared to the services rendered for all major cost elements. This will include an analysis of:

- Total cost incurred compared to the planned cost for the same period
- Analysis of incurred costs will address
  - by major cost element
  - variances of actual cost from planned cost, with judgments made as to the reasons for variances and the effectiveness or wisdom of the Contractor's efforts to manage overall cost in a manner consistent with Government cost and funding limitations
  - Consideration will be given, as appropriate, to control indirect rates, economies in the use of manpower and other resources, productivity achieved for the cost incurred, and the cost effectiveness of purchases made
  - Accuracy of cost tracking, reporting and forecasting will be evaluated.

~~*Sub-criteria Weight 50%*~~

~~Cost Estimating: An important aspect of cost controls is the ability to properly estimate projected cost on individual task order. This will include an analysis of:~~
~~*(a) Computing the percentage of Task Order based on the number of task orders where the task order actual cost is within ± 10% of the task order planned cost*~~
~~*(b) Computing the percentage deviation by subtracting the total actual cost from the total planned cost and dividing the result by the total planned cost*~~
~~*(c) Computing the percentage overall with the planned costs by computing [100-(the absolute value of the percentage determined above)]*~~
~~*(d) Average the values determined by (a) and (c) above*~~
~~*Sub-criteria Weight 50%*~~

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PART IV - CHANGES TO EVALUATION PLAN

Throughout the period of performance, both parties to the contract are encouraged to submit suggestions for improving management emphasis, motivating higher performance levels, or simplifying the evaluation process. Both the Government and the Contractor should work to eliminate any unnecessary contractual, organizational, or conceptual barriers that impede a partnering relationship.

Any recommended changes to this award fee evaluation plan will be made by the AFEB and will be submitted to the FDO for approval. Changes will be made available to the Contractor, through the Contracting Officer, prior to the first evaluation period in which the change will be effective.

Exhibit I

APPENDIX A

ACTIONS AND SCHEDULES FOR AWARD FEE DETERMINATIONS

The following is a summary of the principal actions involved in determining the award fee for the evaluation periods.

Action	Schedule (Calendar Days)
1. AFEB Chair and members appointed	Prior to end of first award fee period.
2. AFEB considers reports and other requested performance information	On-going
3. Technical Monitors submit evaluation reports	NLT 14 days after end of each award fee period.
4. Contractor submits self-assessment report	NLT 25 days after end of each award fee period.
5. AFEB meets to assess Contractor's overall performance, assign an adjective rating and a proposed award fee based on the Scoring Guidelines	NLT 30 - 40 days after end of each award fee period
6. AFEB meets with the Contractor to discuss findings and make changes, if needed, based on any new information given by the Contractor	NLT 35 - 40 days after end of each award fee period
7. AFEB establishes findings and recommendations for the Award Fee Evaluation Report (AFER)	NLT 35 -40 days after end of each award fee period.
8. AFEB chair submits AFER to the FDO	NLT 40 days after end of each award fee period.
9. FDO considers the AFER and discusses it with AFEB, as appropriate.	NLT 44 days after end of each award fee period.
10. FDO signs award fee determination letter. Office of Procurement sends notification of Award Fee to the Contractor.	NLT 45 days after end of each award fee period.
11. Payment made to Contractor.	NLT 60 days after end of period.

Exhibit I

APPENDIX B

SCORING GUIDELINES

Each evaluation factor is scored based on these guidelines. The determining percentage for each factor is weighted to derive a recommended award fee rating.

Adjective	Description	Percentage of Award Fee
Excellent	Of exceptional merit; exemplary performance in a timely, efficient, and economical manner; very minor (if any) deficiencies with no adverse effect on overall performance.	91-100
Very Good	Very effective performance, fully responsive to contract requirements accomplished in a timely, efficient, and economical manner for the most part. Only minor deficiencies with minimal effect on overall performance.	81-90
Good	Effective performance; fully responsive to contract requirements; reportable deficiencies, but with little identifiable effect on overall performance.	71-80
Satisfactory	Meets or slightly exceeds minimum acceptable standards; adequate results. Reportable deficiencies with identifiable, but not substantial, effects on overall performance.	61-70
Poor/ Unsatisfactory	Does not meet minimum acceptable standards in one or more areas; remedial action required in one or more areas; deficiencies in one or more areas which adversely affect overall performance	60 and Below*

Any factor receiving a grade of "Poor/Unsatisfactory" (less than 61) will be assigned zero performance points for purposes of calculating the award fee amount. The Contractor will not be paid any award fee when the total award fee score is "Poor/Unsatisfactory" (less than 61).

An overall fee determination of zero will be assessed for any interim evaluation period in which there is a major breach of safety or security as defined in NASA FAR Supplement 1852.223-75 (May 2001).

If there is any major breach of safety or security and/or to cost control, the Board will determine the fee taking into consideration the information noted in FAR 1816.405

APPENDIX C

GENERAL INSTRUCTIONS FOR PERFORMANCE MONITIORS

1. **Monitoring and Assessing Performance**

a. Monitors will prepare outlines of their assessment plans, discuss them with appropriate contractor personnel to assure complete understanding of the evaluation and assessment process.

b. Monitors will plan and carry out on-site assessment visits, as necessary.

c. Monitors will conduct all assessments in an open, objective and cooperative spirit so that a fair and accurate evaluation is obtained. This will ensure that the contractor receives accurate and complete information from which to plan improvements in performance. Positive performance accomplishments should be emphasized just as readily as negative ones.

d. The monitor will discuss the assessment with contractor personnel as appropriate, noting any observed accomplishments and/or deficiencies. This affords the contractor an opportunity to clarify possible misunderstandings regarding areas of poor performance and to correct or resolve deficiencies.

e. Monitors must remember that contacts and visits with contractor personnel are to be accomplished within the context of official contractual relationships. Monitors will avoid any activity or association which might cause, or give the appearance of, a conflict of interest.

f. Monitor discussions with contractor personnel are not to be used as an attempt to instruct, to direct, to supervise or to control these personnel in the performance of the contract. The role of the monitor is to monitor, assess and evaluate not to manage the contractor's effort.

2. **Documenting Evaluation/Assessment**
Evaluations and assessments conducted and discussions with contractor personnel will be documented as follows:

Review Task Order Deliverables
- Explain acceptable Quality Standard and document on Performance Monitor Report
- Explain acceptable Timeliness Standard and document on the Performance Monitor Report

Review Task Order Risk Mitigation and expectations of mission success, any particular safety, health or security concerns to include export control. See **Appendix E** for a sample document that will be attached to a Task Order

3. **Evaluation/Assessment Reports**
Monitors will prepare a formal Performance Monitor Report in accordance with the following instructions and submit it to the Technical Coordinator. See **Appendix D** for sample report Form. Variation of the Forms may be utilized with approval of the Technical Coordinator.

4. **Verbal Reports**
Monitors will be prepared to make verbal reports of their evaluations and assessments as required by the AFEB Chair.

Exhibit I

APPENDIX D

PERFORMANCE MONITOR REPORT

Task #	**[Fill in #]**
TITLE	**[Fill in]**
MONITOR	[Fill in Name – extension #]
Cost During Period	$[Fill in]
WYE During Period	[Fill in]
Technical Performance Strength [Consider the Standard set on the Task Order]	
Technical Performance Weakness [Consider the Standard set on the Task Order]	
Managerial Performance Strength [Consider the Standard set on the Task Order]	
Managerial Performance Weakness [Consider the Standard set on the Task Order]	
Other Comments	
Adjective Rating	See Appendix B
Numerical Rating	

Exhibit I

APPENDIX E

EXAMPLE OF TASK ORDER STANDARDS

AWARD FEE CONSIDERATIONS FOR TASK ORDER

Technical Performance - The effectiveness of the Contractor's overall technical performance will be evaluated on each Task Order and wrapped up to the contract level. *Criteria Weight 50%*

Consideration will be given to the following sub-criteria.
Deliverables: The primary basis of the evaluation will be the specific performance standards listed in individual TOs

- Quality
- Timeliness

~~*Sub-criteria Weight 60%*~~

Risk Mitigation: Consideration will also be given to the ability to assess and manage risk including:

- Mission success
- Safety, security, health
- Export control

~~*Sub-criteria Weight 40%*~~

Deliverables (SAMPLE)

Deliverable Section/Item	Due Date/Time Frame	Quality Standard	Service Level
TO Para 5.0 – Monthly Report	Due 10 days after 1st of the Month	Concise, clear content, with no more than 5 administrative errors per page and in the proper format	95% accuracy rate per award fee period and 98% on-time delivery
TO Para 5.0 – Computer code	Due on 27 Apr. 2011	Accurate and seamless transition	100% accuracy rate per award fee period and 100% on-time delivery

Risk Mitigation (SAMPLE)

Area to be considered	Standard
Mission Success	Accurate analysis and comparison of CERES and Langley geostationary satellite cloud properties with similar cloud properties derived from CALIPSO
Safety, Security, health	Zero security incidents, or reportable safety infractions
Export/ITAR Control	Comply with all ITAR/Export control directives
Project Management	Update Task Monitor when schedule changes are anticipated

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
		1 4

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
000004	See Block 16C	N/A	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
NASA/Langley Research Center 9B Langley Blvd., Bldg. 1195B M/S 126 Hampton VA 23681-2199	LARC		

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)	9A. AMENDMENT OF SOLICITATION NO.
SCIENCE SYSTEMS AND APPLICATIONS, INC. 10210 GREENBELT RD STE 600 LANHAM MD 20706-6239	9B. DATED (SEE ITEM 11)
	x 10A. MODIFICATION OF CONTRACT/ORDER NO. NNL11AA00B
	10B. DATED (SEE ITEM 13) 12/09/2010
CODE 58009 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 _____ copies 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 ACKNOWLEDGEMENT 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)
N/A

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

CHECK ONE	
	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).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) Mutual Agreement of the Parties

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

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

Payment Terms:
Net 30 days
See continuation pages.

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 (Type or print)
Janice Good Contracts Manager	Tameka K. Woodley
15B. CONTRACTOR/OFFEROR Janice Good (Signature of person authorized to sign)	15C. DATE SIGNED 5/7/14
16B. UNITED STATES OF AMERICA Tameka K Woodley (Signature of Contracting Officer)	16C. DATE SIGNED 5/8/14

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

The purpose of this modification is to effect the following changes to the subject contract. Therefore, the following changes are hereby made:

A. Delete **H.7 SECURITY PROGRAM/NON-U.S. CITIZEN EMPLOYEE ACCESS REQUIREMENTS (LARC 52.204-91) (FEB 2007)** in its entirety and replace with the following:

H.7 SECURITY PROGRAM/FOREIGN NATIONAL EMPLOYEE ACCESS REQUIREMENTS (LARC 52.204-91) (APR 2014)

1) Applicable Definitions:

Foreign National: Any person who is not a U.S. citizen and who is not a lawful permanent resident as defined by 8 U.S.C. 1101(a) (20) or any person who is not a protected individual as defined by 8 U.S.C. 1324b(a) (3). This also means any foreign corporation, business association, partnership, trust, society or any other entity or group that is not incorporated or organized to do business in the U.S., as well as any international organizations, any foreign government, and any agency or subdivision of foreign governments (e.g., diplomatic missions).
Lawful Permanent Resident (LPR): A non-U.S. citizen legally permitted to reside and work within the U.S. and issued a Resident Alien Identification (also known as a Green Card). LPRs are to be afforded all the rights and privileges of a U.S. citizen with the exception of voting, holding public office, access to classified national security information, and employment in the federal sector (except for specific needs or under temporary appointment per 5 CFR, Part 7, Section 7.4). LPRs are not prohibited from accessing export controlled commodities, but must have a work-related "need-to-know" for access. LPRs are considered foreign nationals under immigration laws. LPR, as defined herein, is to replace the term "Permanent Resident Alien" (PRA) in all NASA guidance that has not yet been updated to the use of LPR.

2) Requirements for Center Access for Foreign Nationals who are not LPRs:

Access to the NASA Langley Research Center by foreign nationals who are not LPRs shall be approved in accordance with NPR 1600.4, "Identity and Credential Management" and Interim Policy Regarding Foreign National Access Management, dated April 2, 2014. Center access approval requires a minimum of 5 (five) working days advance notice. Designated country nationals require a minimum of 30 (thirty) working days advance notice because of additional approval requirements. Foreign nationals who are not LPRs must be escorted by a NASA Civil Servant or permanently badged contractor at all times while on Center unless otherwise approved in writing by the International Visitors Coordinator (IVC).

3) Requirements for Center Access for LPRs:

a) Visit requests should be submitted directly to the Badge and Pass Office (BPO) using an LF-103. LPRs may be sponsored for Center access by permanently badged contractor employees or NASA civil servants. Contractor LPRs are generally expected to be sponsored by the employing contractor.
b) LPRs who will be at LaRC in excess of 29 days will be processed through IdMAX.

c) LPRs who will be at LaRC in excess of 179 days will be processed for PIV credentials that will remain valid for 5 years.
d) Contractor management is responsible for ensuring credentials issued to LPRs sponsored by the contractor are returned when the LPR no longer requires access to NASA LaRC under the contract or no longer works for the contractor.
e) No Security Transfer Technology Control Plan (STTCP) is required for LPRs.
f) LPRs on a work related, "need-to-know" basis are allowed access to export controlled commodities. It is incumbent on the Branch Head or Program Manager to appropriately determine who should have access to export controlled information. The Security Services Branch and the Center Export Administrator are available for guidance.
g) LPRs are permitted to carry personal mobile devices on Center. Personal mobile devices are not be used to record, store, or process NASA data and are not to be used to take photographs within NASA facilities.
h) LPRs and non-LPR Foreign Nationals must request and obtain prior approval from Joint Base Langley-Eustis prior to entering Joint Base Langley-Eustis. Access is subject to conditions imposed by Joint Base Langley-Eustis and may require a U.S. citizen escort at all times.

4) Violation of security policies by contractor personnel may result in withdrawal of Center access for the offending personnel and/or contractual actions against the contractor. Additionally, violations may be criminal in nature and are subject to criminal prosecution.

(End of clause)

B. Delete **G3. SUBMISSION OF VOUCHERS FOR PAYMENT (1852.216-87) (MAR 1998)** in its entirety and replace with the following:

G3. SUBMISSION OF VOUCHERS FOR PAYMENT (1852.216-87) (LARC APR 2014)

(a) Except for classified vouchers, the Contractor shall submit interim and final cost vouchers electronically using the DOD Wide Area Work Flow (WAWF) system. Vouchers will be reviewed by DCAA based upon a risk-based sampling review process.

(1) To access the DOD WAWF system, the contractor shall be required to have a designated electronic business point of contact in the System for Award Management at https://www.acquisition.gov and be registered to use the DOD WAWF at https://wawf.eb.mil following the step-by-step procedures for self-registration available at this web site.

(2) NASA voucher payment information can be obtained at the NASA Shared Services Center (NSSC) Vendor Payment information web site at: https://www.nssc.nasa.gov/vendorpayment. For technical WAWF help, contact the WAWF helpdesk at 1-866-618-5988. Please contact the NSSC Customer Contact Center at 1-877-NSSC123 (1-877-677-2123) with any additional questions or comments.

(3) The vendor shall use the "Cost Voucher" document type in WAWF. The Activity Address Codes (ACC) to be populated in WAWF for submission of vouchers under this contract are:

a. Pay Official ACC: 803112 (NSSC)
b. Admin DoDACC: 803364 (LaRC)
c. DCAA Auditor DoD ACC: HAA819 (SSAI)
d. For "Final Cost Voucher", add Service Approver DODAAC: 803364 (LaRC)

(4) The Contractor shall ensure that the payment request includes appropriate contract line item descriptions of the work performed and all relevant back-up documentation to support each payment request.

(5) The Contractor shall enter the e-mail address identified below in the "Send Additional Email Notifications" field of WAWF once a document is submitted in the system:

E-mail address: Tameka.Woodley@nasa.gov

(b) Vouchers for payment of fee resulting from contract performance or provisional fee (if authorized under this contract) shall be prepared using an SF 1034 and submitted electronically to the following address for payment:

E-mail address: NSSC-AccountsPayable@nasa.gov
Mailing address: NSSC - FMD Accounts Payable
Bldg. 1111, C Road
Stennis Space Center, MS 3952
Fax Number: 1-866-209-5415

(c) For both cost voucher and fee submissions, a concurrent copy of the voucher shall be provided electronically to the NASA Contracting Officer. The Contracting Officer may designate other recipients as required.

(d) The NSSC is the designated billing office for cost and fee vouchers for purpose 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)

C. Delete the following exhibits from Section J.1 in their entirety and replace with the attached revised exhibits:

Exhibit E	Organizational Conflict of Interest Plan
Exhibit F	IT Security Plan
Exhibit G	Quality Plan

D. All other terms and conditions of this contract remain unchanged as a result of this modification no. 4.

Pages 5 through 74 redacted for the following reasons:

b(4)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 45

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
000005	08/01/2014	4200310923	

6. ISSUED BY CODE LARC

NASA/Langley Research Center
9B Langley Blvd., Bldg. 1195B
M/S 126
Hampton VA 23681-2199

7. ADMINISTERED BY (If other than item 6) CODE

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

SCIENCE SYSTEMS AND APPLICATIONS, INC.
10210 GREENBELT RD STE 600
LANHAM MD 20706-6239

CODE 5S009 FACILITY CODE

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

X 10A. MODIFICATION OF CONTRACT/ORDER NO. NNL11AA00B

10B. DATED (SEE ITEM 13) 12/09/2010

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 _____ copies 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 ACKNOWLEDGEMENT 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)
N/A

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

CHECK ONE	
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	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).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) Mutual Agreement of the Parties

E. IMPORTANT: Contractor ☐ is not, ☒ is required to sign this document and return 1 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:

1. Restructure the contract from an IDIQ contract to a Base Mission Support contract with an IDIQ CLIN
2. Convert the contract type from CPAF to CPFF
3. Incorporate Updated Exhibit documents (Exhibits A-D and J)

In consideration of the modification agreed to herein as a complete equitable adjustment on the negotiated amount agreed upon on August 28, 2014 the Contractor hereby releases the Government from any and all liability under this contract for further equitable adjustments attributable to such facts or circumstances giving rise to the negotiated amount agreed upon for adjustment.

Continued ...

Except as provided herein, all terms and conditions of the document referenced in Item 9 A 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 (Type or print)
Janine Good, Contracts Manager	Teresa M. Hass

15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
Janine Good (Signature of person authorized to sign)	9/17/14	(Signature of Contracting Officer)	9/17/14

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	The contract has been revised as follows:				
002	CPAF Task Orders issued via Task Order automated system. **POP: 02/01/2011 - 07/31/2014** Estimated Costs: $151,876,307.00				
003	CPFF Base Mission Support - Technical Direction Notices issued via automated system. POP: 08/01/2014 - 01/31/2016 Estimated Costs: $66,659,867.00				
004	CPFF Task Orders issued via automated system. POP: 08/01/2014 - 01/31/2016 Estimated Cost: $206,463,826.00				
	Total Estimated Cost: $425,000,000.00				
	Payment Terms: Net 30 days FOB: Destination				

PART I – THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES/PRICES

NAMING/NUMBERING SCHEME FOR CLAUSES IN FULL TEXT AND FOR CLAUSES INCORPORATED BY REFERENCE (LaRC 52.201-90) (MARCH 2012)

There are various types of clauses contained in the contract. Most clauses will reference a numbered cite such as: Federal Acquisition Regulation (FAR 52. #); NASA FAR Supplement (NFS 1852. #); or Langley Research Center (LaRC 52. #). There are also clauses that have no numbered cite designation. Those clauses were written by LaRC for this specific contract or were written as generic Agency clauses specific for this contract type.

B.1 SUPPLIES AND/OR SERVICES TO BE PROVIDED

The Contractor shall provide all resources (except as may be expressly stated in the contract as furnished by the Government) necessary to deliver and/or perform the items below in accordance with the Statement of Work (SOW) for Science, Technology and Research Support Services (STARSS II) (Exhibit A). Work will be obtained by the issuance of cost-plus award fee Task Orders (TOs) for Contract Line Item Number (CLIN) 2, cost-plus fixed fee Technical Direction Notices (TDNs) for CLIN 3, and cost-plus fixed fee TOs for CLIN 4. Also this contract has a line item for Transition/Phase-in which is firm fixed price.

Contract Line Item Number (CLIN)	SOW Section	Type
1	Phase-in/Transition (1 Month)	FFP
2	1.0 thru 7.0 – Indefinite Delivery Indefinite Quantity (IDIQ) (2/1/11 – 7/31/14)	CPAF
3	1.0 thru 5.0 – Base (8/1/14 – 1/31/16)	CPFF
4	1.0 thru 5.0 – IDIQ (8/1/14 – 1/31/16)	CPFF

(End of clause)

B.2 MINIMUM and Maximum Indefinite Delivery, Indefinite Quantity (IDIQ) Contract Value (LaRC 52.216-90) (MAR 2012)

The Government will order through the issuance of Task Orders a minimum quantity of work of $500,000 under this contract. There will be no further obligation on the part of the Government to issue additional Task Orders thereafter. The total maximum contract value is $425,000,000 for all CLINs during the five-year period of performance.

(End of clause)

B.3 ESTIMATED COST AND AWARD FEE (1852.216-85) (SEP 1993)

a. The estimated cost of this contract for CLIN 2 (IDIQ) is b(4) on issued tasks.
The maximum available award fee for CLIN 2 (IDIQ) is b(4) on issued tasks.
Total estimated cost, and maximum award fee for CLIN 2 (IDIQ) is b(4)
The POP date for CLIN 2 (IDIQ) is 2/1/2011 thru 7/31/2014.

(End of clause)

B.4 ESTIMATED COST AND FIXED FEE (1852.216-74) (DEC 1991) (CLINs 3 & 4 Only, Effective 8/1/2014)

a. The estimated cost of this contract for CLIN 3 (Base Mission Support work) is b(4) exclusive of the fixed fee of b(4) Total estimated cost and fixed fee for CLIN 3 is b(4)

b. The estimated cost of this contract for CLIN 4 (IDIQ) is b(4) on issued tasks, exclusive of the fixed fee of b(4) The total estimated cost and fixed fee for CLIN 4 is b(4)

c. The total estimated cost for CLINs 3 thru 4 is b(4) exclusive of the fixed fee of b(4)

(End of clause)

B.5 CONTRACT FUNDING (1852.232-81) (JUN 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 b(4)

CLIN 2 is funded in the amount of b(4) for cost for the following period of performance: contract award through 7/31/2014.

CLIN 3 is funded in the amount of b(4) for cost for the following estimated period of performance: 8/1/2014 through 12/31/2014.

CLIN 4 is funded in the amount of $TBD for cost for the following estimated period of performance: $TBD.

(b) An additional amount of b(4) is obligated under this contract for payment of fee.

CLIN 2 is funded in the amount of b(4) for fee.

CLIN 3 is funded in the amount of b(4) for fee.

CLIN 4 is funded in the amount of $TBD for fee.

(End of clause)

B.6 AWARD FEE AVAILABILITY SCHEDULE (CLIN 2 Only)

(a) The award fee evaluation periods are every 6 months starting with the contract performance start date:

Period	Available Award Fee	Earned Award Fee
1. 2/1/2011 - 7/31/2011	b(4)	b(4)
2. 8/1/2011 - 1/31/2012		
3. 2/1/2012 - 7/31/2012		
4. 8/1/2012 - 1/31/2013		
5. 2/1/2013 – 7/31/2013		
6. 8/1/2013 – 1/31/2014		
7. TBD	$ TBD by Task Orders issued	TBD

(b) The maximum award fee available to the Contractor on each TO will be established by applying a fixed amount of b(4) to the total estimated cost of each TO agreed upon by both parties at the time of issuance.

(c) The award fee available for each evaluation period will be determined based on the TOs projected to be performed during that period. If a TO is projected to be started and completed during a particular evaluation period, then the award fee for that particular TO will be included in the award fee available for that period only. If a TO is started in a particular evaluation period and projected to extend beyond that period, then the award fee for that particular TO will be distributed by the Contracting Officer across the appropriate evaluation period(s). At the end of each evaluation period, the available and actual earned award fee will be specified in the paragraph (a) above by contract modification.

B.7 FIRM FIXED PRICE 1852.216-78 (DECEMBER 1988)

The total firm fixed price of this contract is $0.00 for CLIN 1

(End of clause)

End of Section

SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

C.1 SPECIFICATION/STATEMENT OF WORK

The Contractor shall provide the item or services specified in Section B in accordance with the following:

Exhibit A

End of Section

SECTION D - PACKAGING AND MARKING

D.1 1852.211-70 PACKAGING, HANDLING, AND TRANSPORTATION. (SEP 2005)

Note: Specific Packaging, Handling, and Transportation Instructions will be listed at the Task Order Level or Technical Direction Notice (TDN).

End of Section

SECTION E - INSPECTION AND ACCEPTANCE

E.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION E

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

(End of clause)

CLAUSE NUMBER	CLAUSE TITLE
52.246-5	INSPECTION OF SERVICES – COST REIMBURSEMENT (APR 1984)

E.2 HIGHER-LEVEL CONTRACT QUALITY REQUIREMENT (52.246-11) (Feb 1999)

The Contractor shall comply with the higher-level quality standard selected below.

a. ANSI/ISO/ASQC Q ISO 9001, Quality Management Systems Requirements as indicated per Task Order.

b. The Contractor shall comply with NASA Workmanship Standards for all Software Engineering, development and maintenance activities and comply with NPR 7150.2 NASA Software Engineering Requirements augmented by Langley Management System Center Procedures: Located at http://standards.nasa.gov/documents/nasa;

NASA Standard	TITLE
NASA-STD-8739.8	Software Assurance Standard
NASA-STD-8739.13B	Software Safety Standard

c. To perform individual Task Orders which involve software development and/or maintenance for human-rated software systems, non-human space rated software systems, or mission support software; the Contractor shall be rated at Capability Maturity Model – Integration (CMMI®) for Development Capability Level 2 or higher.

d. AS9100 – See E.3 Applicable AS9100 Terms and Conditions for Quality Sensitive Task Orders

(End of Clause)

E.3 Applicable AS9100 Terms and Conditions for Quality Sensitive Task Orders

a. The contractor shall provide notification to the Government of any nonconforming supplies prior to the delivery of the supplies in accordance with the terms of this contract. The Government has the right either to reject or to require correction of nonconforming supplies. Supplies are nonconforming when they are defective in material or workmanship or are otherwise not in conformity with contract requirements. The Government may reject nonconforming supplies with or without disposition instructions.

b. The contractor shall provide notification to the Government prior to making any changes in its supplies and/or process definitions as specified in the Statement of Work/Task Order Specifications for this contract. If such changes result in a nonconforming supply that is a deliverable under this contract, the requirements of paragraph a., above, shall apply.

c. The Contractor shall prepare records evidencing all inspections made of the deliverables under this contract and the outcome of such inspections. Documentation created or received by all suppliers/contractors in the process of performing work for NASA are considered official NASA records and shall be accounted for, maintained, safeguarded, preserved and disposed of in accordance with NPR 1441.1, NASA Records Retention Schedules. Long-term and permanent records (defined in NPR 1441.1) shall be delivered to NASA for appropriate archival/storage at the end of the contract. Corporate records of a contractor's intercompany operations are considered as private business and are exempt from this requirement. The Government, including any applicable customers to the specific program or project related to work being performed under this agreement, and other regulatory authorities (e.g. FAA), have the right to inspect and test all supplies called for by this contract, to the extent practicable, at all places and times, including the period of manufacture, and in any event before acceptance. The Government will perform inspections and tests in a manner that will not unduly delay the work. The Government assumes no contractual obligation to perform any inspection or test for the benefit of the Contractor unless specifically set forth elsewhere in this contract. The Government may perform inspection or test on the premises of the Contractor or a subcontractor. The Contractor shall furnish, and shall require subcontractors to furnish, at no increase in contract price, all reasonable facilities and assistance for the safe and convenient performance of these duties. Except as otherwise provided for in the contract, the Government shall bear the expense of Government inspections or tests made at other than the Contractor's or subcontractor's premises; provided, that in case of rejection, the Government shall not be liable for any reduction in the value of inspection or test samples.

d. The contractor shall include the applicable requirements including but not limited to, quality inspections, tests and documentation as contained in the Statement of Work (SOW)/Task Order Specifications and the requirements of this clause in all subcontracts.

Definition of a "Quality Sensitive" Task Order - A Task Order that is marked "Critical and complex" and is a requirement as defined in NASA Policy Directive (NPD) 8730.5, NASA Quality Assurance Program Policy, involving the processes and services that support the design, development, fabrication, component assembly, and system installation of flight hardware, flight software, and associated ground support equipment interfacing with flight hardware and flight software. Specifically, **Critical work** is any hardware task that, if performed incorrectly or in violation of prescribed requirements, could result in loss of human life, serious injury, loss of mission, or loss of significant mission resources (e.g., Government test or launch facility). **Complex work** involves either: a) the design, manufacture, fabrication, assembly, testing, integration, maintenance, or repair of machinery, equipment, subsystems, systems, or

platforms; or b) the manufacture/fabrication of parts or assemblies which have quality characteristics not wholly visible in the end item and for which conformance can only be established progressively through precise measurements, tests, and controls applied.

End of Section

SECTION F - DELIVERIES OR PERFORMANCE

F.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION F

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

(End of clause)

CLAUSE NUMBER	CLAUSE TITLE
52.242-15	STOP-WORK ORDER (AUG 1989) ALT I (APR 1984)
52.242-17	GOVERNMENT DELAY OF WORK (APR 1984)

F.2 PERIOD OF PERFORMANCE

(a) The period of performance of this contract (exclusive of the 30 day phase-in) is 60 months from the effective date of the contract.

(b) The period of performance shall be stated in each individual task order or Technical Direction Notice (TDN). Issuance of task orders or TDNs shall not occur beyond the current contract expiration date. Performance of all task orders or TDNs issued before the end of the period of performance shall not exceed 12 months beyond the contract period of performance.

(End of clause)

F.3 PLACE OF PERFORMANCE - SERVICES

The services to be performed under this contract shall be performed at the following location(s): NASA Langley Research Center, Hampton, VA, the Contractor's facility and other sites that may be designated by the Contracting Officer.

(End of clause)

F.4 DELIVERY REQUIREMENTS (LaRC 52.211-96) (MAR 2012)

a) Delivery is required to be made as specified in each TDN for CLIN 3 and in each Task Order for CLIN 4.

b) Delivery shall be f.o.b. destination unless otherwise specified in the TDN and Task Order.

(End of clause)

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION G

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

(End of clause)

CLAUSE NUMBER	CLAUSE TITLE
1852.216-75	PAYMENT OF FIXED FEE (DEC 1988) (CLINs 3 and 4 only)
1852.227-86	COMMERCIAL COMPUTER SOFTWARE--LICENSING (DEC 1987)
1852.242-71	TRAVEL OUTSIDE OF THE UNITED STATES (DEC 1988)
1852.242-73	NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING (NOV 2004)
1852.245-73	FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (JAN 2011)

G.2 AWARD FEE FOR SERVICE CONTRACTS (1852.216-76) (APR 2012) (CLIN 2)

(a) The contractor can earn award fee from a minimum of zero dollars to the maximum stated in NASA FAR Supplement clause 1852.216-85, "Estimated Cost and Award Fee" in this contract.

(b) Beginning 6 months after the effective date of this contract, the Government shall evaluate the Contractor's performance every 6 months to determine the amount of award fee earned by the contractor during the period. The Contractor may submit a self-evaluation of performance for each evaluation period under consideration. These self-evaluations will be considered by the Government in its evaluation. The Government's Fee Determination Official (FDO) will determine the award fee amounts based on the Contractor's performance in accordance with the Award Fee Plan. The plan may be revised unilaterally by the Government prior to the beginning of any rating period to redirect emphasis.

(c) The Government will advise the Contractor in writing of the evaluation results. The Contracting Officer will make payment based on FDO determination.

(d) The Contracting Officer may direct the withholding of earned award fee payments until a reserve is set aside in an amount that the Contracting Officer considers necessary to protect the Government's interest relative to an orderly and timely closeout of the contract. This reserve

shall not exceed 15 percent of the contract's total potential award fee or $100,000, whichever is less.

(e) The amount of award fee which can be awarded in each evaluation period is limited to the amounts set forth at **B.6**. Award fee which is not earned in an evaluation period cannot be reallocated to future evaluation periods.

(f) (1) Provisional award fee payments will be made under this contract pending the determination of the amount of fee earned for an evaluation period. If applicable, provisional award fee payments will be made to the Contractor on a **monthly** basis. The total amount of award fee available in an evaluation period that will be provisionally paid is the lesser of 80 percent or the prior period's evaluation score.

(2) Provisional award fee payments will be superseded by the final award fee evaluation for that period. If provisional payments exceed the final evaluation score, the Contractor will either credit the next payment voucher for the amount of such overpayment or refund the difference to the Government, as directed by the Contracting Officer.

(3) If the Contracting Officer determines that the Contractor will not achieve a level of performance commensurate with the provisional rate, payment of provisional award fee will be discontinued or reduced in such amounts as the Contracting Officer deems appropriate. The Contracting Officer will notify the Contractor in writing if it is determined that such discontinuance or reduction is appropriate.

(4) Provisional award fee payments will be made prior to the first award fee determination by the Government.

(g) Award fee determinations are unilateral decisions made solely at the discretion of the Government.

(End of clause)

G.3 SUBMISSION OF VOUCHERS FOR PAYMENT (1852.216-87) (LARC APR 2014)

(a) Except for classified vouchers, the Contractor shall submit interim and final cost vouchers electronically using the DOD Wide Area Work Flow (WAWF) system. Vouchers will be reviewed by DCAA based upon a risk-based sampling review process.

(1) To access the DOD WAWF system, the contractor shall be required to have a designated electronic business point of contact in the System for Award Management at https://www.acquisition.gov and be registered to use the DOD WAWF at https://wawf.eb.mil following the step-by-step procedures for self-registration available at this web site.

(2) NASA voucher payment information can be obtained at the NASA Shared Services Center (NSSC) Vendor Payment information web site at: https://www.nssc.nasa.gov/vendorpayment. For technical WAWF help, contact the WAWF helpdesk at 1-866-618-5988. Please contact the NSSC Customer Contact Center at 1-877-NSSC123 (1-877-677-2123) with any additional questions or comments.

(3) The vendor shall use the "Cost Voucher" document type in WAWF. The Activity Address Codes (ACC) to be populated in WAWF for submission of vouchers under this contract are:

a. Pay Official ACC: 803112 (NSSC)
b. Admin DoDACC: 803364 (LaRC)
c. DCAA Auditor DoD ACC: HAA819 (SSAI)
d. For "Final Cost Voucher", add Service Approver DODAAC: 803364 (LaRC)

(4) The Contractor shall ensure that the payment request includes appropriate contract line item descriptions of the work performed and all relevant back-up documentation to support each payment request.

(5) The Contractor shall enter the e-mail address identified below in the "Send Additional Email Notifications" field of WAWF once a document is submitted in the system:

E-mail address: Tameka.Woodley@nasa.gov

(b) Vouchers for payment of fee resulting from contract performance or provisional fee (if authorized under this contract) shall be prepared using an SF 1034 and submitted electronically to the following address for payment:

E-mail address: NSSC-AccountsPayable@nasa.gov
Mailing address: NSSC - FMD Accounts Payable
Bldg. 1111, C Road
Stennis Space Center, MS 3952
Fax Number: 1-866-209-5415

(c) For both cost voucher and fee submissions, a concurrent copy of the voucher shall be provided electronically to the NASA Contracting Officer. The Contracting Officer may designate other recipients as required.

(d) The NSSC is the designated billing office for cost and fee vouchers for purpose 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)

G.4 TECHNICAL DIRECTION (1852.242-70) (SEP 1993)

(a) Performance of the work under this contract is subject to the written technical direction of the Contracting Officer's Representative (COR), 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 COR 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 COR.

(d) The Contractor shall proceed promptly with the performance of technical direction duly issued by the COR in the manner prescribed by this clause and within the COR's authority. If, in the Contractor's opinion, any instruction or direction by the COR 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 COR shall be at the Contractor's risk.

(End of clause)

G.6 TECHNICAL DIRECTION NOTICES (TDNs)

In accordance with clause G.5, NFS clause 1852.242-70, the COR will provide technical direction through issuance of TDNs. TDNs will define details including, but not limited to

schedules, funding, drawings, processes and procedures. As part of the TDN process, the Contractor shall provide initial rough order of magnitude estimates (ROMs) for required resources. These estimates are necessary to ensure appropriate funding among multiple users of the Base Support and Task Order requirements. In no case shall the Contractor proceed with a TDN that changes the overall scope or exceeds the CLIN value or Task Order value without approval of the Contracting Officer and a modification to the contract or Task Order.

G.7 CONTRACTOR REQUESTS FOR GOVERNMENT-PROVIDED PROPERTY (1852.245-70) (JAN 2011)

(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. Property approved as part of the contract award or specifically required within the statement of work 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 FAR 52.245–1, Government Property, as incorporated in this contract.

(End of Clause)

G.8 INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (1852.245-71) (JAN 2011)

(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 (NPR) 4100.1, NASA Materials Inventory Management Manual;

NASA Procedural Requirements (NPR) 4200.1, NASA Equipment Management Procedural Requirements;

NASA Procedural Requirement (NPR) 4300.1, NASA Personal Property Disposal Procedural Requirements;

The Contractor shall ensure all Installation Accountable Government Property is reassigned before the current Contractor equipment user resigns or is terminated.

Property not recorded in NASA property systems must be managed in accordance with the requirements of the clause at FAR 52.245–1, as incorporated in this contract.

The Contractor shall establish and adhere to a system of written procedures to assure continued, effective management control and compliance with these user responsibilities. In accordance with FAR 52.245-1(h)(1) the contractor shall be liable for property lost, damaged, destroyed or stolen by the contractor or their employees when determined responsible by a NASA Property Survey Board, in accordance with the NASA guidance in this clause.

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

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

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

(iii) The Contractor shall establish a record for Government titled property as required by FAR 52.245-1, as incorporated in this contract, and shall maintain that record until accountability is accepted by the Government.

(iv) Contractor use of Government property at an off-site location and off-site subcontractor use requires 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 (as incorporated in this contract), until its return to the installation. NASA Procedural Requirements related to property loans shall not apply to offsite use of property by contractors.

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

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

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

(2) Office furniture.

(3) Property listed in N/A.

(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: [Insert the name of the facilities or "none"].

(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.9 IDENTIFICATION AND MARKING OF GOVERNMENT EQUIPMENT (1852.245-74) (JAN 2011)

(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 or through the use of commercial marking techniques that: (1) are sufficiently durable to remain intact through the typical lifespan of the property: and, (2) contain the data and data format required by the standards. This requirement includes deliverable equipment listed in the schedule and other equipment when no longer required for contract performance and 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) Equipment shall be marked in a location that will be human readable, without disassembly or movement of the equipment, 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 equipment no longer needed for contract performance and physically transferred under paragraph (a) of this clause, the following additional data is required:

(1) Date originally placed in service.

(2) Item condition.

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

NASA Langley Research Center
4 South Marvin Street (Bldg. 1206)
Hampton, VA 23681-2199

(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.10 LIST OF GOVERNMENT PROPERTY FURNISHED. (1852.245-76) (JAN 2011)

For performance of work under this contract, the Government will make available Government property identified in Exhibit C of this contract on a no charge-for-use basis pursuant to the clause at FAR 52.245–1, Government Property, as incorporated in this contract. The Contractor shall use this property in the performance of this contract at One Enterprise Parkway, Suite 200, Hampton, VA 23666 and at other location(s) as may be approved by the Contracting Officer. Under FAR 52.245–1, the Contractor is accountable for the identified property.

(End of clause)

G.11 PHYSICAL INVENTORY OF CAPITAL PERSONAL PROPERTY. (1852.245-78) (JAN 2011)

(a) In addition to physical inventory requirements under the clause at FAR 52.245–1, Government Property, as incorporated in this contract, the Contractor shall conduct annual physical inventories for individual property items with an acquisition cost exceeding $100,000.

(1) The Contractor shall inventory—

(i) Items of property furnished by the Government;

(ii) Items acquired by the Contractor and titled to the Government under the clause at FAR 52.245–1;

(iii) Items constructed by the Contractor and not included in the deliverable, but titled to the Government under the clause at FAR 52.245–1; and

(iv) Complete but undelivered deliverables.

(2) The Contractor shall use the physical inventory results to validate the property record data, specifically location and use status, and to prepare summary reports of inventory as described in paragraph (c) of this clause.

(b) Unless specifically authorized in writing by the Property Administrator, the inventory shall be performed and posted by individuals other than those assigned custody of the items, responsibility for maintenance, or responsibility for posting to the property record. The Contractor may request a waiver from this separation of duties requirement from the Property Administrator, when all of the conditions in either (1) or (2) of this paragraph are met.

(1) The Contractor utilizes an electronic system for property identification, such as a laser bar-code reader or radio frequency identification reader, and

(i) The programs or software preclude manual data entry of inventory identification data by the individual performing the inventory; and

(ii) The inventory and property management systems contain sufficient management controls to prevent tampering and assure proper posting of collected inventory data.

(2) The Contractor has limited quantities of property, limited personnel, or limited property systems; and the Contractor provides written confirmation that the Government property exists in the recorded condition and location;

(3) The Contractor shall submit the request to the cognizant property administrator and obtain approval from the property administrator prior to implementation of the practice.

(c) The Contractor shall report the results of the physical inventory to the property administrator within 10 calendar days of completion of the physical inventory. The report shall—

(1) Provide a summary showing number and value of items inventoried; and

(2) Include additional supporting reports of—

(i) Loss in accordance with the clause at 52.245–1, Government Property;

(ii) Idle property available for reuse or disposition; and

(iii) A summary of adjustments made to location, condition, status, or user as a result of the physical inventory reconciliation.

(d) The Contractor shall retain auditable physical inventory records, including records supporting transactions associated with inventory reconciliation. All records shall be subject to Government review and/or audit.

(End of clause)

G.12 PROPERTY MANAGEMENT CHANGES (1852.245-75) (JAN 2011)

(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 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.

(End of clause)

G.13 OCCUPANCY MANAGEMENT REQUIREMENTS (1852.245-82) (JAN 2011)

(a) In addition to the requirements of the clause at FAR 52.245–1, Government Property, as included in this contract, the Contractor shall comply with the following in performance of work in and around Government real property:

(1) NPD 8800.14, Policy for Real Property Management.

(2) NPR 8831.2, Facility Maintenance Management

[Insert any additional Center occupancy requirements here]

(b) The Contractor shall obtain the written approval of the Contracting Officer before installing or removing Contractor-owned property onto or into any Government real property or when movement of Contractor-owned property may damage or destroy Government-owned property. The Contractor shall restore damaged property to its original condition at the Contractor's expense.

(c) The Contractor shall not acquire, construct or install any fixed improvement or structural alterations in Government buildings or other real property without the advance, written approval of the Contracting Officer. Fixed improvement or structural alterations, as used herein, means any alteration or improvement in the nature of the building or other real property that, after completion, cannot be removed without substantial loss of value or damage to the premises. Title to such property shall vest in the Government.

(d) The Contractor shall report any real property or any portion thereof when it is no longer required for performance under the contract, as directed by the Contracting Officer.

(End of clause)

G.14 DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (NASA 1852.227-72) (JUL 1997)

(a) For purposes of administration of the clause of this contract entitled "New Technology" or "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	**Address (including zip code)**
New Technology Representative	Michelle Dail (LAMPS Employee) Mail Stop 218, NASA Langley Research Center Hampton, VA 23681-2199
Patent Representative	Office of Chief Counsel 5 Langley Boulevard Mail Stop 30 NASA Langley Research Center Hampton, VA 23681-2199

(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. Inquires 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)

End of Section

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 CLAUSES INCORPORATED BY REFERENCE -- SECTION H

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

(End of clause)

CLAUSE NUMBER	CLAUSE TITLE
1852.208-81	RESTRICTIONS ON PRINTING AND DUPLICATING (NOV 2004)
1852.223-70	SAFETY AND HEALTH (APR 2002)
1852.223-75	MAJOR BREACH OF SAFETY OR SECURITY (FEB 2002)
1852.225-70	EXPORT LICENSES (FEB 2000) Fill In: (b) NASA Langley Research Center ALT I (FEB 2000)
1852.235-73	FINAL SCIENTIFIC AND TECHNICAL REPORTS (DEC 2006)
1852.244-70	GEOGRAPHIC PARTICIPATION IN THE AEROSPACE PROGRAM (APRIL 1985)

H.2 TASK ORDERING PROCEDURE (1852.216-80) (OCT 1996) (Applicable to CLINs 2 & 4)

(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 5 business days after receipt of the Contracting Officer's request, the Contractor shall submit a task plan conforming to the request.

(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 1 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 ORDER LIMITATIONS. (52.216-19) (OCT 1995)

(a) *Minimum order.* When the Government requires supplies or services covered by this contract in an amount of less than $100, the Government is not obligated to purchase, nor is the Contractor obligated to furnish, those supplies or services under the contract.

(b) *Maximum order.* The Contractor is not obligated to honor -

(1) Any order for a single item in excess of $100,000,000;

(2) Any order for a combination of items in excess of $100,000,000; or

(3) A series of orders from the same ordering office within 10 days that together call for quantities exceeding the limitation in subparagraph (b)(1) or (2) of this section.

(c) If this is a requirements contract (*i.e.*, includes the Requirements clause at subsection 52.216-21 of the Federal Acquisition Regulation (FAR)), the Government is not required to order a part of any one requirement from the Contractor if that requirement exceeds the maximum-order limitations in paragraph (b) of this section.

(d) Notwithstanding paragraphs (b) and (c) of this section, the Contractor shall honor any order exceeding the maximum order limitations in paragraph (b), unless that order (or orders) is returned to the ordering office within 5 days after issuance, with written notice stating the Contractor's intent not to ship the item (or items) called for and the reasons. Upon receiving this notice, the Government may acquire the supplies or services from another source.

(End of clause)

H.4 TASK ORDERING MANAGEMENT SYSTEM

The Contractor shall provide administration and access to a Task Ordering Management System (TOMS) to facilitate the task ordering process and management of task ordering. The TOMS shall be a secure web based system capable of tracking and storing the ordering process of tasks from initiation to completion. As a minimum the following data fields are required: start, stop and completion dates of task orders, total hours, total cost, total fee (if applicable), Work Breakdown Structure number (WBS), NASA Work Order number, job Tracking Number, customer contact information, and a completed task quality standard metric (if applicable) with customer-feedback and comment input field. In addition the system shall have a "dash board" displaying the number of orders: active, completed, initiated, and awaiting action. The system shall be able to produce reports on various data fields and be exported into Microsoft Excel to include NF 533 and Work Year Equivalents (WYE's) Reports. The system shall be able to retain document attachments in various files types (e.g. Microsoft Office files, Acrobat Reader files, AutoCAD files). The system shall have user password and security to ensure only authorized users have access. The system shall have user interface help resources and training/user documents. All data in the system shall be protected as Government source data and all data rights are retained by the Government.

(End of Clause)

H.5 OBSERVANCE OF LEGAL HOLIDAYS (1852.242-72) (AUG 1992)

(a) The on-site Government personnel observe the following holidays:
New Year's Day
Martin Luther King, Jr.'s Birthday
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veterans Day
Thanksgiving Day
Christmas Day

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

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

ALTERNATE I (SEP 1989)
As prescribed in 1842.7001(b), add the following paragraphs (c) and (d) as Alternate I to the clause.
(c) On-site personnel assigned to this contract shall not be granted access to the installation during the holidays in paragraph (a) of the clause, except as follows: the Contractor shall provide sufficient on-site personnel to perform round-the-clock requirements of critical work already in process, unless otherwise instructed by the Contracting Officer or authorized representative. If the Contractor's on-site personnel work during a holiday other than those in paragraph (a) of this clause, no form of holiday or other premium compensation shall be reimbursed as either a direct or indirect cost. However, this does not preclude reimbursement for authorized overtime work that would have been overtime regardless of the status of the day as a holiday.
(d) The Contractor shall place identical requirements, including this paragraph, in all subcontracts that require performance of work on-site, unless otherwise instructed by the Contracting Officer.

ALTERNATE II (OCT 2000)
As prescribed in 1842.7001(c), add the following as paragraphs (e) and (f) if Alternate I is used, or as paragraphs (c) and (d) if Alternate I is not used. If added as paragraphs (c) and (d), amend the first sentence of paragraph (d) by deleting "(e)" and adding "(c)" in its place.
(e) When the NASA installation grants administrative leave to its Government employees (e.g., as a result of inclement weather, potentially hazardous conditions, or other special circumstances), Contractor personnel working on-site should also be dismissed. However, the contractor shall provide sufficient on-site personnel to perform round-the-clock requirements of critical work already in process, unless otherwise instructed by the Contracting Officer or authorized representative.
(f) Whenever administrative leave is granted to Contractor personnel pursuant to paragraph (e) of this clause, it shall be without loss to the Contractor. The cost of salaries and wages to the Contractor for the period of any such excused absence shall be a reimbursable item of cost under this contract for employees in accordance with the Contractor's established accounting policy.
(End of clause)

H.6 REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFEROR

The completed provision 52.204-8, Annual Representations and Certifications, including any amended representation(s) made at paragraph (b) of the provision; and other representations, certifications and other statements contained in Section K completed and submitted as part of the offer dated July, 12, 2010 are hereby incorporated by reference in this resulting contract.

(End of Clause)

H.7 SECURITY PROGRAM/FOREIGN NATIONAL EMPLOYEE ACCESS REQUIREMENTS (LARC 52.204-91) (APR 2014)

1) Applicable Definitions:

Foreign National: Any person who is not a U.S. citizen and who is not a lawful permanent resident as defined by 8 U.S.C. 1101(a) (20) or any person who is not a protected individual as

defined by 8 U.S.C. 1324b(a) (3). This also means any foreign corporation, business association, partnership, trust, society or any other entity or group that is not incorporated or organized to do business in the U.S., as well as any international organizations, any foreign government, and any agency or subdivision of foreign governments (e.g., diplomatic missions).
Lawful Permanent Resident (LPR): A non-U.S. citizen legally permitted to reside and work within the U.S. and issued a Resident Alien Identification (also known as a Green Card). LPRs are to be afforded all the rights and privileges of a U.S. citizen with the exception of voting, holding public office, access to classified national security information, and employment in the federal sector (except for specific needs or under temporary appointment per 5 CFR, Part 7, Section 7.4). LPRs are not prohibited from accessing export controlled commodities, but must have a work-related "need-to-know" for access. LPRs are considered foreign nationals under immigration laws. LPR, as defined herein, is to replace the term "Permanent Resident Alien" (PRA) in all NASA guidance that has not yet been updated to the use of LPR.

2) Requirements for Center Access for Foreign Nationals who are not LPRs:

   Access to the NASA Langley Research Center by foreign nationals who are not LPRs shall be approved in accordance with NPR 1600.4, "Identity and Credential Management" and Interim Policy Regarding Foreign National Access Management, dated April 2, 2014. Center access approval requires a minimum of 5 (five) working days advance notice. Designated country nationals require a minimum of 30 (thirty) working days advance notice because of additional approval requirements. Foreign nationals who are not LPRs must be escorted by a NASA Civil Servant or permanently badged contractor at all times while on Center unless otherwise approved in writing by the International Visitors Coordinator (IVC).

3) Requirements for Center Access for LPRs:

   a) Visit requests should be submitted directly to the Badge and Pass Office (BPO) using an LF-103. LPRs may be sponsored for Center access by permanently badged contractor employees or NASA civil servants. Contractor LPRs are generally expected to be sponsored by the employing contractor.
   b) LPRs who will be at LaRC in excess of 29 days will be processed through IdMAX.
   c) LPRs who will be at LaRC in excess of 179 days will be processed for PIV credentials that will remain valid for 5 years.
   d) Contractor management is responsible for ensuring credentials issued to LPRs sponsored by the contractor are returned when the LPR no longer requires access to NASA LaRC under the contract or no longer works for the contractor.
   e) No Security Transfer Technology Control Plan (STTCP) is required for LPRs.
   f) LPRs on a work related, "need-to-know" basis are allowed access to export controlled commodities. It is incumbent on the Branch Head or Program Manager to appropriately determine who should have access to export controlled information. The Security Services Branch and the Center Export Administrator are available for guidance.
   g) LPRs are permitted to carry personal mobile devices on Center. Personal mobile devices are not be used to record, store, or process NASA data and are not to be used to take photographs within NASA facilities.

h) LPRs and non-LPR Foreign Nationals must request and obtain prior approval from Joint Base Langley-Eustis prior to entering Joint Base Langley-Eustis. Access is subject to conditions imposed by Joint Base Langley-Eustis and may require a U.S. citizen escort at all times.

4) Violation of security policies by contractor personnel may result in withdrawal of Center access for the offending personnel and/or contractual actions against the contractor. Additionally, violations may be criminal in nature and are subject to criminal prosecution.

(End of clause)

H.8 SPECIAL REQUIREMENTS FOR SERVICE CONTRACTS (LaRC 52.211-99) (APR 2007)

(a) Inherently Governmental Functions - No inherently government functions as defined in FAR 2.101 and FAR 7.5 shall be performed by the contractor under this NASA LaRC contract. Contractor employees shall not participate in any deliberations or meetings intended to exercise an inherently governmental function. All final determinations such as binding the United States to take or not to take some action, selecting program priorities, and providing direction to Federal employees shall be made by the government. The contractor shall immediately notify the Contracting Officer's Representative (COR) and the Contracting Officer if performance of an activity would result in the performance of an inherently governmental function.

(b) Non-Personal Services Contract - In accordance with FAR 37.101, this contract is a non-personal services contract in that the contractor personnel rendering the services shall not be subject, either by the contract's terms or by the manner of its administration, to the continuous supervision and control of a Government officer or employee. The contractor shall immediately notify the COR and the Contracting Officer if, through contract administration, the actions of a government employee will result in the performance of a personal services contract.

(c) Identification of Contractor Personnel - All contractor personnel who attend meetings, answer government telephones, use a nasa.gov e-mail address, or work in situations where their actions could be construed as acts of Government officials shall clearly identify themselves as contractor personnel. Contractor employees shall never identify themselves as representing NASA but rather shall identify themselves as being under contract to NASA. Additionally, all contractor work spaces located on NASA LaRC shall be clearly identified.

(d) Marking of Reports - The contractor shall mark all documents or reports produced under this contract with the contractor name, contract number, and task order number if applicable.

H.9 OBSERVATION OF REGULATIONS AND IDENTIFICATION OF CONTRACTOR'S EMPLOYEES (LARC 52.211-104) (JAN 2013)

(a) Observation of Regulations--In performance of that part of the contract work which may be performed at Langley Research Center (LaRC) or other Government installation, the Contractor shall require its employees to observe the rules and regulations as prescribed by the authorities at LaRC or other installation including all applicable Federal, NASA and Langley safety, health, environmental and security regulations.

(b) Identification Credentials--At all times while on LaRC property, the Contractor shall require its employees, subcontractors and agents to wear credentials issued by NASA LaRC. Contractors will be held accountable for these credentials, and may be required to validate its active employees on an annual basis with the NASA LaRC Security Office. Immediately upon employee termination or contract completion, badges shall be returned to the NASA LaRC Badge and Pass Office. It is agreed and understood that all NASA identification badges remain the property of NASA and the Government reserves the right to invalidate such badges at any time.

(c) Employee Out-Processing--The Contractor shall ensure that all employees who are terminated or no longer connected with work being performed under this contract are out processed through the LaRC Badge and Pass Office. Badges and keys must be accounted for and returned.

(End of clause)

H.10 ENABLING CLAUSE BETWEEN SCIENCE, TECHNOLOGY, AND RESEARCH SUPPORT SERVICES II (STARSS II) CONTRACTOR AND THE CENTER, MAINTENANCE, OPERATIONS AND ENGINEERING (CMOE) CONTRACTOR (LaRC 52.215-116) (MARCH 2012)

a) NASA has entered into a contract with Center, Maintenance, Operations, and Engineering (CMOE) for maintenance, operations, and engineering services.

b) In the performance of this contract, the STARSS II contractor agrees to cooperate with the CMOE contractor by: responding to invitations from authorized personnel to attend meetings; providing access to technical information and research, development and planning data, test data and results, schedule and milestone data; discussing technical matters related to the project; providing access to Contractor facilities utilized in the performance of this contract; and allowing observation of technical activities by appropriate support Contractor technical personnel.

c) The Contractor shall flow down this clause in all subcontracts over $1 million or 10 percent of prime contract value, whichever is less.

H.11 OBSERVATION OF SAFETY AWARENESS EVENT BY CONTRACTOR EMPLOYEES (LARC 52.223-92) (JAN 2013)

The Langley Research Center (LaRC) Safety Awareness Event is an annual event dedicated to learning best practices for a safe work environment. When the LaRC Director designates the Safety Awareness Event, the Contractor shall require all onsite and near site employees to participate in Safety Awareness activities at LaRC.

(End of clause)

H.12 ORGANIZATIONAL CONFLICTS OF INTEREST (LaRC 52.227-96) (JUNE 2012)

a) For purposes of this clause, the term "Contractor" shall include the prime contracting entity's parent, subsidiaries, divisions, and all affiliated companies that are under common control with such entity. In addition, the prime Contractor shall flow down this clause to all subcontractors.

b) Pursuant to FAR 9.504, the Contracting Officer is responsible for identifying and evaluating potential Organizational Conflicts of Interest (OCI) early in the acquisition process and either avoiding, neutralizing, or mitigating such conflicts before contract award and Task Order Awards.

c) During the performance of this contract, the Contractor may encounter Organizational Conflicts of Interest addressed in FAR 9.5. More specifically, the Contracting Officer has determined and identified the following potential conflicts that the Contractor may encounter during performance of this contract.

Unequal Access to Information – The contractor will have access to sensitive information
Biased Ground Rules - It is highly likely that the contractor will be requested to assist the Government in developing specifications or studies that could be the basis for a future competition.
Impaired Objectivity - The likelihood of this type of OCI is moderate. The contractor may assist the Government in technical evaluation (subjective judgment) of information received from potential bidders, but does not itself have any stake in the bids as either a prime or subcontractor. The probability of conflict arises from assessment of technical approaches by a competitive rival, by a company with whom the contractor has other independent business, or during reviews of proposals such as those received under NRA's.

d) Contractor's Response to Proposed Task Orders: Within two working days of receipt of a Task Order causing a conflict to arise, the Contractor shall notify the Contracting Officer and provide a report of a potential conflict detailing:

1. The nature of the conflict

2. Plan for avoiding, neutralizing or mitigating the conflict

3. The benefits and risks associated with acceptance of the plan

e) Government Response to a Report of a Potential Conflict: The Contracting Officer will review the report and determine which of the following approaches is in the best interest of the Government and shall so advise the Contractor:

1.The Contractor shall perform consistent with the Task Order
2.The Contractor shall not perform the Task Order
3.The Government will modify the Task Order to remove the identified conflict

f) Additional requirements: Any limitations on future contracting resulting from the Contractor's or its Subcontractor's performance of the contract requirements are identified in Section H.13, NFS 1852.209-71, Limitation of Future Contracting.

H.13 LIMITATION OF FUTURE CONTRACTING (1852.209-71) (DEC 1988)

(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 invited to FAR

Subpart 9.5--Organizational Conflicts of Interest.

(b) The nature of the conflicts are described in **H.12**

(c) The restrictions upon future contracting are as follows:

(1) If the Contractor, under the terms of this contract, or through the performance of tasks pursuant to this contract, is required to provide acquisition systems development, specifications, statement of work or related materials that will lead directly, predictably and without delay to a statement of work for a Government competitive solicitation, the Contractor shall be ineligible to perform the work described in that solicitation as a prime or first-tier subcontractor under an ensuing 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 materials, specifications or statements of work under this contract.

(2) To the extent that the work under this contract requires access to proprietary, business confidential, or financial data of other companies, and/or Government sensitive, non-public information, and as long as these data remain proprietary, confidential or non-public as applicable, the Contractor shall protect these data from unauthorized use and disclosure and agrees not to use them to compete in future procurements.

(End of clause)

H.14 VIRGINIA AND LOCAL SALES TAXES (LARC 52.229-92) (MARCH 2012)

To perform this contract, the Contractor must be knowledgeable of relevant state and local taxes when making purchases of tangible personal property. The Contractor shall refrain from paying inapplicable taxes or taxes where an exemption exists, but shall pay applicable taxes that are allowable pursuant to FAR 31.205-41, Taxes. Even though title to property purchased under this contract may pass to the Government and the price is reimbursable under contract cost principles, such transactions do not in themselves provide tax immunity to the Contractor. Therefore, within 30 days after the effective date of this contract, the Contractor shall request from the Virginia State Tax Commission a ruling on any tax exemptions that may be applicable to purchases made under this contract. The Contractor shall provide all facts relevant to the situation and shall pursue an interpretation of the law that is most favorable to both the Contractor and the Government.

H.15 ISO 9001: CERTIFICATION/REGISTRATION REQUIREMENTS QUALITY MANAGEMENT SYSTEM (CONTRACTOR IS CERTIFIED AT CONTRACT AWARD (LaRC 52.246-99) (MARCH 2012)

a) The Contractor's quality system shall be certified/registered to the current International Standard ISO 9001, Quality Management Systems Requirements, at contract award.

b) The Contractor's quality system shall remain certified/registered to the ISO 9001 standard during the term of the contract. The Contractor shall notify the Contracting Officer within ten working days of any change in its ISO 9001 certification/registration status. The Contractor shall submit a copy of any updated ISO 9001 certificates to the Contracting Officer during the life of the contract. The Government reserves the right to audit the Contractor's quality system at any time.

c) "Certified/Registered" as used in this clause means that the Contractor has defined, documented, and will continually implement during the term of the contract management-approved methods of operation that have been audited by a 3rd party ISO 9001 Registrar and found to meet the requirements given in the above-cited International Standard.

H.16 CAPABILITY MATURITY MODEL INTEGRATION (CMMI) REQUIREMENTS (LaRC 52.246-104) (MARCH 2012)

a) The Contractor (including subcontractors) that will be performing software engineering shall have a non-expired rating at CMMI for Development (CMMI-DEV) Maturity Level 3 or higher as measured by a Software Engineering Institute (SEI) authorized lead appraiser from an external organization.

b) The Contractor shall successfully complete a Standard CMMI Appraisal Method for Process Improvement (SCAMPI A) appraisal at Maturity Level 3 or higher against the CMMI-DEV model and submit the appraisal results certifying a Maturity Level 3 rating for review and acceptance by the Contracting Officer within 9 months of contract effective date.

c) The Contractor shall maintain or upgrade its CMMI rating for the term of the contract and shall perform software engineering in accordance with the appraised process areas.

d) The Government reserves the right to audit the Contractor's CMMI processes at any time.

H.17 GOVERNMENT FURNISHED INFORMATION TECHNOLOGY (IT) SERVICES (LaRC 52.245-97) (June 2012)

NASA Langley Research Center will furnish all necessary computers and related information technology services that will be connected to the NASA network infrastructure for all on-site contractors. The Agency enterprise service provider will manage the information technology services. The Contractor shall not connect any hardware to the NASA network infrastructure without the permission of Langley Research Center Chief Information Officer (CIO).

For off-site contractors, NASA Langley Research Center will provide the access to appropriate NASA information and information systems via a client-based virtual private network (VPN) where necessary. The VPN system shall be operated and maintained by the Agency enterprise service provider with local oversight provided by the Langley Research Center CIO. Individual system and user access will be dependent upon compliance with NASA policies. Dedicated, site-to-site network connections from the contractor's off-site location to the NASA Langley Research Center network will not be allowed.

(End of clause)

H.19 REPORTING OF INCIDENTS INVOLVING WORKPLACE VIOLENCE (LaRC 52.223-93) (NOV 2013)

The contractor and its employees shall comply with LAPD 1600.5, Workplace Violence and Threatening Behavior. The contractor shall conduct training on and develop procedures for recognizing, managing and responding to incidents and threats of workplace violence as defined in LAPD 1600.5.

In accordance with LAPD 1600.5, if the LaRC Workplace Violence and Prevention Program (WVPP) Threat Assessment Team determines it is appropriate for the contractor to participate in a WVPP Threat Assessment Team meeting, the contractor shall comply with the request. The contractor shall report the disposition of any incidents to the LaRC WVPP Threat Assessment Team.

This requirement shall flow down to the subcontractors, however the subcontractors shall report up through the prime contractor.

End of Section

SECTION I - CONTRACT CLAUSES

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

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

NASA FAR Supplement (NFS) clauses:
http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm

(End of clause)

CLAUSE NUMBER	CLAUSE TITLE
52.202-1	DEFINITIONS (NOV 2013)
52.203-3	GRATUITIES (APR 1984)
52.203-5	COVENANT AGAINST CONTINGENT FEES (MAY 2014)
52.203-6	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT (SEP 2006)
52.203-7	ANTI-KICKBACK PROCEDURES (MAY 2014)
52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY (MAY 2014)
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY (MAY 2014)
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (OCT 2010)
52.203-13	CONTRACTOR CODE OF BUSINESS ETHICS AND CONDUCT (APR 2010)
52.203-14	DISPLAY OF HOTLINE POSTER(S) (DEC 2007) Fill In: NASA LaRC Office of Inspector General; (757) 864-3262
52.203-16	PREVENTING PERSONAL CONFLICTS OF INTEREST (DEC 2011)
52.204-4	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (MAY 2011)
52.204-7	CENTRAL CONTRACTOR REGISTRATION (JUL 2013)
52.204-9	PERSONAL IDENTITY VERIFICATION OF CONTRACTOR PERSONNEL (JAN 2011)
52.204-10*	REPORTING EXECUTIVE COMPENSATION AND FIRST-TIER SUBCONTRACT AWARDS (JULY 2013)
52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT (AUG 2013)
52.215-2	AUDIT AND RECORDS - NEGOTIATION (OCT 2010)
52.215-8	ORDER OF PRECEDENCE - UNIFORM CONTRACT FORMAT (OCT 1997)
52.215-13	SUBCONTRACTOR COST OR PRICING DATA – MODIFICATIONS (OCT 2010)
52.215-11	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA -- MODIFICATIONS (AUG 2011)
52.215-15	PENSION ADJUSTMENTS AND ASSET REVERSIONS (OCT 2010)

CLAUSE NUMBER	CLAUSE TITLE
52.215-16	FACILITIES CAPITAL COST OF MONEY (JUN 2003)
52.215-17	WAIVER OF FACILITIES CAPITAL COST OF MONEY (OCT 1997)
52.215-18	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS (JUL 2005)
52.215-21	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA - MODIFICATIONS (OCT 2010)
52.215-23	LIMITATIONS ON PASS-THROUGH CHARGES (OCT 2009)
52.216-7	ALLOWABLE COST AND PAYMENT (JUN 2013) Fill in: (3) The designated payment office will make interim payments for contract financing on the 30th day after the designated office receives a proper payment request.
52.216-8	FIXED FEE (JAN 2011) (CLINs 3 and 4)
52.216-18	ORDERING (OCT 1995) (IDIQ only) Fill in: (a) contract effective date through the end of the contract period of performance.
52.216-22	INDEFINITE QUANTITY (OCT 1995) (IDIQ only) Fill in: (d) 12 months after the completion of the contract.
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS (MAY 2014)
52.219-14	LIMITATIONS ON SUBCONTRACTING (NOV 2011)
52.219-28	POST-AWARD SMALL BUSINESS PROGRAM REPRESENTATION (JUL 2013)
52.222-1	NOTICE TO THE GOVERNMENT OF LABOR DISPUTES (FEB 1997)
52.222-2	PAYMENT FOR OVERTIME PREMIUMS (JUL 1990) Fill in: (a) "zero"
52.222-3	CONVICT LABOR (JUN 2003)
52.222-21	PROHIBITION OF SEGREGATED FACILITIES (FEB 1999)
52.222-26	EQUAL OPPORTUNITY (MAR 2007)
52.222-35	EQUAL OPPORTUNITY FOR VETERANS, (JUL 2014)
52.222-36	EQUAL OPPORTUNITY FOR WORKERS WITH DISABILITIES (JUL 2014)
52.222-37	EMPLOYMENT REPORTS FOR VETERANS (JUL 2014)
52.222-50	COMBATING TRAFFICKING IN PERSONS (FEB 2009)
52.223-2	AFFIRMATIVE PROCUREMENT OF BIO BASED PRODUCTS UNDER SERVICE AND CONSTRUCTION CONTRACTS (SEP 2013)
52.223-3	HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA (JAN 1997) - ALTERNATE I (JUL 1995)
52.223-5	POLLUTION PREVENTION AND RIGHT-TO-KNOW INFORMATION (MAY 2011)
52.223-6	DRUG-FREE WORKPLACE (MAY 2001)
52.223-10	WASTE REDUCTION PROGRAM (MAY 2011)
52.223-15	ENERGY EFFICIENCY IN ENERGY-CONSUMING PRODUCTS (DEC 2007)
52.223-17	AFFIRMATIVE PROCUREMENT OF EPA-DESIGNATED ITEMS IN SERVICE AND CONSTRUCTION CONTRACTS (MAY 2008)
52.223-18*	CONTRACTOR POLICY TO BAN TEXT MESSAGING WHILE DRIVING (AUG 2011)
52.224-1	PRIVACY ACT NOTIFICATION (APR 1984)
52.224-2	PRIVACY ACT (APR 1984)
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES (JUN 2008)
52.226-1	UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES (JUN 2000)
52.227-1	AUTHORIZATION AND CONSENT (DEC 2007) ALT I (APR 1984)
52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT

CLAUSE NUMBER	CLAUSE TITLE
	INFRINGEMENT (DEC 2007)
52.227-11	**PATENT RIGHTS -- OWNERSHIP BY THE CONTRACTOR (MAY 2014)**
52.227-14	**RIGHTS IN DATA--GENERAL (MAY 2014) – AS MODIFIED BY NASA FAR SUPPLEMENT 1852.227-14 NOTE:** The paragraph numbering has changed in the updated FAR clause 52.227-14. Until such time as 1852.227-14 is updated all references in 1852.227-14 to subparagraph (3) shall be changed to subparagraph (4). **RIGHTS IN DATA--GENERAL ALTERNATE III (DEC 2007)**
52.227-15	**REPRESENTATION OF LIMITED RIGHTS DATA AND RESTRICTED COMPUTER SOFTWARE (DEC 2007)**
52.227-16	**ADDITIONAL DATA REQUIREMENTS (JUN 1987)**
52.227-19	**COMMERCIAL COMPUTER SOFTWARE LICENSE (DEC 2007)**
52.227-23	**RIGHTS TO PROPOSAL DATA (TECHNICAL) (JUN 1987)**
52.228-5	**INSURANCE - WORK ON A GOVERNMENT INSTALLATION (JAN 1997)**
52.228-7	**INSURANCE – LIABILITY TO THIRD PERSONS (MAR 1996)**
52.229-3	**FEDERAL, STATE, AND LOCAL TAXES (FEB 2013)**
52.230-3	**DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES. (MAY 2014)**
52.232-1	**PAYMENTS (APR 1984)**
52.232-8	**DISCOUNTS FOR PROMPT PAYMENT (FEB 2002)**
52.232-9	**LIMITATION ON WITHHOLDING OF PAYMENTS (APR 1984)**
52.232-11	**EXTRAS (APR 1984)**
52.232-17	**INTEREST (MAY 2014)**
52.232-18	**AVAILABILITY OF FUNDS (APR 1984)**
52.232-20	**LIMITATION OF COST (APR 1984)**
52.232-22	**LIMITATION OF FUNDS (APR 1984)**
52.232-23	**ASSIGNMENT OF CLAIMS (MAY 2014)**
52.232-25	**PROMPT PAYMENT (JUL 2013) ALTERNATE I (FEB 2002)**
52.232-33	**PAYMENT BY ELECTRONIC FUNDS TRANSFER – CENTRAL CONTRACTOR REGISTRATION (JUL 2013)**
52.233-1	**DISPUTES (MAY 2014) - ALTERNATE I (DEC 1991)**
52.233-3	**PROTEST AFTER AWARD (AUG 1996) ALTERNATE I (JUN 1985)**
52.233-4	**APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM (OCT 2004)**
52.237-2	**PROTECTION OF GOVERNMENT BUILDINGS, EQUIPMENT, AND VEGETATION (APR 1984)**
52.237-3	**CONTINUITY OF SERVICES (JAN 1991)**
52.239-1	**PRIVACY OR SECURITY SAFEGUARDS (AUG 1996)**
52.242-1	**NOTICE OF INTENT TO DISALLOW COSTS (APR 1984)**
52.242-3	**PENALTIES FOR UNALLOWABLE COSTS (MAY 2014)**
52.242-4	**CERTIFICATION OF FINAL INDIRECT COSTS (JAN 1997)**
52.242-13	**BANKRUPTCY (JUL 1995)**
52.243-2	**CHANGES – COST-REIMBURSEMENT (AUG 1987) ALTERNATE I (APR 1984)**
52.243-7	**NOTIFICATION OF CHANGES (APR 1984)** Fill in (b) 20 days; (d) 30 days
52.244-2	**SUBCONTRACTS (OCT 2010)** Fill in: (d) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts: any subcontract over $11.5M
52.244-5	**COMPETITION IN SUBCONTRACTING (DEC 1996)**

CLAUSE NUMBER	CLAUSE TITLE
52.244-6	SUBCONTRACTS FOR COMMERCIAL ITEMS (JUL 2014)
52.245-1	GOVERNMENT PROPERTY (APR 2012)
52.245-9	USE AND CHARGES (APR 2012)
52.246-25	LIMITATION OF LIABILITY - SERVICES (FEB 1997)
52.247-1	COMMERCIAL BILL OF LADING NOTATIONS (FEB 2006)
52.248-1	VALUE ENGINEERING (OCT 2010)
52.249-4	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (SERVICES)(SHORT FORM) (APR 1984)
52.249-6	TERMINATION (COST REIMBURSEMENT) (MAY 2004)
52.249-14	EXCUSABLE DELAYS (APR 1984)
52.251-1	GOVERNMENT SUPPLY SOURCES (APR 2012)
52.253-1	COMPUTER GENERATED FORMS (JAN 1991)
1852.203-71	REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS (AUG 2014)
1852.216-89	ASSIGNMENT AND RELEASE FORMS (JUL 1997)
1852.216-90	ALLOWABILITY OF LEGAL COSTS INCURRED IN CONNECTION WITH A WHISTLEBLOWER PROCEEDING (AUG 2014)
1852.219-74	USE OF RURAL AREA SMALL BUSINESSES (SEP 1990)
1852.227-11	PATENT RIGHTS--RETENTION BY THE CONTRACTOR (SHORT FORM)
1852.227-14	RIGHTS IN DATA- GENERAL
1852.228-75	MINIMUM INSURANCE COVERAGE (OCT 1988)
1852.237-70	EMERGENCY EVACUATION PROCEDURES (DEC 1988)
1852.242-78	EMERGENCY MEDICAL SERVICES AND EVACUATION (APR 2001)
1852.243-71	SHARED SAVINGS (MAR 1997)

I.2 Notice of Total Small Business Set-Aside. (52.219-6) (Nov 2011)

(a) *Definition*. "Small business concern," as used in this clause, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the size standards in this solicitation.

(b) *Applicability*. This clause applies only to—

(1) Contracts that have been totally set aside or reserved for small business concerns; and

(2) Orders set aside for small business concerns under multiple-award contracts as described in 8.405-5 and 16.505(b)(2)(i)(F).

(c) General.

(1) Offers are solicited only from small business concerns. Offers received from concerns that are not small business concerns shall be considered nonresponsive and will be rejected.

(2) Any award resulting from this solicitation will be made to a small business concern.

(d) *Agreement*. A small business concern submitting an offer in its own name shall furnish, in performing the contract, only end items manufactured or produced by small business concerns in the United States or its outlying areas. If this procurement is processed under simplified acquisition procedures and the total amount of this contract does not exceed $25,000, a small business concern

may furnish the product of any domestic firm. This paragraph does not apply to construction or service contracts.

(End of clause)

I.3 NOTIFICATION OF OWNERSHIP CHANGES (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 OPTION TO EXTEND SERVICES (52.217-8) (NOV 1999)

The Government may require continued performance of any services within the limits and at the rates specified in the contract. These rates may be adjusted only as a result of revisions to prevailing labor rates provided by the Secretary of Labor. The option provision may be exercised more than once, but the total extension of performance hereunder shall not exceed 6 months. The Contracting Officer may exercise the option by written notice to the Contractor prior to the expiration of the contract.

(End of clause)

I.5 ESTIMATE OF PERCENTAGE OF RECOVERED MATERIAL CONTENT FOR EPA-DESIGNATED ITEMS (52.223-9) (MAY 2008)

(a) *Definitions*. As used in this clause -

"Postconsumer material" means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material."

"Recovered material" means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall -

(1) Estimate the percentage of the total recovered material content for EPA-designated item(s) delivered and/or used in contract performance, including, if applicable, the percentage of post-consumer material content; and

(2) Submit this estimate to the Contracting Officer.

(End of clause)

I.6 AUTHORIZED DEVIATIONS IN CLAUSES (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 18) clause with an authorized deviation is indicated by the addition of (DEVIATION) after the name of the regulation.

(End of clause)

I.7 SECURITY REQUIREMENTS FOR UNCLASSIFIED INFORMATION TECHNOLOGY RESOURCES. (1852.204-76) (JAN 2011)

(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.8 OMBUDSMAN (1852.215-84) (JAN 2011) – 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 preaward and postaward phases of this acquisition. When requested, the ombudsman will maintain strict confidentiality as to the source of the concern. The existence of the ombudsman is not to diminish the authority of the contracting officer, the Source Evaluation Board, or the selection official. Further, the ombudsman does not participate in the evaluation of proposals, the source selection process, or the adjudication of formal contract disputes. Therefore, before consulting with an ombudsman, interested parties must first address their concerns, issues, disagreements, and/or recommendations to the contracting officer for resolution.

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

ombudsman, whose name, address, telephone number, facsimile number, and e-mail address may be found at: http://prod.nais.nasa.gov/pub/pub_library/Omb.html. Concerns, issues, disagreements, and recommendations which cannot be resolved at the installation may be referred to the Agency ombudsman identified at the above URL. 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.9 NASA 8 PERCENT GOAL (1852.219-76) (JUL 1997)

(a) Definitions.

"Historically Black Colleges or University," as used in this clause, means an institution determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2. The term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institutions," as used in this clause, means an institution of higher education meeting the requirements of section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1135d-5(3)) which for the purposes of this clause includes a Hispanic-serving institution of higher education as defined in section 316(b)(1) of the Act (20 U.S.C. 1059c(b)(1)).

"Small disadvantaged business concern," as used in this clause, means a small business concern that (1) is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals, and (2) has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian Organization, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more of these entities, which has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian Organization, and which meets the requirements of 13 CFR 124.

"Women-owned small business concern," as used in this clause, means a small business concern (1) which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women, and (2) whose management and daily business operations are controlled by one or more women.

(b) The NASA Administrator is required by statute to establish annually a goal to make available to small disadvantaged business concerns, Historically Black Colleges and Universities, minority institutions, and women-owned small business concerns, at least 8 percent of NASA's procurement dollars under prime contracts or subcontracts awarded in support of authorized programs, including the space station by the time operational status is obtained.

(c) The contractor hereby agrees to assist NASA in achieving this goal by using its best efforts to

award subcontracts to such entities to the fullest extent consistent with efficient contract performance.

(d) Contractors acting in good faith may rely on written representations by their subcontractors regarding their status as small disadvantaged business concerns, Historically Black Colleges and Universities, minority institutions, and women-owned small business concerns.

(End of clause)

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

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

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

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

(1) Utilize any sensitive information coming into its possession only for the purposes of performing the services specified in this contract, and not to improve its own competitive position in another procurement.

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

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

(4) Preclude access and disclosure of sensitive information to persons and entities outside of the Contractor's organization.

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

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

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

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

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

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

(End of clause)

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

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

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

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

Mark the title page with the following legend:

This proposal or document includes sensitive information that NASA shall not disclose outside the Agency and its service providers that support management activities and administrative functions. To gain access to this sensitive information, a service provider's contract must contain the clause at NFS 1852.237-72, Access to Sensitive Information. Consistent with this clause, the service provider shall not duplicate, use, or disclose the information in whole or in part for any purpose other than to perform the services specified in its contract. This restriction does not limit the Government's right to use this information if it is obtained from another source without restriction. The information subject to this restriction is contained in pages *all pages*. Mark each page of sensitive information the Contractor wishes to restrict with the following legend:

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

(2) The Contracting Officer shall evaluate the facts supporting any claim that particular information is "sensitive." This evaluation shall consider the time and resources necessary to protect the

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

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

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

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

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

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

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

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

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

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

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

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

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

(End of clause)

(End of Section)

SECTION J - LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

J.1 LIST OF EXHIBITS/ATTACHMENTS

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

Exhibits

Exhibit A	Statement of Work (SOW) - Revised via Mod 5
Exhibit B	Contract Documentation Reporting Requirements - Revised via Mod 5
Exhibit C	Government Property (Off-Site) - Revised via Mod 5
Exhibit D	Government Property Plan – Revised via Mod 5
Exhibit E	Organizational Conflict of Interest Plan – Revised via Mod 4 (May 2014)
Exhibit F	IT Security Plan - Revised via Mod 4 (May 2014)
Exhibit G	Quality Plan - Revised via Mod 4 (May 2014)
Exhibit H	Schedule of Rates
Exhibit I	Award Fee Plan – Revised via Mod 3 (September 2013)
Exhibit J	Safety & Health Plan – Revised via Mod 5

End of Section

Science, Technology and Research Support Services (STARSS II)

1. 0 Purpose

This Statement of Work (SOW) defines the science, technology and research support requirements of the NASA Langley Research Center (LaRC) Science Directorate. These requirements include, but are not limited to, support in Earth and planetary atmospheric science, research and technology, and Atmospheric Science Data Center (ASDC). The Contract Management section below (section 3.0) addresses overall contract level requirements. Technical requirements are organized into nine Science Technical Areas (STAs) that define the services to be provided under both the Base Mission Support (Base) and Indefinite Delivery/Indefinite Quantity (IDIQ) requirements. The Base provides discipline oriented work that includes core technical engineering services as determined by programs, projects, and implementing organizations. In addition, the Contracting Officer (CO) will issue a number of requirements as IDIQ Task Orders (TOs) to accommodate programmatic uncertainty, and potential new work within the scope of this contract. The CO will issue TOs in cases that include, but are not limited to, short term technical efforts and new work where enduring nature is uncertain. IDIQ work which becomes enduring will be transitioned to Base.

Base requirements as well as IDIQ requirements will utilize Technical Direction Notices (TDNs) as defined in Section G.5 of the contract. Contract documentation and deliverables are identified in Exhibit B. Individual TDNs and TOs will reference other unique applicable documents.

2.0 General Scope

The Contractor shall furnish all personnel, facilities, administrative services, equipment, supplies, and materials, not provided by the Government, necessary to support the NASA LaRC science programs and related engineering activities. Work requirements encompass the broad scope of the missions and responsibilities of the LaRC's science, technology, research and related applications programs. All work assignments will be made by the issuance of TDNs. Work will be performed in compliance with Federal, Agency, and LaRC specific policies, procedures, and regulations, including NASA Procedural Requirements (NPRs) as specified in the contract documents. Specifically, Information Technology Security (ITS) activities shall comply with NPR 2810.1A, "Security of Information Technology" and appropriate Federal Information Processing Standards (FIPS) located on the NASA Online Directives Information System (NODIS) Library at http://nodis3.gsfc.nasa.gov/main_lib.html. The nine STAs of work to be performed are outlined below, in section 4.0.

3.0 Contract Management Requirements

The Contractor shall provide responsive management and administrative functions to ensure the proper resources are available and allocated, adequate reports and documentation are prepared and support the SOW requirements. The Contractor shall

provide an organizational structure with clear lines of authority and clearly identified Government interfaces. The Contractor shall be responsible for ensuring that all contractor and subcontractor personnel engaged in performance of this SOW have appropriate qualifications, knowledge, clearances, certifications, and are free from conflicts of interest, to perform work in accordance with the SOW requirements.

3.1 Responsiveness

The Contractor shall be responsive to face-to-face meeting requests. The Government will require the contractor to participate in scheduled and emergency face-to-face meetings to address a wide variety of task related issues. Due to the dynamic nature of research and development, the contract will experience variations in workload. The Contractor shall possess sufficient flexibility and depth to accommodate the contract requirements in a timely and efficient manner.

3.2 Task Ordering Management System

The Contractor shall provide, update and maintain an integrated electronic Task Ordering Management System (TOMS) for technical requirements and financial information as identified in Section H.4 of the contract.

4.0 Technical Requirements

The Contractor shall provide technical services to accomplish work in the following science technical areas:

4.1 Atmospheric Composition Science

The Atmospheric Composition Science Technical Area provides both in-depth scientific understanding and broad technical capabilities for investigating atmospheric composition (for example: aerosols, clouds, ocean related constituents, Carbon Dioxide (CO2) and others) to enable prediction of global changes that affect environmental quality. Langley instruments are deployed on the ground, onboard aircraft, and on space platforms. This area supports research and development of experimental measurements, and algorithm development techniques for a wide array of customers and programs. The work includes, but is not limited to fundamental, theoretical, analytical, experimental, and applied research. The facilities used for this research include, but are not limited to, the laser-lidar laboratories of Langley buildings 1250, 1202 and 1299. Research will also be conducted in mobile laboratories including but not limited to the ground based Ozone measurement lab and on-board airborne platforms for the advancement of technologies and the acquisition of important atmospheric measurements. Lidar system development, operations, algorithm development and data processing are all needed to enable atmospheric composition science. This work requires proficiency in lidar systems, algorithm development, processing and operations. The Contractor shall perform the following work in atmospheric composition science activities including, but not limited to:

4.1.1 Lidar Field and Laboratory Research

The Contractor shall perform the following work in Lidar Field and Laboratory Research activities including, but not limited to:

4.1.1.1 Conduct measurements to determine the quantity of dissolved oxygen in seawater as an indication of the biological health of ocean and bay seawater for marine organisms.

4.1.1.2 Develop and document operational procedures for the Langley Mobile Ozone Lidar System.

4.1.1.3 Conduct lidar system operations for calibrating, gathering, and analyzing ozone and aerosol data for lidar systems at specified research sites, including but not limited to the Langley Ozone Profiling Lidar instrument research site.

4.1.1.4 Execute ozonesonde validation activities for both local and field measurements.

4.1.1.5 Perform data retrieval, data analysis, and validation, data archival, and data comparisons for lidar system measurements during laboratory or field experiments.

4.1.1.6 Develop software for conducting simulations of experiments, analytical studies, and data reduction associated with atmospheric and ocean lidar remote sensing programs.

4.1.1.7 Develop hardware and software for data acquisition and real-time analysis systems for airborne, ground-based and ocean lidar investigations.

4.1.1.8 Develop, operate, and maintain lasers, detectors, and control systems in integrated airborne, ground-based and ocean lidar systems.

4.1.1.9 Provide on-site and off-site (field campaigns) operations, systems, networks, and configuration support to lidar programs.

4.1.1.10 Provide hardware support for lasers, detectors, and control systems for lidar systems.

4.1.1.11 Provide hardware, software, and operations support for the airborne, ground-based and ocean systems including but not limited to High Spectral Resolution Lidar (HSRL) systems.

4.1.1.12 Document the analysis and interpretations of science data in reports, papers, presentations, and journal articles.

4.1.1.13 Deliverables will be specified in each TDN or Task Order and may include, but not be limited to the following as well as those specified in Exhibit B:

- Lidar standard data products
- Lidar experiment simulation results
- Lidar, in situ, and satellite data analysis products

4.1.2 Lidar Science Algorithm and Data Analysis

The Contractor shall perform the following work in Lidar Science Algorithm and Data Analysis activities for public release of science data products including, but not limited to:

4.1.2.1 Develop software for lidar data acquisition and real-time data analysis.

4.1.2.2 Provide hardware support, including lasers, detectors, and control systems development, on-site operation and maintenance.

4.1.2.3 Develop, implement and test advanced algorithms for retrieval of atmospheric and ocean composition profiles from airborne, ground-based, ocean and space-based lidars, including the development of appropriate models and studying the statistical variation of composition properties to determine capabilities and limitations of composition retrieval techniques.

4.1.2.4 Perform analyses to evaluate the information content of observations and improve the characterization of microphysical properties.

4.1.2.5 Provide data, graphics, publications, presentations, and other inputs for documenting technical analyses and scientific studies.

4.1.2.6 Provide travel support for technical interface meetings for non-NASA participants, including visiting scientists, students, and post-docs.

4.1.2.7 Attend and present at science team meetings and technical conferences as required.

4.1.2.8 Document all analysis and interpretations of science data, as well as present data.

4.1.2.9 Provide results of studies, investigations, and modeling activities.

4.1.2.10 Explore retrieval techniques and the uncertainties in the retrieved products using combinations of extinction, backscatter, and depolarization profiles.

4.1.2.11 Provide assessment of each implementation of autonomous lidar algorithms for satellite-based lidars providing backscatter, as well as include retrievals using a combination of lidar data and data from passive radiometric instruments.

4.1.2.12 Perform algorithm and code development and testing.

4.1.2.13 Develop and test a turn-key, high-speed hardware-software computing system to enable rapid operational retrievals from lidar data including but not limited to aerosol microphysical types, and the processing of airborne, ground-based and ocean and simulated data cases.

4.1.2.14 Conduct studies to improve the existing coupled ocean/atmosphere full polarization radiation transfer model.

4.1.2.15 Conduct studies of polarimetric measurements sensitivities to changes in physical properties of aerosols and ocean biogeochemistry and studies of the Remote Scanning Polarimeter (RSP) HSRL data analysis relevant to the development of next generation combined lidar/polarimeter retrieval algorithm.

4.1.2.16 Perform assessment of calibration stability and theoretical assessment of calibration uncertainty associated with multiple scattering including time series of clouds, aerosols, ocean surface and subsurface backscatter and their seasonal/interannual variation.

4.1.2.17 Perform comparisons of data observations with climate modeling results by developing algorithms to apply observations of ocean surface properties using moderate resolution imaging and data analysis and radiative transfer calculations to assess uncertainties in atmospheric radiative fluxes.

4.1.2.18 Perform risk reduction into the damage effects associated with Ultra Violet (UV) laser operation and potential mitigation strategies to improve laser lifetime.

4.1.2.19 Peform upgrades to the ocean color remote sensing data analysis system software program, and improve theoretical understanding of ocean surface mean square slope and its applications in lidar remote sensing.

4.1.2.20 Provide support to organize the relevant applications communities to use NASA's remote sensing data sets; design websites to publicize applied sciences activities and prepare the community for data for applications of societal benefit; facilitate organizations' and communities' efforts to imagine, articulate, and anticipate possible science applications for societal benefit.

4.1.2.21 Deploy ship-based in situ measurements of ocean sub-surface optical properties; conduct data analysis studies for assessment of ocean sub-surface beam attenuation and backscatter profiles using the ship-based measurements.

4.1.2.22 Deliverables will be specified in each TDN or Task Order and may include, but not be limited to the following as well as those specified in Exhibit B:

- All field data collected
- Software code
- Data, graphics and other inputs for documenting technical analyses and scientific studies
- Lidar standard data products, experiment simulation results and analysis

4.1.3 Lidar Laser and Detector System Development and Maintenance

The Contractor shall perform the following work in Lidar Laser and Detector System Development and Maintenance activities including, but not limited to:

4.1.3.1 Serve as consultant to the lidar teams in characterizing the receiver interferometers for backscatter (e.g. aerosol and molecular), and analyze performance tests conducted in the laboratory and in the lidar systems.

4.1.3.2 Perform repairs or modifications to the interferometers as necessitated by the testing.

4.1.3.3 Develop new optimized interferometers.

4.1.3.4 Develop optical, mechanical, and electrical designs and components for the lidar instruments, including but not limited to maintenance of the lidar instruments, upgrade of the lidar instruments, fixtures and instrument components required to mount the lidar instruments on aircraft, and ground support equipment for the deployment, operation, alignment, and maintenance of the lidar instruments.

4.1.3.5 Conduct and document structural and thermal analyses required by the lidar programs.

4.1.3.6 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Components and subsystem solid models and interferometers
- Components to enable the integration of lidar lasers
- Opto-mechanical assemblies and mounting systems
- Housing system and related assemblies required to enable use of items

4.1.4 Lidar Project Development and Validation

The Contractor shall perform the following work in Lidar Project Development and Validation activities including, but not limited to:

4.1.4.1 Develop input to the requirements for the project, including science objectives with traceability to measurement requirements and instrument performance requirements as an input to the space flight instrument conceptual design.

4.1.4.2 Conduct analysis to ensure that the scientific data to be returned from the design reference project meets the needs of the NASA science team.

4.1.4.3 Assess and evaluate scientific requirements.

4.1.4.4 Develop inputs to publications for peer reviewed journals and presentations at scientific conferences as well as attend and present at scientific conferences.

4.1.4.5 Define and assess algorithms, data products, and data validation plans.

4.1.4.6 Develop and evaluate science requirements and specifications for modeling measurement requirements.

4.1.4.7 Conduct flight planning and coordination to meet science objectives during the flight campaigns.

4.1.4.8 Conduct studies, including but not limited to: the impact of micron airglow on the determination of ground pressure by laser absorption spectroscopy of molecular oxygen; the analysis of the impact of airglow on satellite-based laser remote sensing of surface pressure; complete calculations and analysis to produce time dependent estimates of stimulated emissions; evaluate results of calculations.

4.1.4.9 Perform designs of environmental enclosures (using NASA supplied and contractor provided parts) necessary for flight campaigns including fabrication, assembly, integration, alignment.

4.1.4.10 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- All documentation of preliminary, final design, and reviews
- Requirements, data analysis and flight planning reports

4.2 Lidar Missions

Lidar missions are space-based instrument systems designed to provide global measurements of aerosols, clouds, winds, atmospheric composition, and ocean characteristics that are needed to better understand the climate and atmospheric processes. These missions improve the scientific community's ability to model long-term climate trends, as well as operational weather and air quality forecasts. These missions produce publicly available data products which meet the mission requirements for accuracy, availability, and latency. The work includes but is not limited to review of data product algorithms, documentation of code, configuration management of software,

interface control, data distribution, data archival, mission operations, public outreach, and data validation. The Contractor shall perform the following work in Lidar Missions activities including, but not limited to:

4.2.1 Project Management

The Contractor shall perform the following work in Project Management activities including, but not limited to:

4.2.1.1 Provide logistical, administrative and planning support for project, science team or technical interface meetings, workshops and Educational and Outreach activities.

4.2.1.2 Provide travel and reimbursement for non-NASA participants for project, science team or technical interface meetings.

4.2.1.3 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.2.2 Science, Algorithm Development and Quality Assurance

The Contractor shall perform the following work in Science, Algorithm Development and Quality Assurance activities including, but not limited to:

4.2.2.1 Perform scientific and measurement validation studies with data obtained from other atmospheric measurement and modeling systems.

4.2.2.2 Perform science and engineering analysis for algorithm development, implementation, and maintenance as well as provide operational, data reduction, and database archive support for mission-related correlative measurement activities.

4.2.2.3 Perform software development, code verification and review, test product analysis, and configuration management.

4.2.2.4 Perform error analysis of retrievals and development of advanced aerosol absorption retrievals.

4.2.2.5 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Data, graphics, visualizations, and other inputs for documenting technical, scientific or validation studies Detailed reports describing the analyses conducted and conclusions

4.2.3 Mission Operations and Engineering

The Contractor shall perform the following work in Mission Operations and Engineering activities, including, but not limited to:

4.2.3.1 Perform payload instrument operations, mission planning, development, validation, and execution of on-orbit payload instrument commands.

4.2.3.2 Maintain and enhance flight and ground payload processing software, characterization of lidar performance, trend analyses of significant payload and ground-system parameters, and payload and ground system trouble-shooting activities.

4.2.3.3 Perform engineering system and component characterization and testing; data acquisition; algorithm development and maintenance of flight software qualification facilities.

4.2.3.4 Extract engineering and scientific data from the science data downlink stream and perform analysis on engineering parameters, instrument performance, and science data.

4.2.3.5 Prepare, organize, collect, reproduce, and archive all mission documentation.

4.2.3.6 Monitor the maintenance of the ground system network to meet daily communication and processing requirements.

4.2.3.7 Provide a backup data collection and processing facility for mission operations.

4.2.3.8 Perform quick-turnaround requests (2 weeks or less response time) for special multidisciplinary tasks, unanticipated technical problems, and on-orbit and ground system malfunctions.

4.2.3.9 Provide communication devices required to execute appropriate mission operation activities.

4.2.3.10 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Mission operations status reports, which summarize payload performance, operational activities, and payload commanding
- Anomaly reports, as required, that describe the causes and response to unanticipated or adverse payload performance
- Mission operations review presentation packages in support of CNES Annual EXploitation REViews (REVEX) and Joint Steering Group reviews
- Payload telemetry archive
- Payload flight software archive

4.2.4 Data Production and Management

The Contractor shall perform the following work in Data Production and Management activities including, but not limited to:

4.2.4.1 Develop, implement, test and maintain algorithms necessary to combine mission instrument data with spacecraft ephemeris and ancillary meteorological data to produce standard, expedited, research, and final data products.

4.2.4.2 Develop and maintain production software to run at the ASDC and conduct data production operations to produce and archive data products.

4.2.4.3 Modify existing software scripts and mission-level program elements as required to create a processing subsystem that will ingest data and create a specified data record.

4.2.4.4 Analyze, assess, and evaluate the geolocation and calibration accuracies of various specified data and support the validation of data products.

4.2.4.5 Perform quick-turnaround requests (less than 2 weeks response time) for special multidisciplinary tasks, unanticipated technical problems, and system malfunctions.

4.2.4.6 Perform updates to the mission data processing system operations guide.

4.2.4.7 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Monthly summary reports of the status of processing and archival activities and the status of the processing, archival, and local data storage system at ASDC as well as a report on the transfer of mission data products to the other data centers
- Software code and supporting documentation
- Software tools and supporting documentation for the analysis and display of data

4.2.5 NASA Cloud-Aerosol Transport System (CATS)

The NASA Cloud-Aerosol Transport System (CATS) lidar will provide range-resolved profile measurements of atmospheric aerosols and cloud distributions and properties. The primary objective of the CATS Lidar Support task is to use the CATS measurements to augment and extend the long-term data record established by CALIPSO. The Contractor shall perform the following work in support of the NASA CATS lidar including, but not limited to:

4.2.5.1 Identify, document, and track requirements for CATS lidar generation of CALIPSO-like Level 2 products.

4.2.5.2 Provide analysis to evaluate the geolocation and calibration of CATS Level 1 data and support the validation of the CATS CALIPSO-like data products.

4.2.5.3 Provide a monthly status report and provide a schedule of planned activities.

4.2.5.4 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Monthly summary reports of the status of processing and archival activities and the status of the processing, archival, and local data storage system at ASDC
- Provide updates, as determined by the NASA TPOC, to the CATS-CALIPSO data processing system Operations Guide
- Provide CATS-CALIPSO code and supporting documentation
- Provide CATS-CALIPSO software tools and supporting documentation for the analysis and display of CATS-CALIPSO data
- Monthly progress reports including completed and projected accomplishments, significant issues, and metrics reflecting the successes in meeting CALISPO performance standards

4.3 Climate Science Missions

The Climate Science Missions Technical Area provides both in-depth scientific understanding and broad technical capabilities for investigating radiative transfer within the atmosphere and on the surface of the Earth, and the effects of climate forcings, climate feedbacks, and climate sensitivity including the effects of clouds, aerosols, general circulation, and surface properties on the global, regional, and local climates of the planet. Langley instruments are deployed on the ground and ocean, on aircraft, and in space. This area supports formulation of new mission concepts, technology and instrument development, calibration and characterization, data analysis (e.g., retrieval algorithms, spectral fingerprinting), data validation, data processing/distribution/archiving, generation of Climate Data Records (CDRs) and applying the results for societal benefit. The work includes, but is not limited to, fundamental, theoretical, analytical, and experimental, as well as applied research as they relate to specified missions. This work requires proficiency in remote sensing instrument development, algorithm development, scientific data processing, and operations. The Contractor shall perform the following work in Climate Science Mission activities including, but not limited to:

4.3.1 Mission Technical Management

The Contractor shall perform the following work in Mission Technical Management activities including, but not limited to:

4.3.1.1 Perform analyses to establish accurate calibrations for mission instruments.

4.3.1.2 Monitor mission on-orbit instrument operations and provide support for identifying and implementing any required actions including actions associated with spacecraft maneuvers.

4.3.1.3 Develop tools for performing reference intercalibration of climate science instruments.

4.3.1.4 Perform cost, programmatic, and engineering trade analyses to facilitate development, acquisition and deployment of climate science instruments and missions.

4.3.1.5 Perform mission required feasibility studies.

4.3.1.6 Study the performance of radiometric instruments in low-temperature and low-pressure environments for potential applications in polar regions and on high altitude platforms.

4.3.1.7 Perform studies evaluating potential future Earth System Science Pathfinder Program, Venture Class missions.

4.3.1.8 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Monthly instrument/mission status reports
- Monthly calibration status reports
- Reports in support of cost, programmatic, and engineering trade analyses

4.3.2 Mission Science

The Contractor shall perform the following work in support of Mission Science activities including, but not limited to:

4.3.2.1 Participate in scientific studies and contribute to the development and publication of study and mission results in the scientific literature.

4.3.2.2 Develop and apply radiative transfer models to study cloud radiative effects at the top of the atmosphere and the surface.

4.3.2.3 Perform tasks associated with algorithm development, analysis, validation, and improvement for existing climate science missions.

4.3.2.4 Perform tasks associated with development and implementation of cloud retrieval algorithms and software.

4.3.2.5 Develop and maintain ancillary datasets for aerosols, total solar irradiance and other physical parameters used to support production of radiation budget data products.

4.3.2.6 Assess the quality of mission data products and ascertain their long-term trends.

4.3.2.7 Develop and analyze simulated mission data sets to refine science and measurement requirements for climate science missions, including but not limited to, instrument field-of-view, swath width, spectral resolution and range, measurement accuracy and noise, and spacecraft pointing capability.

4.3.2.8 Perform orbital and sampling analyses in support of mission scenario analysis to refine requirements for sampling frequency, spacecraft altitude, mission life, and systematic sampling error.

4.3.2.9 Develop and validate multi-year data sets to be used for orbital sampling studies.

4.3.2.10 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Monthly instrument/mission status reports
- Monthly calibration status reports
- Standard mission data products
- Updated ancillary datasets

4.3.3 Mission Logistics

The Contractor shall perform the following work in support of Mission Logistics activities including, but not limited to:

4.3.3.1 Provide mission support required for science management, website content development, and education and public outreach activities.

4.3.3.2 Provide logistical support and planning for science team meetings.

4.3.3.3 Assist mission team in planning and readiness for all major reviews of the mission development.

4.3.3.4 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.3.4 Mission Data Management

The Contractor shall perform the following work in Mission Data Management activities including, but not limited to:

4.3.4.1 Provide science data processing codes for implementing algorithms into data management subsystem software.

4.3.4.2 Provide software and data processing support for mission working group lead data product validation efforts at the Science Computing Facility (SCF).

4.3.4.3 Develop software to deploy science algorithms and code.

4.3.4.4 Develop and maintain documentation for all mission software.

4.3.4.5 Participate in working group and science team meetings.

4.3.4.6 Refine and implement configuration management processes for all mission software.

4.3.4.7 Define requirements for and monitor mission data stored at the NASA ASDC.

4.3.4.8 Provide software library maintenance and development support.

4.3.4.9 Provide data production requests, scheduling and monitoring, as required, for data processing at the ASDC.

4.3.4.10 Identify and provide implementation support for means to streamline and improve efficiency in mission production processing systems.

4.3.4.11 Develop and deploy tools for data dissemination.

4.3.4.12 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Data products catalogs, interface requirements, data management plans, ancillary input data, quality assessment plans, coding guidelines, software design documents, validation documents, test plans, operator's manuals, data set collection guides, and other documentation as needed to satisfy project/program requirements

4.3.5 Mission Validation

The Contractor shall perform the following work in Mission Validation activities including, but not limited to:

4.3.5.1 Perform instrument installation, maintenance, data collection, instrument calibration, and systems upgrades.

4.3.5.2 Provide, maintain, and operate facilities for instrument characterization.

4.3.5.3 Provide transportation to validation sites to conduct on-site operations and maintenance using various modes of transportation including, but not limited to, helicopter and boat, as required to complete the work.

4.3.5.4 Resolve data quality issues, update international archive databases and include newly qualified data into the specified databases for public access.

4.3.5.5 Install validation instruments at Government-specified observatories for calibration purposes, and assure high quality observations at those installations.

4.3.5.6 Incorporate algorithms and store results in Government-specified databases to allow detailed scientific analyses based on scenarios and different temporal samplings.

4.3.5.7 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Data sets derived from and specific to validation instruments

4.4 Climate Science Research and Analysis

The Climate Science Research and Analysis Technical Area provides both in depth scientific understanding and broad technical capabilities for investigating radiative transfer within the atmosphere and on the surface of the Earth, and the effects of climate forcings, climate feedbacks, and climate sensitivity including the effects of clouds, aerosols, general circulation, and surface properties on the global, regional, and local climates of the planet. Langley instruments are deployed on the ground and ocean, on aircraft, and in space. This area supports research and development of methods for experimental measurement; development and implementation of data fusion and analysis techniques; scientific modeling and simulation; and research, development, and implementation of computer architectures and systems for analyzing atmospheric data for a wide array of customers and programs. The work includes, but is not limited to, fundamental, theoretical, analytical, and experimental, as well as applied research. This work requires proficiency in remote sensing instrument development, algorithm development, scientific data processing, and operations. The Contractor shall perform the following work in Climate Science Research and Analysis activities including, but not limited to:

4.4.1 Data Fusion and Analysis

The Contractor shall perform the following work in Data Fusion and Analysis activities including, but not limited to:

4.4.1.1 Perform research and analysis using data from multiple satellites, aircraft instrumentation, ground instrumentation, and models to quantify the effects of clouds and aerosols on the Earth's radiation energy budget, and use multi-year

satellite data records to quantify interannual variability at local, regional, zonal, and global spatial scales.

4.4.1.2 Calibrate specified instruments and operational and research satellite imagers dedicated to weather and climate problems.

4.4.1.3 Analyze cloud object types and Surface Radiation Budget (SRB); derive cloud properties from specified radiometers.

4.4.1.4 Develop and apply algorithms to estimate contrail properties and radiative forcing from satellite data.

4.4.1.5 Perform code development required for subsetting data, irradiance variability analysis, comparison with latent heat flux, and analyzing cloud properties by cloud types.

4.4.1.6 Develop light-scattering models and simulate heterogeneous single-scattering properties of heterogeneous ice crystals to enhance radiative transfer calculations.

4.4.1.7 Validate, improve, analyze and disseminate algorithms and data products using surface, aircraft, and independent satellite based estimates.

4.4.1.8 Provide monthly-averaged regional, zonal, and global estimates of radiation budget parameters identical to historical mission data products within acceptable tolerances.

4.4.1.9 Provide updated non-scanner related algorithms that are capable of production level data processing.

4.4.1.10 Study aerosol direct radiative effects and provide a quantitative assessment of how thin clouds are identified by satellites and influence the Earth's radiation budget. Analyze data from aircraft instruments and compare with coincident and collocated data from satellites to derive invisible cloud physical properties. Develop algorithms that can be directly applied to data for removing the effect of invisible clouds on aerosol products. Examine the clear domain for subvisual clouds and retrieve the physical properties of subvisual clouds to help missions reduce the uncertainty in retrieved aerosol properties. Utilize satellite data sets to study the global horizontal and vertical distribution of super-thin clouds. Study the sensitivity of top-of-atmosphere (TOA) polarized reflectance to the surface condition and the aerosol amount below the subvisual cloud layer.

4.4.1.11 Establish accuracy of derived TOA irradiances and compare contributions of surface, cloud and atmospheric property variability to the TOA irradiance variability.

4.4.1.12 Compare surface radiation budget data sets to other surface radiation data sets and analyze long-term time series of surface radiation budget data in

conjunction with surface measurement records and analyze those measurements in context of other scientific investigations.

4.4.1.13 Conduct research into the use of infrared spectral data for the assessment of climate change, provide analysis of existing data sets from infrared instruments and test new concepts for using infrared data to assess climate variability and change, and investigate specific elements of climate processes through comparison of infrared measurements and models.

4.4.1.14 Perform algorithm development, computer programming, analysis, validation, and internet-based data display and data dissemination for scientific studies, image processing, and database development and management related to clouds, radiation, contrails, aerosol, and aircraft icing research.

4.4.1.15 Update the calibration of existing infrared spectral sensors, analyze the data, and reprocess existing data from instruments recorded in prior field campaigns.

4.4.1.16 Perform analyses and studies in support of atmospheric sciences research projects and field experiments. Perform real-time satellite analyses for support of aircraft icing condition diagnoses, field program support, and data assimilation studies. Develop and document cloud analysis codes; develop and test cloud property retrieval algorithms.

4.4.1.17 Provide data management by producing merged data products for distribution to the public; revise the merged data by closely following the revision of data on the respective mission's websites; develop and maintain systems to archive and disseminate cloud and radiation products from satellite analyses; work closely with LaRC's ASDC for data archival and distribution. Respond to requests for data and documentation for users of the research data products.

4.4.1.18 Develop, validate, and disseminate data sets for decision support system needs in government and industry in societal benefit areas including but not limited to energy and agriculture.

4.4.1.19 Attend scientific conferences to present results from these activities.

4.4.1.20 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Data products in standard digital and image formats for archival, dissemination, and internet access
- Web page code and documentation

4.4.2 Modeling and Simulation

The Contractor shall perform the following work in Modeling and Simulation activities including, but not limited to:

4.4.2.1 Develop and improve large eddy simulations, cloud-resolving models, general circulation models, single column models, convective cloud parameterizations, Multi-scale Modeling Frameworks (MMF) and other models as needed, and perform simulations using various data sets available, including but not limited to cloud object data; and test improvements in MMF in support of projects and teams.

4.4.2.2 Develop and improve climate model versions of higher-order turbulence closure schemes and other schemes as needed in support of projects, teams, and other Government agencies.

4.4.2.3 Test simplified versions of higher-order turbulence closure schemes and other schemes in single column model, cloud-resolving model, MMF, and other models as needed.

4.4.2.4 Perform and analyze CO2 doubling in MMF and other model simulations as needed.

4.4.2.5 Document methods and results of analyses by providing annotated computer code and written descriptions of methods and equations.

4.4.2.6 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Data products in standard digital and image formats for archival, dissemination, and internet access
- Web page code and documentation

4.4.3 Computer Architectures, Systems, and Distributed Processing Frameworks

The Contractor shall perform the following work in Computer Architectures, Systems, and Distributed Processing Frameworks activities including, but not limited to:

4.4.3.1 Develop architectural designs and implementation of computer systems to provide distributed processing frameworks that perform inter-calibration of multiple instruments, and integrate science algorithms into the framework to demonstrate inter-calibration and data processing.

4.4.3.2 Demonstrate extendable distributed processing frameworks that allow instrument teams to perform significantly more processing at remote data centers versus transmitting large volumes of data to local science data systems for processing.

4.4.3.3 Integrate networking software into the science data production environment to provide better use of computer resources and expedite production of collaborative merged data products.

4.4.3.4 Analyze code and map algorithms into framework clients and server modules.

4.4.3.5 Develop all histogram server-side functions and perform document testing on ASDC data servers.

4.4.3.6 Develop and maintain all software in a Government-specified repository and perform unit testing of development software.

4.4.3.7 Support deployment testing and document framework architecture, performance, and lessons learned.

4.4.3.8 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Data products in standard digital and image formats for archival, dissemination, and internet access
- Web page code and documentation

4.5 Chemistry and Dynamics Science

The Chemistry and Dynamics Science Technical Area provides both in-depth scientific understanding and broad technical capabilities for investigating atmospheric composition on Earth (e.g., photo chemically and radiatively active trace gases, aerosol chemistry and microphysics, aerosol-cloud interactions, upper atmosphere ozone and aerosols, biologically harmful radiation at aviation altitudes) and other planetary bodies (e.g., Mars, the outer planets, sun-Earth heliophysics connection) to enable prediction of global changes on Earth that affect environmental quality, and advance solar system science. Langley instruments are deployed on the ground, as sondes, on aircraft and from space, with science enabled through cross- and inter-disciplinary science investigations through analysis, modeling and interpretive analyses. This area supports formulation, research and development of experimental measurement instruments, algorithm development techniques, and modeling simulations for a wide array of customers and programs. The work includes, but is not limited to, fundamental, theoretical, analytical, experimental science, as well flight and field mission concept, development, and deployment, and also applied research. The facilities and capabilities include, but are not limited to, B1250 laboratories, mobile laboratories, portable sonde launch systems, and airborne instruments that are used to advance technologies and conduct field experiments to obtain important atmospheric measurements. For example, the Deriving Information on Surface conditions from Column and Vertically Resolved Observations Relevant to Air Quality (DISCOVER-AQ) mission uses a variety of aircraft-based instruments to study air quality and enable a space-based capability for global air quality measurements; the Stratospheric Aerosol and Gas Experiment (SAGE) III continuity mission provides long-term measurements of ozone, aerosols, water vapor and other key parameters; the Nowcast of Atmospheric Ionizing Radiation System (NAIRAS) and the Radiation Dosimetry Experiment (RaD-X) support a physics-based prototype operational model for predicting aircraft radiation exposure from galactic and solar cosmic rays; and the

Tropospheric Emissions: Monitoring of Pollution (TEMPO) project will measure atmospheric pollution covering most of North America from geosynchronos orbit). The variety of technologies, in situ and remote sensing measurement systems, algorithms, models, data processing and database tools are all needed to enable advances in integrated atmospheric science. This area supports various scales of scientific investigations ranging from small research and analysis tasks through complex sub-orbital campaigns to large flight missions, throughout the full project life cycle. The Contractor shall perform the following work in Chemistry and Dynamics Science including, but not limited to:

4.5.1 Upper Atmosphere Ozone, Aerosol Management, Processing, Analysis and Science

The Contractor shall perform the following work in Upper Atmosphere Ozone, Aerosol Management, Processing, Analysis and Science activities, including, but not limited to:

4.5.1.1 Provide data processing for instruments, missions, projects and experiments.

4.5.1.2 Develop, implement and test algorithms necessary to combine sensor data with spacecraft ephemeris data to produce scientific data products defined by the lead NASA scientist.

4.5.1.3 Develop production software to run on the SCF at NASA LaRC ASDC with data product archival at the NASA LaRC ASDC and other websites and provide detailed instructions for accessing this data.

4.5.1.4 Derive specific components in concert with the lead NASA scientist to achieve established science goals and include, but are not limited to, product definitions; software design, planning and development; configuration management; documentation; algorithm porting and development; software engineering and systems programming; ground and equipment work; data processing operation; software integration; testing and maintenance; debugging; and quality assurance.

4.5.1.5 Provide payload engineering to include, but not limited to, instrument testing, evaluation of flight software architecture and implementation trades, development of limb scattering requirements, development of concept of operations, and other mission systems engineering.

4.5.1.6 Perform the integration and testing, including scripting of instrument assembly for subsystem environmental testing and preparation for project milestones.

4.5.1.7 Perform and execute maintenance testing, post refurbishment testing, and system level testing; as well as development of test plans, test procedures, test scripts, and databases for integrated testing.

4.5.1.8 Provide programming for embedded systems in flight hardware, ground test equipment, and instrument mockups as well as programming for ground data processing equipment; develop documentation of code design, functionality, and processing.

4.5.1.9 Perform analysis and research in support of proposal development.

4.5.1.10 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Data products
- Science and production code developed to produce data products

4.5.2 Travel and Deployment for Missions and Projects

The Contractor shall perform the following work for Travel and Deployment for Missions and Projects activities, including, but not limited to:

4.5.2.1 Participate in field mission deployments; provide ground based and sub-orbital platform aerosol observations (including, but not limited to, aerosol chemistry, size distributions, ground level gas, particulate species, and volatility distributions) using instrument systems.

4.5.2.2 Provide tethered balloon observations of boundary layer meteorological structure, near-surface gradients in trace gases and aerosols, and ground-truth aerosol measurements at various air monitoring sites.

4.5.2.3 Analyze, performs quality control/assurance, and process data collected during field experiments.

4.5.2.4 Generate estimates of the optical properties of aerosol types.

4.5.2.5 Provide travel and logistics support for science team meetings, integration, deployments and de-integration, to include, but not be limited to, travel arrangements, flight reservations, lodging, rental cars, and reimbursements.

4.5.2.6 Maintain detailed account of expenses incurred by and reimbursed to event participants.

4.5.2.7 Provide for shipping of instruments or other deployment-related items.

4.5.2.8 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Delivery and archival of data products

4.5.3 Passive Hyperspectral Engineering and Science

The Contractor shall perform the following work in Passive Hyperspectral Engineering and Science activities, including, but not limited to:

4.5.3.1 Engineering and technical work to maintain, optimize and improve instrument hardware performance, while including advancements to instrument command and control, and data acquisition and visualization software.

4.5.3.2 Analyze and interpret near-real-time instrument flight science and engineering data including but not limited to checkout and experiment flights.

4.5.3.3 Participate in ground testing, calibration, upward-looking, intercomparison testing, performance verification testing, and flight readiness improvement activities.

4.5.3.4 Support development of science algorithms and data processing concepts for the analysis of field program data, calibration/validation planning, activities associated with instrument performance optimization, and study improvements for atmospheric sounding to be considered for next generation sounding systems (airborne and space based).

4.5.3.5 Participate in field deployments to identify science requirements, plan aircraft flight profiles, and analyze/interpret near real-time instrument flight science and engineering data.

4.5.3.6 Perform software and analysis research and software programming on radiative transfer model development and retrieval inversion codes.

4.5.3.7 Perform algorithm development for hyperspectral remote sensing.

4.5.3.8 Develop radiative transfer models and methods for Hyperspectral sensors and generate proxy data.

4.5.3.9 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Analysis results, data sets, software, and plots

4.5.4 Atmospheric Composition, Air Quality Mission, Project Formulation and Research

The Contractor shall perform the following work in the area of Atmospheric Composition, Air Quality Mission, Project Formulation and Research activities, including, but not limited to:

4.5.4.1 Identify and analyze commercially hosted government payload contract data packages to meet the goals and objectives of NASA's Decadal Survey missions.

4.5.4.2 Expand the data base of contracting documents from recent successful commercially hosted government payloads in geostationary orbit and assess these documents in light of NASA policies and procedures.

4.5.4.3 Develop and improve documents in draft form for accommodating payloads on commercial communications spacecraft, including, but not limited to, developing and reviewing documents thoroughly for compliance with applicable policies, technical compliance, management plans and baseline costs to conduct the commercial business efficiently.

4.5.4.4 Define and plan the accommodation and access to space activities for instruments consistent.

4.5.4.5 Provide scientific computing and analysis capabilities for directed and competed activities and provide programming, data analysis, and numeric simulations to evaluate models and sensitivities and responses to various input parameters measured at experimental sites.

4.5.4.6 Perform data processing to include the development, implementation, and testing of algorithms required to combine space-based observations of criteria pollutants and precursors with relevant ground network data to produce applied science data product demonstrations for use by other agencies and the public.

4.5.4.7 Perform multidisciplinary applied science in the form of quick-turnaround of special tasks, inter-agency meetings, and other expert scientific fora where flexibility, rapid response, and scientific communication are the key criteria.

4.5.4.8 Provide administrative, consulting, outreach, website, and logistics for the activities performed.

4.5.4.9 Operate, calibrate, maintain, and repair the collection of current and future instruments for research activities and provide on-site work on additional monitoring instruments at research sites as needed.

4.5.4.10 Provide site preparation and instrument set-up, calibration, daily operation, and data retrieval for high temporal resolution instruments and integrated samplers.

4.5.4.11 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Reports analyzing the success and shortcomings of current NASA and other government agencies' hosted payload projects cited in the library
- Data products, analysis reports, documentation for the operations of instruments

4.5.5 Closed-path Laser Instrument, Data Acquisition, and Analysis

The Contractor shall perform the following work in Closed-path Laser Instrument, Data Acquisition, and Analysis activities including, but not limited to:

4.5.5.1 Perform measurement activities in the laboratory and onboard atmospheric research aircraft for sub-orbital flight experiments, instrument testing and preparation for laboratory and field deployments.

4.5.5.2 Develop all software tools and applications required to meet data acquisition, analyses, and archival processes and utilize the latest developments in software and hardware to upgrade and enhance present capabilities.

4.5.5.3 Perform data collection analysis, measurements, and other field work for missions, projects, and campaigns.

4.5.5.4 Conduct laboratory testing and debugging of data acquisition hardware and software prior to integration on aircraft for campaigns, projects, missions, as well as laboratory testing and calibration at various stages throughout field campaigns.

4.5.5.5 Perform software development and data archiving for measurement activities on board atmospheric research platforms in on NASA sponsored sub-orbital flight experiments.

4.5.5.6 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.5.6 In Situ Aerosol Measurements

The Contractor shall perform the following work in the area of In Situ Aerosol Measurements activities including, but not limited to:

4.5.6.1 Provide mission planning; instrument development, testing and checkout, and improvement; and execution of experiments to collect and analyze gaseous and particulate emissions from combustors and aircraft engines.

4.5.6.2 Provide instrument set up and calibration, field operations, data acquisition, analysis and archiving for tropospheric chemistry field missions.

4.5.6.3 Perform in situ measurements from aircraft as part of tropospheric chemistry field studies.

4.5.6.4 Participate in assimilating data from a variety of sources to create merged data sets and publicly-accessable databases for engine and combustor emission experiments.

4.5.6.5 Collect and analyze aerosol samples using laboratory equipment including but not limited to ion chromatography, thermal optical analysis, and gas chromatograph and mass spectrometer.

4.5.6.6 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.5.7 Development Activities for Airborne and Ground-based Sensors

The Contractor shall perform the following work in Development Activities for Airborne and Ground-based Sensors activities including, but not limited to:

4.5.7.1 Conduct work for airborne and ground-based sensors currently operating and under development. These sensors include, but are not limited to, the Differential Absorption Carbon Monoxide Measurements (DACOM) airborne instrument, the Diode Laser Hygrometer (DLH) airborne series of instruments, and the Carbon Cycle Column Radiometer (C3R) ground prototype instrument.

4.5.7.2 Manage laboratory organization and upkeep; conduct component specification and characterization; and coordinate instrument shipments.

4.5.7.3 Perform integration of work into the overall scientific mission being performed, including, but not limited to, conveying instrument performance and data to project scientists while on deployment.

4.5.7.4 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, those specified in Exhibit B.

4.5.8 Earth and Planetary Space Weather

The Contractor shall perform the following work in Earth and Planetary Space Weather activities including, but not limited to:

4.5.8.1 Maintain the functionality and operation of the real-time version of models and the interface and dissemination of the respective data products to the public.

4.5.8.2 Develop scripts for interfacing radiation model codes and algorithms to analyze calibration data and flight data.

4.5.8.3 Improve and develop coding for implementation of environmental, transport, and response models into new framework.

4.5.8.4 Perform verification and validation of models by setting up scripts to run test cases and providing analysis.

4.5.8.5 Provide on-site data collection and obtain instruments for use in calibration, integration, testing and flight.

4.5.8.6 Provide flight operational procedures for the instruments in electronic format.

4.5.8.7 Perform transport calculations for the Earth's atmosphere, Mars atmosphere and other surface environments, and compare results.

4.5.8.8 Investigate, quantify, and compare the effects of different ionizing radiation dosimetry physics packages available.

4.5.8.9 Perform benchmark studies to make comparisons, including but not limited to, particle flux, total dose, dose by particle, total dose equivalent, and dose equivalent by particle.

4.5.8.10 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Scripts and routines to implement improved environment transport and response models and to run verification and validation test cases
- Transport simulation output files, source codes, installation/build/make files, and corresponding plots
- Comparisons for the benchmark cases
- Report on instrument data analysis and data quality checks

4.5.9 Field Campaign Database Management

The Contractor shall perform the following work in Field Campaign Database Management activities including, but not limited to:

4.5.9.1 Provide data management activities during field campaigns, including but not limited to, setting up archives with file scanning software to assure that the submitted airborne data files comply with the required file format; maintaining the archive to ensure seamless data exchange among science team members as well as mission partners; generating standard and custom requested data merge products; providing public access to data after its release; transferring data to ASDC, and establishing a controlled access archive for intercomparison exercises and conducting analysis to assess measurement consistency.

4.5.9.2 Archive all airborne data generated from campaigns to include satellite, sonde, ground-based, model and correlative data sets required to facilitate research to meet field campaign science objectives.

4.5.9.3 Maintain and improve the data file scanning software to comply with the current version of the International Consortium for Atmospheric Research on Transport and Transformation (ICARTT) format.

4.5.9.4 Archive and maintain all file scanning and flight planning software at the ASDC repository in accordance with project configuration management and version control.

4.5.9.5 Provide products for comparison with aircraft data, particularly existing merge data products and develop a central webpage for all merge data products.

4.5.9.6 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.6 Cross-Cutting Science

The Cross-Cutting Science Technical Area includes, but is not limited to, clerical and professional administrative and technical services and management that span science disciplines to meet program, project and research and technology goals within and outside of NASA. The nature of the work requires effective planning and participation on multidisciplinary teams and effective planning and execution of work requirements. This work requires proficiency in administrative and professional skills including, but not limited to, program and project management; technical writing and editing; web design, video and graphics production and design; meeting and retreat facilitation; clerical and administrative analytics with a knowledge of standard business software applications and LaRC business practices; program analysis and control; proposal management and development; education and outreach; logistics management; and advanced technology and science methodology development, including software development. The Contractor shall perform the following work in cross-cutting science programs, projects, and activities including, but not limited to:

4.6.1 Science Communication

The Contractor shall perform the following work in Science Communication activities including, but not limited to:

4.6.1.1 Research and write news releases, fact sheets, video scripts, photo captions and releases, and articles for media consumption that are related to activities and research in the SD.

4.6.1.2 Post Government-approved items on the SD NASA web portal page and work with the NASA portal team to post Government-selected items.

4.6.1.3 Research content, write text and oversee production of video news releases, video b-roll, photography, animation, graphic illustrations, and provide on-site consultation on technical content to support television remote live shots and participate in local events.

4.6.1.4 Work with LaRC Public Affairs Office to respond to news media inquiries concerning the SD, help arrange interviews with LaRC personnel and provide requested media products, including but not limited to fact sheets, news releases, and other media products.

4.6.1.5 Provide feedback via email to LaRC personnel including but not limited to program/project personnel and senior staff on the daily record of news media outcomes as tracked by LaRC Public Affairs.

4.6.1.6 Maintain an awareness of news media options and target SD content as appropriate for such new media outlets including but not limited to blogs, Facebook, Twitter, and YouTube.

4.6.1.7 Provide technical writing support for internal SD communications including but not limited to the annual report, metrics report, and weekly key activities, as well as technical writing assistance to SD personnel to maintain, update and upgrade web pages containing research and public outreach content, and ensure that the pages meet NASA criteria for security and design.

4.6.1.8 Provide facilitation expertise for SD-related retreats as part of the SD's Communication Initiative, to assist SD management in strengthening management and communication skills contribute to more effective team within SD and better communicate with other directorates, team members, and stakeholders.

4.6.1.9 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- News releases, fact sheets, technical articles, tip sheets for conferences with major LaRC participation, key activities, videos, graphics, outreach materials, web pages, and the SD annual metrics report and yearbook
- Agendas, meeting notes, and final reports from retreat meetings.

4.6.2 Science Directorate Management

The Contractor shall perform the following work in Science Directorate Management activities including, but not limited to:

4.6.2.1 Prepare travel authorizations and vouchers (foreign, domestic, and Invitational) for NASA employees utilizing the NASA electronic travel system to initiate requests, make employees travel and lodging reservations and assist with preparation of travel vouchers.

4.6.2.2 Assist SD managers in monitoring travel budget forecasts and expenditures.

4.6.2.3 Make arrangements for visitors, both foreign and domestic, and complete all required documentation and communication with all NASA offices associated with approving/regulating visitors.

4.6.2.4 Prepare correspondence, presentations, forms and other administrative documents in accordance with NASA Correspondence Management and Communications Standards and Style, and Langley Office Correspondence Procedures guidelines.

4.6.2.5 Assist with the preparation of Technical Publication submittal and approval via the Langley electronic system.

4.6.2.6 Provide administrative support to include, but not be limited to, answer the telephone, receive/greet visitors, receive and respond to e-mails, set up meetings utilizing NASA's electronic calendar system, photocopy, metrics and annual report assistance, facsimile transmission, process incoming and outgoing mail, shipping and receiving, prepare citations and awards, initiate and submit computer orders, maintain and inventory all supplies, and file maintenance.

4.6.2.7 Make arrangements for on- and off-site meetings which shall include, but is not limited to, reserving the venue, ensuring all attendees are made aware of the agenda, and arranging for all meeting equipment.

4.6.2.8 Provide program analysis and control services to assigned technical projects/activities which shall include, but is not limited to, resources planning, budgeting, program control, analyses, documentation and reports on assigned projects.

4.6.2.9 Recommend fiscal budget and workforce resource requirements and allocations based on priorities and needs and controls expenditures.

4.6.2.10 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Completed budget formulation and execution actions per established Government budget processes, schedules and deadlines in Agency-provided formats.

4.6.3 Proposals

The Contractor shall perform the following work in Proposal activities including, but not limited to:

4.6.3.1 Manage the development of upcoming proposal efforts to ensure LaRC proposal process is followed, as well as team coordination of proposal activities with NASA proposal team partners from industry, academia and government.

4.6.3.2 Develop the concept and mission requirements, capture plans, threshold and baseline mission concept, instrument concept, tasks, milestones, progress updates, and preliminary cost estimate for the mission.

4.6.3.3 Develop tools, techniques and templates to facilitate the proposal development process (e.g., proposal outline and compliance matrix, storyboard development) based on lessons learned from previous proposal efforts, as well as facilitate formal review teams with senior and executive-level managers.

4.6.3.4 Perform designated proposal management functions, training, and team mentoring.

4.6.3.5 Develop compliant and persuasive proposals in alignment with Science Mission Directorate needs. Participate in the formulation and post-submittal phase of the proposals. Consult with proposal teams to develop technical strategies and solutions, and translate technical details into proposal content. Support the proposal team through the proposal development process: from kickoff; to section outlines; to initial drafts; and to finished proposal copy.

4.6.3.6 Assist science teams identify risks that need mitigation, create plans for maturing instruments for further testing, develop mission science requirements, science traceability matrix, and science value matrix, develop effective and persuasive sections, graphics and presentations and a reserve strategy to manage risks.

4.6.3.7 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Proposal development plans, schedules, and cost estimates

4.6.4 Earth Science Education

The Contractor shall perform the following work in Earth Science Education activities including, but not limited to:

4.6.4.1 Perform tasks associated with development and operation of education and outreach projects and activities related to NASA missions.

4.6.4.2 Provide support to include, but not be limited to, responding to electronic and voice requests and questions, preparing and sending mailings, conducting virtual presentations and Question and Answer sessions, and recording information in databases for educators participating in the education and outreach projects.

4.6.4.3 Maintain and update public websites containing information about the education and outreach projects as well as internal websites for use by teams, projects, and missions.

4.6.4.4 Develop and update unit and lesson plans and educational activities; populate and maintain a science glossary for an upper elementary level audience; and develop new media products for science education projects exploiting multimedia, social networking, mobile applications, telepresence, and other new media tools.

4.6.4.5 Provide planning and logistics support to conduct teacher workshops related to education and outreach projects and provide follow-up support to workshop alumni including, but not limited to, responding to questions, providing materials, and supporting educational research projects.

4.6.4.6 Attend local and regional and national meetings to present the education and outreach projects, as determined and agreed by the project team.

4.6.4.7 Support the implementation of the ozone garden at the Virginia Living Museum (VLM) and prepare research reports for the ozone garden project.

4.6.4.8 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Metrics of activities (presentations and web metrics) to be summarized for periodic NASA Headquarters (HQ) and SD reports
- Materials for teacher workshops, content and tools for project websites and printed project materials

4.6.5 DEVELOP National Program

The Contractor shall perform the following work in the DEVELOP National Program activities including, but not limited to:

4.6.5.1 Plan and organize national activities to include participation in relevant conferences, lead weekly National Program meetings, and deliver research results at diverse forums.

4.6.5.2 Mentor and guide interns throughout project execution; ensure NASA DEVELOP Program activities align with those of NASA's Applied Sciences Program.

4.6.5.3 Edit and proofread technical papers and abstracts for publication at scientific and public policy forums.

4.6.5.4 Provide science advisor support, generation of Program Plans, logistical support at solicitation panel reviews, and general program management support.

4.6.5.5 Provide general administrative support to SD at NASA LaRC including but not limited to meeting and conference planning.

4.6.5.6 Provide general administrative and financial services for the DEVELOP National Program; provide payment to student researchers, arrange travel, obtain supplies and equipment, and other related program activities.

4.6.5.7 Collaborate to integrate NASA space-based Earth observation sources into research projects; collect and analyze NASA and partner satellite and in situ data to conduct example rapid prototype projects that address a community concern and specific program elements.

4.6.5.8 Perform logistical and program management requirements for reviews and meetings.

4.6.5.9 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.6.6 Advanced Technology and Research

The Contractor shall perform the following work in Advanced Technology and Research activities, including, but not limited to:

4.6.6.1 Develop advanced technologies within projects, including but not limited to NASA's Internal Research And Development (IRAD) and Earth Science Technology Office (ESTO) projects, and new science methodologies within the Science Innovation Fund (SIF) and Research Opportunities in Space and Earth Sciences (ROSES) projects.

4.6.6.2 Assist the LaRC team in planning and readiness for all major reviews of the project.

4.6.6.3 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Software, in a publically releasable format with adequate instructions for compiling, installing, and testing.

4.7 Data Center

The ASDC is a multifunction organization serving both as a Distributed Active Archive Center (DAAC) under the Earth Science Distributed Information System (ESDIS) Project and as an Information Technology (IT) service provider for the SD. The primary responsibilities of the ASDC as a DAAC include ingest, archive, processing, distribution, and user support for a wide range of science data. Primary missions supported include, but are not limited to, Clouds and the Earth's Radiant Energy System (CERES), Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations (CALIPSO) and Multi-angle Imaging Spectro Radiometer (MISR). The primary responsibilities of the ASDC as an SD service provider include installation, hosting, administration, and user support of many shared SD IT resources. The ASDC also provides software engineering support both as a DAAC and as an SD service provider. The ASDC collaborates with a wide variety of organizations inside and outside of the Agency. The Contractor shall perform the following work in Data Center activities including, but not limited to:

4.7.1 ASDC Operations

The Contractor shall perform the following work in ASDC Operations activities including, but not limited to:

4.7.1.1 Provide ingest, archive, distribution, and data management services for satellite and data missions.

4.7.1.2 Provide data production support including, but not limited to, processing requests; work with data providers to generate metadata to provide supporting information required for the ASDC's data access systems; provide documentation of procedures and background information; and perform quality assurance functions.

4.7.1.3 Maintain existing data holdings and acquire new data holdings in the areas of Clouds, Aerosols, Radiation Budget, and Tropospheric Chemistry and other atmospheric science areas.

4.7.1.4 Provide support to science teams to add new data to existing project and mission holdings or to replace with reprocessed data products.

4.7.1.5 Provide data management support for ASDC users and customers.

4.7.1.6 Collaborate with instrument teams, ASDC Management, and others as required to ensure system upgrades and enhancements meet planned archival and distribution levels; to develop cost effective plans for migration of data holdings from current technology to new technology; and to develop tools and techniques to verify quality of data products.

4.7.1.7 Perform physical property management including but not limited to performing property custodian functions, space management of assets supporting property audits, and maintaining a current inventory of assigned property assets, record all maintenance actions taken on each piece of tagged equipment.

4.7.1.8 Maintain up-to-date data regarding systems, configurations, and interfaces to the Center and Agency databases.

4.7.1.9 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Report data production levels, additional reports as requested by ASDC Management, and internal schedules for ASDC managed processing and reprocessing activities.
- Report on data holdings by project: including, but not limited to each project's total data volume, number of granules, number of orders for each project, and total volume distributed.
- Report on data statistics including, but not limited to archive volume, total distribution, and non-science team distribution, as well as additional data operations status and statistics reports in response to ad hoc inquiries.

4.7.2 ASDC Engineering and Development

The Contractor shall perform the following work in ASDC Engineering and Development activities including, but not limited to:

4.7.2.1 Evolve the Government-designated systems, consistent with applicable Federal, NASA, LaRC and SD policies and practices.

4.7.2.2 Employ system engineering practices to the development and maintenance of ASDC software systems.

4.7.2.3 Work with other NASA contractors and government personnel to address and resolve issues relating to interoperability, compliance with policies and guidelines, system defects, and requirements relating to customer requirements.

4.7.2.4 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.7.3 Systems Engineering

The Contractor shall perform the following work in Systems Engineering activities, but not limited to:

4.7.3.1 Apply accepted industry standard Systems Engineering practices and tailor these practices to the requirements of the specific system development project.

4.7.3.2 Support management boards required for system engineering practices including documenting results.

4.7.3.3 Provide engineering assessments for the ASDC including providing trade-off analysis of the ASDC planning processes.

4.7.3.4 Perform Configuration and Risk Management.

4.7.3.5 Planning and Scheduling of Engineering Projects.

4.7.3.6 Provide Information Technology Security.

4.7.3.7 Develop systems and related components to support ongoing stewardship of assigned data products, and assets of ASDC and SCF.

4.7.3.8 Conduct analysis of systems of current and potential customers.

4.7.3.9 Design and develop systems and components in response to government requirements and integrate them into the system; test and evaluate systems and components and deploy systems and components.

4.7.3.10 Perform engineering support to operational systems.

4.7.3.11 Provide outreach, market research, , broad visibility of data holdings and services; promote access to and use of atmospheric science data by commercial customers and state and local governments as well as other Federal

agencies; participate in working groups; provide educational outreach support to atmospheric science missions.

4.7.3.12 Perform assistance in software development techniques and processes.

4.7.3.13 Provide assistance in evaluating scientific analysis tools, other clients, and applied math techniques to help estimate ASDC load and performance to be utilized as input to requirements for future improvements in data discovery, access, and understanding capabilities.

4.7.3.14 Provide expertise to the valuation, experimentation, and implementation of Esri which is a Geospatial Application Tool.

4.7.3.15 Develop and maintain an online application to support the DEVELOP Program's Student application process.

4.7.3.16 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Produce and maintain documentation for all software and hardware systems and ensure documentation remains current.
- Maintain digital library of documentation for all software and hardware systems.
- Maintain currency and accuracy of electronic Frequently Asked Questions.

4.7.4 System Administration

The Contractor shall perform the following work in System Administration activities including, but not limited to:

4.7.4.1 Work with other contractors and customers in addressing SD IT related user issues that fall outside the responsibility of other Center contractors including but not limited to specialized software support and connectivity support to SD managed assets.

4.7.4.2 Provide system administration to ASDC systems and peripherals and to users, both onsite and offsite and in field campaign or travel situations, consistent with Federal, NASA, Langley Research Center and SD policies and practices.

4.7.4.3 Perform standard, industry-practice system administration functions for assigned systems.

4.7.4.4 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Records of all network services running from a machine and who turned them on and when

- Records of which applications are installed on each workstation and what license and registration information is used
- Report on the day-to-day activities related to IT Security; maintain detailed knowledge of IT Security policy and practices relevant to systems at LaRC and recommendations as to the means for implementing policies

4.7.5 Travel

The Contractor shall perform the following work in Travel activities including, but not limited to:

4.7.5.1 Develop outreach materials and support outreach activities to educate scientists and the general public about the ASDC.

4.7.5.2 Participate in working groups to provide outreach through the development of materials and the participation in related events.

4.7.5.3 Participate in and provide support for science team meetings, or other activities in support of the data providers and educational outreach.

4.7.5.4 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Trip reports of travel learnings and experience

4.8 Engineering for Science Technology and Missions

The Engineering for Science Technology and Missions Technical Area includes but is not limited to, application of science, mathematics and engineering disciplines for the design, development, integration, and operation of small to very large complex equipment and processes to meet program and project goals within and outside of NASA. The nature of the work requires effective participation in highly integrated multidisciplinary development teams in compliance with established policies and work instructions. This work requires proficiency in technical skills including, but not limited to, mechanical and mechanism design, simulation, analysis, and drafting; structural mechanics analysis (static, dynamic, linear, non-linear); structural dynamics analysis; manufacturing engineering and methodologies; thermal and fluid systems design and analysis (e.g., steady state, transient, passive thermal, active thermal); optical, opto-mechanical and electromagnetic design and analysis; electrical and electronics design and analysis; measurement system development (passive and active, including but not limited to radiance and lidar systems); software design, verification, and control; development and implementation of production, assembly, test, integration, and operation plans. The facilities include, but are not limited to: Building 1202 Research Laboratory; buildings 1209, 1250, 1299, and 1267; 1250 Test Laboratories. The Contractor shall perform the following work in Engineering for Science Technology and Missions activities including, but not limited to:

4.8.1 Software and Algorithm Development

The Contractor shall perform the following work in Software and Algorithm Development activities including, but not limited to:

4.8.1.1 Develop Graphical User Interfaces (GUI) for mission and project simulators for all phases of requirements and support development of a preliminary software (SW) concept of operations and supporting SW requirements in preparation for reviews. Develop optimized SW architecture that can be used to implement the defined SW requirements.

4.8.1.2 Support maintenance of the SW concept of operations, requirements, and architecture.

4.8.1.3 Develop the preliminary embedded software design in preparation for reviews. Develop initial embedded software based on the preliminary design. Support integration, testing, verification, and validation of the GUI, embedded software, flight software, and Field Programmable Gate Arrays (FPGA) code at the end of each build cycle.

4.8.1.4 Provide engineering and scientific expertise in the development and implementation of advanced signal processing algorithms for projects.

4.8.1.5 Enhance the precision of the computed products.

4.8.1.6 Develop hardware implementation.

4.8.1.7 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- All documentation in support of the preliminary design in preparation for all Reviews
- Documentation for all modules

4.8.2 Robotic Testbed Sensor Validation and Algorithm Development

The Contractor shall perform the following work in Robotic Testbed Sensor Validation and Algorithm Development activities including, but not limited to:

4.8.2.1 Provide mechanical, electrical, and software design for the development of robots and other intelligent electromechanical systems.

4.8.2.2 Perform architecture definition, electrical and mechanical design, software development, integration, fabrication, and testing.

4.8.2.3 Develop real-time algorithms for embedded systems using real-time operating systems.

4.8.2.4 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Reports describing the suitability of new technology or simulations results

4.8.3 Simulator Systems Development

The Contractor shall perform the following work in Simulator Systems Development activities including, but not limited to:

4.8.3.1 Perform design, development, fabrication, assembly, test, and deliver simulators for integration in Flight Vehicles.

4.8.3.2 Implement mission-specific simulator design and development with the intent to meet the operational and performance requirements specified by the Flight Vehicle subsystem.

4.8.3.3 Manage, formulate and track simulator requirements, requirements verification, and validation activities.

4.8.3.4 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.8.4 Instrument Scientist Activities

The Contractor shall perform the following work in Instrument Scientist activities including, but not limited to:

4.8.4.1 Provide technical assistance during the Instrument environmental testing and Calibration/Validation activities including but not limited to the Cross-Track Infrared Sounder (CrIS).

4.8.4.2 Evaluate the on-orbit radiometric and spectral performance of instruments including but not limited to the CrIS F1; evaluate the accuracy of the algorithms used in flight and ground software; and evaluate the radiometric and spectral performance of instruments.

4.8.4.3 Develop a theoretical model to simulate the ringing seen in calibrated instruments including but not limited to the F1 spectra.

4.8.4.4 Serve as on-site science observer at the designated facility during testing.

4.8.4.5 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.8.5 Engineering Technical Management

The Contractor shall perform the following work in Engineering Technical Management activities including, but not limited to:

4.8.5.1 Perform systems analyses, provide technical management services to NASA's programs including but not limited to the United States Group on Earth Observations (USGEO), and maintain the Action Tracking Tools, provide administrative and outreach functions, conduct data acquisition planning for projects, develop and integrate the Working Group on Information Systems and Services Integrated Catalog and provide data management for large datasets. All of these are activities that support programs including but not limited to the Committee on Earth Observation Satellites (CEOS).

4.8.5.2 Develop enhancements and gap analysis tools for the management information databases. These tools shall consider connections to the CERES Ocean Validation Experiment (COVE) tool, detail user-defined gap studies, and links to data products.

4.8.5.3 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Provide recommendations and assessment of the program plans

4.8.6 Electronic Parts and Component Engineering

The Contractor shall perform the following work in Electronic Parts and Component Engineering activities including, but not limited to:

4.8.6.1 Provide technical expertise in Electrical, Electronic, and Electromechanical (EEE) activities including selection of quality parts for space and high reliability products.

4.8.6.2 Research EEE parts and provide recommendations on their use for the intended environment and provide designs to mitigate any risk associated with the use of EEE parts.

4.8.6.3 Make recommendations for purchase and costing analysis and performance trade-offs. Analysis tasks shall include but not be limited to Government-Industry Data Exchange Program (GIDEP) search alerts and recommendations as well as other environmental and quality component issues.

4.8.6.4 Provide technical analysis and recommendations for existing parts in payloads, as well as possible new EEE activities including selection of new hi-reliability parts for any additional instrument modifications or new designs.

4.8.6.5 Provide input for improving operations in the area of receiving, inspection and bonded stores for projects past, present and forecasting needs for new project requirements in early life cycle phases.

4.8.6.6 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Reports, Parts Plans, Work Break Down analysis, Parts Lists, Component and Circuit Analysis

4.8.7 Engineering Training

The Contractor shall perform the following work in Engineering Training activities including, but not limited to:

4.8.7.1 Develop training materials to introduce new employees to the engineering for science technology and missions development process, specifically as applied to Science Mission activities.

4.8.7.2 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Training materials

4.8.8 Mission Operations Management

The Contractor shall perform the following work in Mission Operations Management activities including, but not limited to:

4.8.8.1 Develop and implement the Mission Operations Plan at facilities, to include support of integration and test activities for projects including but not limited to Mars Science Laboratory Entry, Descent, and Landing Instrument (MEDLI).

4.8.8.2 Participate in and support technical and operations interchange meetings with NASA, Jet Propulsion Lab (JPL), and other Contractors and government agencies.

4.8.8.3 Review mission operations procedures and data and provide analyses to assess the impact of mission operations on mission success.

4.8.8.4 Develop plans for data archival.

4.8.8.5 Deliverables will be specified in each TDN or Task Order and may include but not be limited to those specified in Exhibit B.

4.8.9 Active Measurement Systems Development

The Contractor shall perform the following work in Active Measurement Systems Development activities including, but not limited to:

4.8.9.1 Develop advanced lidar concepts for the development of advanced laser and lidar systems, and advanced signal processing algorithms for Earth, Planetary and Exploration science applications.

4.8.9.2 Analyze and interpret the strengths and limitations of lidar systems through experimental data analysis and develop new signal processing algorithms; report on any systematic errors or observations discovered about the sensor.

4.8.9.3 Analyze differential absorption Intensity-Modulated Continuous-Wave (IM-CW) lidar data to determine column amounts, ranging capabilities, and the impacts of clouds on column estimates; then compare the lidar data with in situ and other sensor observations.

4.8.9.4 Complete design-to-fabrication solutions, and build-to-print prototyping of NASA-provided designs.

4.8.9.5 Design, fabricate, integrate, implement, and test active measurement systems including but not limited to Doppler lidar for future landing missions; develop models and lidar data analysis software for analyzing different lidar systems and predicting their performance in achieving specified requirements for landing missions; develop lidar models and perform design and performance analyses for candidate system concepts; develop new lidar systems with improved performance while achieving decreased size, increased efficiency, and decreased operating costs; participate in space flight qualification activities for landing lidar sensors.

4.8.9.6 Develop pre/post processing and system interface components including, but not limited to, front-end data collection from the system analog to digital converters, application of a window function, fourier transformation of the windowed function, magnitude detection, ratio application, and peak detection.

4.8.9.7 Develop hardware and software for data acquisition and real-time analysis systems for atmospheric science investigations; develop, operate, and maintain lasers, detectors, control systems, and other elements of integrated remote sensing systems.

4.8.9.8 Develop technologies leading to space-qualifiable lasers by investigating the areas of material out gassing and contamination, radiation damage, vibration resistance, and vacuum operation.

4.8.9.9 Develop instrument performance models, instrument design and development, aircraft-specific payload design and assembly, aircraft integration, data collection and analysis, and hardware development and risk reduction activities. Provide on-site operations, systems, networks, and configuration support for field campaigns and testing.

4.8.9.10 Document the analysis and interpretations of science data in informal reports, papers, and journal articles.

4.8.9.11 Integrate systems into ground-based facilities and test at Langley and other mission sites.

4.8.9.12 Perform mechanical design, analyses of engineering designs, models of transmitters, receiver assemblies, telescopes, and prototyping of aircraft-related hardware required by missions, projects and experiments; perform mechanical design, thermal design, and robust packaging design for continuous-wave and pulsed, diode-pumped, lasers, telescopes, wavelength control hardware, and integrated lidar structure.

4.8.9.13 Perform frequency up-conversion device research and development to include but not be limited to, theoretical calculations, computer modeling and simulation, and perform laboratory experiments in the areas of solid state lasers, non-linear devices, optics alignment and optimization, and performance characterization for the research.

4.8.9.14 Perform research and development in the areas of spectroscopic measurements, modeling and data analysis, multi-disciplinary system design, analysis, simulation and prototyping, and laser design for ground-based, airborne and space-borne laser/lidar remote sensing, mid-infrared solid state laser research and other related technologies.

4.8.9.15 Perform optical design, electrical design, and laser operation optimization for continuous-wave and pulsed solid-state lasers and nonlinear optics devices.

4.8.9.16 Design, integrate, implement, and test lidar systems; design and perform experiments involving lasers and lidar systems demonstrating their performance.

4.8.9.17 Develop and validate measurement technologies, techniques and mission concepts for missions and projects, to include but not be limited to development of software for conducting simulations, analytical studies, and data reduction associated with atmospheric remote sensing projects.

4.8.9.18 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Analysis, material certifications, and design drawings
- Provide developed models and performance analyses
- Materials, fabrications, and prototypes for aircraft-related components
- Source code
- Design data for contractor-led design tasks; including but not limited to drawings and supporting analyses
- Design drawings, analysis and hardware of lasers and components
- Documentation and evaluation data on laser performance and resonator design
- Provide an overview of the design and proposed installation approach
- Resolution of all systems and configuration problems

- Updates of system and standard products

4.8.10 Passive Measurement Systems Development

The Contractor shall perform the following work in Passive Measurement Systems Development activities including, but not limited to:

4.8.10.1 Develop and integrate a Measurement facility (including but not limited to the Far-Infra-red (IR) Bidirectional Reflectance Distribution Function), to improve LaRC's ability to compare blackbody coatings for selection and screening, and improve the turnaround times for exploratory investigations and measurement repeatability.

4.8.10.2 Perform required tests and document test results.

4.8.10.3 Develop required instrument models for the passive Instruments.

4.8.10.4 Develop the mission level requirements document, recording the technology readiness levels of any new technologies and general support of the system engineering functions.

4.8.10.5 Develop and refine staffing profiles, long range schedules, internal review requirements, levels of mission, measurement requirements, technical allocations document, support preparation and concept reviews.

4.8.10.6 Conduct passive measurement sensitivity analysis, including but not limited to the Climate Absolute Radiance and Refractivity Observatory (CLARREO) blackbody emissivity analysis for the Calibrated Observations of Radiance Spectra in the Far-Infrared (CORSAIR) variable temperature blackbody, ambient temperature blackbody, and cold temperature blackbody.

4.8.10.7 Fabricate and test passive measurement system components including but not limited to single patches and metamaterial arrays.

4.8.10.8 Deliverables will be specified in each TDN or Task Order and may include the following but not be limited to those specified in Exhibit B:

- Passive measurement system components
- Instrument models and test reports.

4.9 Science Flight Project Management

The Science Flight Project Management Technical Area provides support for LaRC Flight Projects in the areas of Project Management; Systems Engineering; and hardware and software design, analysis, development, integration, test, and verification. Project Management includes but is not limited to, developing or reviewing documents specified in NPR 7120.5; risk assessment and analysis; schedule assessment and analysis; and

technical editing services. Systems engineering includes, but is not limited to, requirements development, management, and documentation; system architecture development and analysis; and verification and validation. Hardware and software includes but is not limited to support for a variety of instrumentation as well as aircraft, spacecraft, or other platforms where instrumentation is installed. The Contractor shall perform the following work in Science Flight Project Management activities including, but not limited to:

4.9.1 Instrument Development

The Contractor shall perform the following work in Instrument Development activities including, but not limited to:

4.9.1.1 Design, analyze, fabricate, assemble, test, and calibrate equipment for mission instruments and Ground Support Equipment (GSE) planned for a designated satellite (or other platform).

4.9.4.2 Design, integrate, and test specified flight hardware and GSE.

4.9.1.3 Examine and assess the instrument's electrical and software design, subsystem, components, schematics, tests, and verification procedures to objectively confirm and assure that the implemented design meets the operational and performance requirements.

4.9.1.4 Perform, formulate, manage and track instrument and GSE verification and validation activities and evaluate the submitted verification products, verification data, and spacecraft (or other platform) interface control documentation.

4.9.1.5 Provide systems engineering expertise in the development of hardware and software requirements; define the baseline and perform updates to the physical and functional interface; develop the interface control documents; provide assessments and evaluations of proposed revisions to the interface control documents and other satellite controlling systems engineering documentation; provide updates of spacecraft interface control documentation; develop and prepare materials and presentations in support of all reviews.

4.9.1.6 Develop and maintain the system requirements and the architecture of Interface Adaptor Modules (IAM); perform IAM integration and testing, including integration of IAM boards and box-level acceptance testing.

4.9.1.7 Perform assessment of instrument functional and performance data including, but not limited to data obtained during instrument environmental testing, during instrument calibration, instrument vacuum testing, performance regression testing, and any performance issues identified from such activities.

4.9.1.8 Establish, plan and develop documentation for the spacecraft (or other platform) integration and test campaign.

4.9.1.9 Perform cost, programmatic and engineering trades analyses utilizing historical project data to facilitate development, acquisition, and deployment of instruments/missions.

4.9.1.10 Design and develop power supply systems.

4.9.1.11 Provide EEE parts specification and market research support; research EEE parts availability based on the guidance and recommendations of project engineering.

4.9.1.12 Provide systems engineering technical input as needed to rapidly address questions or issues that arise concerning the design, implementation, and/or performance.

4.9.1.13 Plan and perform quarterly maintenance testing of the flight instruments according to established processes and procedures; maintain and certify GSE; update legacy test plans and procedures to comply with current NASA and NASA LaRC Center processes and procedures and identify areas where processes and procedures can be improved.

4.9.1.14 Provide flight software programming for the project flight software and GSE, including, but not limited to, programming for embedded systems in the flight hardware, ground test equipment, instrument mockups, update all documentation, and execute software.

4.9.1.15 Review and identify any applicable International Space Station (ISS) requirements; maintain the requirements documents and database.

4.9.1.16 Provide project management support to the project teams; develop and review project products including but not limited to plans, procedures, agreements, briefings, schedules, cost estimates, integrated baseline, risk items, and Earned Value Management reports; participate in team meetings.

4.9.1.17 Review all documentation for content flow and appropriate grammatical application and perform technical editing of all project documents for all reviews, including but not limited to subsystem and lifecycle reviews.

4.9.4.18 Update schedule risk analysis for system level reviews; develop monthly schedule risk analysis reports providing the project with analysis for forward planning; provide "threat assessment" as part of the project risk management process.

4.9.4.19 Conduct Earned Value Management system operations, including but not limited to data entry and manipulation, report building, and execution.

4.9.4.20 Initiate meetings for planning the retreats, interviews, documented agendas, on-site facilitation, and a final report of outcomes.

4.9.4.21 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Documented Agendas, meeting notes, and final report of outcomes.

4.9.2 Instrument Requirements Development

The Contractor shall perform the following work in Instrument Requirements Development activities including, but not limited to:

4.9.2.1 Support technical and science requirements development of instruments for use on future satellites (or other platforms): review and evaluate pre-defined instrument and operations requirements, and contribute technical insight to the development of new requirements specific to the instrument and its operation.

4.9.2.2 Support design, analysis, and calibration tasks for the instrument and GSE planned for designated satellites (or other platforms).

4.9.2.3 Examine and assess the instrument's electrical and software design, subsystem, components, schematics, tests, and verification procedures to objectively confirm and assure that the implemented design meets the operational and performance requirements.

4.9.2.4 Formulate, manage and track instrument and GSE verification and validation activities and evaluate the submitted verification products, verification data, and spacecraft (or other platform) interface control documentation.

4.9.2.5 Perform the systems engineering services required for successive updating of the Interface Requirements Document (IRD), Environmental Requirements Document (ERD), and Mission Requirements Document (MRD), as well as populating and maintaining the Mission requirements database with the developed and matured mission requirements.

4.9.2.6 Perform the project management tasks required to develop input documents for the project plan and review provided documents.

4.9.2.7 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- All updates to required reviews and documentation

4.9.3 Instrument Documentation Development and Analysis

The Contractor shall perform the following work in Instrument Documentation Development and Analysis activities including, but not limited to:

4.9.3.1 Provide project management and system engineering expertise to projects to accommodate all reviews and develop documentation, plans, and schedules for the implementation and integration of assigned projects.

4.9.3.2 Provide analysis of and recommendations to address the risk areas, mitigation steps, risk posture, schedule, and mitigation strategies.

4.9.3.3 Analyze, update and maintain the project Implementation Plan, all documentation, including but not limited to, Education and Public Outreach content; provide all changes and improvements to reflect current project investments.

4.9.3.4 Support project outreach activities by developing posters and displays for use in Center tours; providing logistical support for tours.

4.9.3.5 Develop the project closeout report.

4.9.3.6 Develop list of instrument development calibration and integration test work flow documents, as well as final report.

4.9.3.7 Deliverables will be specified in each TDN or Task Order and may include but not be limited to, the following as well as those specified in Exhibit B:

- Flight software documentation
- All completed project management documents

5.0 Indefinite Delivery/Indefinite Quantity (IDIQ)

NASA anticipates that during the life of the contract additional requirements, which are within the general scope of this contract but not specifically identified under Sections 3.0 and 4.0 above, will arise. To accomplish the additional requirements, the CO may issue cost plus award fee TOs Contract Line Item Number (CLIN) 2 IDIQ until 7/31/2014 and cost plus fixed fee TOs (CLIN 4) IDIQ effective 8/1/2014 in accordance with NASA Far Supplement (NFS) 1852.216-80 "Task Ordering Procedure" identified in Section H of the contract.

Attachments:
1. Acronym List

Acronym	Definition
ASDC	Atmospheric Science Data Center
C3R	Carbon Cycle Column Radiometer
CALIPSO	Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations
CATS	Cloud-Aerosol Transport System
CDRs	Climate Data Records
CEOS	Committee on Earth Observation Satellites
CERES	Clouds and the Earth's Radiant Energy System
CLARREO	Climate Absolute Radiance and Refractivity Observatory
CO	Contracting Officer
CO2	Carbon Dioxide
COR	Contracting Officer's Representative
CORSAIR	Calibrated Observations of Radiance Spectra in the Far-Infrared
COVE	CERES Ocean Validation Experiment
CrIS	Cross-Tracked Infrared Sounder
DAAC	Distributed Active Archive Center
DACOM	Differential Absorption Carbon Monoxide Measurements
	Deriving Information on Surface Conditions
	from Column and Vertically Resolved
DISCOVER-A	Observations Relevant to Air Quality
DLH	Diode Laser Hygrometer
EEE	Electrical, Electronic and Electromechanical
ERD	Environmental Requirements Document
ESDIS	Earth Science Distributed Information System
ESTO	Earth Science Technology Office
FIPS	Federal Information Processing Standards
FPGA	Field Programmable Gate Array
GIDEP	Government-Industry Data Exchange Program
GSE	Ground Support Equipment
GUI	Graphical User Interface
HQ	Headquarters
HSRL	High Spectral Resolution Lidar
IAM	Interface Adaptor Module
ICARTT	International Consortium for Atmospheric Research on Transport and Transformation
IDIQ	Indefinite Delivery/Indefinite Quanity
IM-CW	Intensity-Modulated Continuous-Wave
IR	Infra-red
IRAD	Internal Research And Development
IRD	Interface Requirements Document
ISS	International Space Station
IT	Information Technology
ITS	Information Technology Security
JPL	Jet Propulsion Lab

LaRC	Langley Research Center
MEDLI	Mars Science Laboratory Entry, Descent, and Landing Instrument
MISR	Multi-Angle Imaging Spectro Radiometer
MMF	Multi-scale Modeling Framework
MRD	Mission Requirements Document
NAIRAS	Nowcast of Atmospheric Ionizing Radiation System
NASA	National Aeronautics and Space Administration
NFS	NASA FAR (Federal Acquisition Regulation) Supplement
NODIS	NASA Online Directives Information System
NPR	NASA Procedural Requirement
RaD-X	Radiation Dosimetry Experiment
REVEX	CNES Annual EXploitation REView
ROSES	Research Opportunities in Space and Earth Sciences
RSP	Remote Scanning Polarimeter
SAGE	Stratospheric Aerosol and Gas Experiment
SCF	Science Computing Facility
SD	Science Directorate
SIF	Science Innovation Fund
SOW	Statement Of Work
SRB	Surface Radiation Budget
SW	Software
TDN	Technical Direction Notice
TEMPO	Tropospheric Emissions: Monitoring of Pollution
TOA	Top-of-Atmosphere
TOMS	Task Ordering Management System
TOs	Task Orders
TPOCs	Technical Points of Contact
USGEO	United States Group on Earth Observations
UV	Ultra Violet
VLM	Virginia Living Museum

CONTRACT DOCUMENTATION REQUIREMENTS

DOCUMENTATION PREPARATION/SUBMISSION INSTRUCTIONS

Contract documentation requirements are separated into two sections. Section I includes standard requirements and Section II includes documentation requirements that will be tailored during contract performance through technical direction or task order issuance.

Section I: Standard Contract Documentation Requirements

A. Initial Baseline Financial Management Report (CLIN 3)

a) The Contractor shall prepare a time-phased Baseline Financial Management Report, detailing by month how it plans to incur costs for the base period of performance utilizing the NASA Form 533Q format. The Contractor shall prepare and submit the report in accordance with instructions set forth on the reverse side of the 533Q Form and NASA Procedural Requirements (NPR) 9501.2E, NASA Contractor Financial Management Reporting. The Contractor shall submit the initial 533Q within 30 working days after the effective date of contract.

b) The Contractor shall submit a revised Baseline Financial Management Report each time a contract modification is executed which increases or decreases the contract estimated cost, for a reason other than an overrun. The report shall not be revised to include overrun costs.

c) The minimum reporting categories indicated below shall be included in column 6 of this report.

- Direct Labor Hours
  - Scientist
  - Engineer
  - Technician
  - Other Direct Labor (ODL)
- Direct Labor Dollars
  - Scientist
  - Engineer
  - Technician
  - Other Direct Labor (ODL)
- Overhead(s)
- Subcontract (to include vendor name)
- Material
- Other Direct Cost
- Travel Costs/Expenses
- G&A
- Total Estimated Cost
- Total Estimated Fee
- Total Estimated Cost Plus Fee

B. Monthly Financial Management Report (CLINS 2, 3, and 4)

1. The Contractor shall submit a monthly financial management report, via email as a Microsoft Excel 2007 or pdf document, as provided by the NFS clause 1852.242-73, NASA Financial Management Reporting NASA Procedural Requirements (NPR) 9501.2E, NASA Contractor Financial Management Reporting. This report shall be submitted utilizing NASA Form 533M, Monthly Contractor Financial Management Report, in accordance with submission instructions contained on the reverse side of the form.

2. For this contract, a 533M shall be provided for the levels indicated below:

a. Each Authorized Task/Technical Direction Notice (TDN)
- Total for each task order/TDN for its inception date
- Subtotal for each calendar year (e.g. 11/1/2010 – 10/31/2011)

b. Contract Total. (Column 9b shall reflect total estimated cost of $# plus award fee of $# or fixed fee if applicable (TDN)).

c. It is NASA's goal to improve the timeliness for reporting financial data. The Contractor shall submit the NF 533M **not later than the 10th working day following the close of the Contractor's accounting period being reported.** Timeliness of financial reporting will be evaluated as part of the annual performance evaluation.

d. It is NASA's goal to improve the integrity of its financial data. Since NASA uses the Contractor's estimate for the current month (column 8a of the 533M) as accrued costs in its monthly financial statements, it is important that this estimate be your best projection of the actual costs to be reported in column 7a of the subsequent month's 533M.

e. For this contract, a 533M for each authorized cost reimbursement task order or TDN shall be provided. If specified in the Task Order or TDN, the Contractor shall report costs by Government WBS identifier (number).

Therefore, each NF533M shall include a narrative explanation for variances exceeding +-10 percent between estimated dollars shown in the prior month and actual dollars shown in the current month at the total contract level. (For example, the estimated dollars shown for June in column 8a. in the May 533M and the actual June dollars shown in column 7a. in the June 533M.) Accuracy of financial reporting will be evaluated as part of the annual performance evaluation.

3. The minimum reporting categories shall be included in column 6 of this report and shall include:

- Direct Labor Hours
  - Scientist
  - Engineer
  - Technician
  - Other Direct Labor (ODL)
- Direct Labor Dollars
  - Scientist
  - Engineer
  - Technician
  - Other Direct Labor (ODL)

- Overhead(s)
- Subcontract (to include vendor name)
- Material
- Other Direct Cost
- Travel Costs/Expenses
- G&A
- Total Estimated Cost
- Total Estimated Fee
- Total Estimated Cost Plus Fee

Note: NPR 9501.2D NASA Financial Management Report is located at the NODIS website: http://nodis3.gsfc.nasa.gov/main_lib.html

C. Monthly Progress Report -- The Contractor shall submit a monthly progress report summarizing work progress, manpower utilization for assigned work, and material expenditures, via email, in accordance with the requirements of each task order or TDN. This report shall be submitted within 10 operating days following the end of the reporting period.

D. Final Reports -- Each task order or TDN may require the Contractor to submit a final report, either formal or informal, which documents and summarizes the results. When a formal final Contractor report is required, it shall be submitted in accordance with the instructions contained in NASA FAR Supplement clause 1852.235-73 Final Scientific and Technical Reports. The specified number of approval copies shall be submitted within the time specified in the task orders or TDN.

E. Safety Reports -- The Contractor shall submit safety reports to the LaRC Safety and Mission Assurance Office. These reports shall be submitted on a quarterly basis if the period of performance exceeds ninety days. If the period of performance is less than ninety days, the Contractor shall submit a single report upon completion of on-site work. The Safety Report shall include the hours worked on the contract and the number of fatalities, lost time cases, OSHA recordable incidents and first aid cases which have occurred during the past quarter (if less than ninety days, during the contract's period of performance). NOTE: The NASA LaRC Safety and Mission Assurance Office (SMAO) has developed a web-based system entitled Contractor Monthly Accident Reporting (CMAR) located at http://cmar.larc.nasa.gov/login.cfm If you choose to submit your information electronically via CMAR, no additional hard-copy reports are required. Please contact the responsible NASA official identified at the site for additional information regarding access to the system.

F. Notice of Violation Response -- The Contractor shall respond to any Notice of Violation (NOV) issued for safety violations to the prime itself or its' subcontractors within three working days of issuance. The response should include cause for violation; mitigation of impact, if applicable; planned prevention of recurrence. Response shall be submitted to the issuer of the NOV.

G. Information Technology (IT) Security Plan - The Contractor shall submit the IT Security Plan required by contract clause NFS 1852.204-76 Security Requirements for Unclassified Information Technology Resources for Contracting Officer approval no later than 30 days after effective date of the contract.

H. Annual IT Security Training Report - The purpose of this report is to obtain confirmation that IT security training for contractor employees required under paragraph (c) of NFS clause 1852.204-76 Security Requirements for Unclassified Information Technology Resources, has been completed by all individuals required to do so. NASA requires that this annual training be completed by 100% of the appropriate employees no later than June 30 of each year. Accordingly, a report that includes the information listed below shall be submitted to the Contracting Officer no later than June 30 of each calendar year, so long as the period of performance of the contract has not expired prior to June 30th.

Report Content: (1) the number of employees requiring IT security training in accordance with the contract clause (i.e., in accordance with NPR 2810.1A Security of Information Technology, which requires such training for all "employees who have access to NASA computer systems and networks that process, store, or transmit information"); (2) the number of those employees in item (1) that have completed the annual training as of June 30th; (3) whether the NASA on-line training system was used (use of the NASA on-line system is optional); and (4) a plan of action with milestones to reach 100% in item (2) if that level has not been achieved by June 30th.

I. RESERVED

J. RESERVED

K. NASA Property in the Custody of Contractors (NASA FORM (NF)1018) -- The Contractor shall submit the NF 1018 no later than October 15th of each year in accordance with the Section I, NFS clause entitled 1852.245-73 Financial Reporting of NASA Property in the Custody of Contractors. The Contractor shall maintain a property control plan and update as necessary.

L. Documentation for Transferring Property to the Government
It is not the intent of the Government for the Contractor to acquire property, titled to the Government, as a direct cost to the contract however, in the event that it is necessary and in accordance with the NFS clause 1852.245-71, Installation- Provided Government Property clause of this contract, accountability for that property which is acquired for the Government under this contract shall be passed to the Government using the following procedure:

The transfer of accountability shall be initiated by the Contractor submitting a Requisition and Invoice/Shipping Document, DD Form 1149, accompanied by a copy of the Contractor's applicable purchasing and receipt document for the property. The Contractor shall insert both the Contractor's Subcontract/ Purchase Order number and the Government contract number on the DD Form 1149 under the Federal Stock Number, Description, and Coding of Material and/or Services block. For purchases of supplies and materials, this document shall be submitted within 30 days after the end of each calendar-year quarter (that is, not later than January 30, April 30, July 30, and October 30). For equipment purchases, the DD 1149 shall be submitted within five workdays after acceptance of each item of equipment by the Contractor. Receipt by the Contractor of a copy of the DD Form 1149 signed by the Government relieves the Contractor of accountability for the property specified on that form.

M. Quality Plan -- Within 30 calendar days after the effective date of the contract, the Contractor shall submit a quality plan that specifies which procedures and associated resources shall be applied by whom and when to a specific project, product or process in order to

accomplish contractual requirements. The plan and subsequent revisions will be reviewed and accepted by the Contracting Officer or the designated representative.

N. Quality System Documents (ISO 9001) -- The Contractor shall submit the following ISO-compliant documents in accordance with **H.15**, Quality Management System Certification/Registration Requirements or **H.15**, ISO 9001 Certification/Registration Requirements Regarding the Offeror's Quality Management System, whichever applies, no later than nine months from the effective date of contract:

1. Quality System Manual

2. Quality System Procedures - These procedures shall address:

(1) Contract and subcontract management, (2) customer requirement review and execution, (3) task management, including work order generation and processing, (4) document control, (5) handling of customer supplied product, (6) corrective, preventive, and continuing improvement action systems, (7) training of employees, and (8) customer satisfaction/performance measurement.

O. Federal Contractor Veterans Employment Report -- In compliance with Clause 52.222-37, Employment Reports on Special Disabled Veterans, Veterans of the Vietnam Era, and Other Eligible Veterans, the Contractor shall submit the Federal Contractor Veterans Employment Reports (VETS-100) as required by this clause.

P. Evidence of Insurance -- The Contractor shall submit evidence of the insurance coverage, required by the Section H, NFS Clause 1852.228-75 Minimum Insurance Coverage, (i.e., a Certificate of Insurance or other confirmation), to the Contracting Officer prior to performing under this contract. The Contractor shall also present such evidence to the Contracting Officer prior to commencement of performance under any options exercised, if applicable.

Q. Interim patent rights report - After the first anniversary date of the contract, the Contractor shall submit an annual list of all subject inventions to be disclosed as set forth in FAR 52.227-11 Patent Rights--Retention by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). This report is due by March 31 of each year.

R. Final patent rights report - The Contractor shall submit a listing of all subject inventions or certify that there were none as set forth in FAR 52.227-11 Patent Rights--Ownership by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). This report is due prior to contract closeout.

S. Invention disclosure reporting - The Contractor shall disclose each subject invention under the contract as set forth in FAR 52.227-11 Patent Rights—Ownership by the Contractor (Short Form) (as modified by 1852.227-11 Patent Rights--Retention by the Contractor (Short Form)). The electronic or paper version of NASA Form 1679, Disclosure of Invention and New Technology (Including Software), may be used for this reporting. Both the electronic and paper versions of this form may be accessed at http://invention.nasa.gov. Disclosures are required within two months after the inventor discloses it in writing to Contractor personnel who are responsible for patent matters.

T. On and Near-Site Staffing Report - The contractor shall submit a report which includes the number of on-site and near-site Work Year Equivalents (WYE's) performing work on the

contract, broken down by skill category. An initial report shall be submitted within 30 days from the effective date of the contract. Subsequent updated reports are due quarterly, on January 1, April 1, July 1 and October 1 of each year.

These reports shall be e-mailed to the following: larc-dl-contractorwye@mail.nasa.gov

The subject line for the e-mail should be "Contractor WYE".

"On-site" WYE's include the time worked by prime contractor and subcontractor employees on this contract whose primary duty station is on-site at Langley Research Center, whether such employees charge direct or indirect in the contractor's or subcontractor's accounting systems (e.g., management and administrative staff may charge their time to an "indirect" account, but the time worked by such individuals shall still be counted in the on-site WYE).

"Near-site" WYE's include the time worked by prime contractor and subcontractor employees on this contract whose primary duty station is within 50 miles of LaRC, whether such employees charge direct or indirect in the contractor's or subcontractor's accounting systems. Work performed on local college campuses shall not be considered "near site" WYE's.

The contractor shall use the number of hours in its productive work year to compute the number of WYE's to be reported.

The contractor shall break out the On-site and Near-site WYE by skill category using the following categories: Scientist, Engineer, Technician, Administrative Professional, and Clerical.

The contractor shall break out the On-site and Near-site WYE by task order number or TDN, project title, and principle Technical Monitor.

U. Organizational Conflict of Interest Avoidance Plan – In compliance with Section H, H.12 Organizational Conflicts Of Interest (OCI) (LaRC 52.227-96) and I.10, Access to Sensitive Information (NFS 1852.237-72), the Contractor shall provide the Contracting Officer with a comprehensive OCI avoidance plan IAW the RFP suspense date and update as needed throughout the contract performance period.

V. Source Code – The Contractor shall provide to the Contracting Officer's Technical Representative, all source code and all supporting documentation explaining the use and outcome of source code for each Task Order or TDN. See Section H, H.2.

W. Self-Assessment Report – The Contractor may submit a Self-Assessment Report in accordance with the instructions contained in the Award Fee Evaluation Plan (Exhibit L). The Self-Assessment shall not exceed 5 pages, not including cost analysis reports, and shall be delivered to the Government within 25 calendar days after the end of each award fee evaluation period.

X. Estimate of Percentage of Recovered Material Content for EPA Designated Products - In compliance with Clause I.8, Estimate of Percentage of Recovered Material Content for EPA Designated Products (FAR 52.223-9), the Contractor shall provide to the Environmental Management Office the percentage of the total recovered material used in contract performance including, if applicable, the percentage of postconsumer material content, upon contract completion.

DOCUMENT DISTRIBUTION REQUIREMENTS:

A. Unless otherwise specified elsewhere in this contract, reports and other documentation shall be submitted f.o.b. destination as specified below, addressed as follows:

National Aeronautics and Space Administration Langley Research Center
Attn: **TBD/See below** , Mail Stop **TBD/See below** Contract NNL11AA00B
Hampton, VA 23681-2199

B. The following letter codes designate the recipients of reports and other documentation which are required to be delivered prepaid to Langley Research Center by the Contractor:

A--Contract Specialist, Mail Stop 126

B--Contracting Officer Representative
Shannon Walker, M/S 401
EMAIL: Shannon.L.Walker@nasa.gov

C--New Technology Representative, Mail Stop 401

D—Financial Management, LaRC-DL-NF533@mail.nasa.gov

E--Safety and Facility Assurance Branch, Mail Stop 421

F--Contractor Labor Relations Officer, Mail Stop 144

G--Patent Counsel, Mail Stop 141

H--Industrial Property Officer, Mail Stop 377

I--Center Information Technology Security Manager (CITSM), Mail Stop 124

J--According to instructions on form

K—Technical Point of Contact

L--On and Near-Site Staffing Report, LaRC-DL-contractorwye@mail.nasa.gov

M—Environmental Management Office, Mail Stop 418

C. The following are the distribution requirements for reports and other documentation required to be delivered f.o.b. destination. The numeral following the letter code specifying the number of copies to be provided:

LETTER CODE AND DOCUMENT: DISTRIBUTION

DISTRIBUTION REQUIREMENTS		
Document Letter	**Document**	**Distribution Code and Quantity**
A	Initial Baseline Financial Management Report	A-1, B-1, D-1 (Via Email)
B	Monthly Financial Management Report (533M)	A-1, B-1, D-1 (Via Email)
C	Monthly Progress Report	A-1, B-1, K-1 (Via Email)
D	Final Reports	A-1, B-2, K-1
E	Safety Reports or CMAR website	E-1, or in accordance with directions posted on the website (CMAR).
F	Notice of Violation Responses	A-1, E-1
G	IT Security Plan	A-1, B-1, I-1
H	Annual IT Security Training Report	A-1, B-1, I-1,
I	RESERVED	N/A
J	RESERVED	N/A
K	NASA Property in the Custody of Contractors (NF 1018)	H-1
L	Requisition and Invoice/Shipping Document	H-1
M	Quality Plan	A-1, B-1, E-1
N	Quality System Documents	A-1, B-1
O	Federal Contractor Veterans Employment Report (VETS-100)	J-1
P	Evidence of Insurance	A-1

Q	Interim Patent Report	A-1, B-1, C-1, G-1
R	Final Patent Report	A-1, B-1, C-1, G-1
S	Invention Disclosure Reporting	A-1, B-1, C-1, G-1
T	On and Near-Site Staffing Report	A-1, B-1, L-1 (Via E-mail)
U	Organizational Conflicts of Interest Avoidance Plan	A-1, B-1
V	Source Code and Supporting Documentation	B-1
W	Self-Assessment Report	A-1, B-1 (Via E-mail)
X	Estimate of Percentage of Recovered Material Content for EPA Designated Products	M-1

D. When the Contract Specialist is not designated above to receive a copy of a report or document, the Contractor shall furnish a copy of the report/document transmittal letter to the Contract Specialist. If delegated, the Contractor shall also furnish a copy of the transmittal letter and a copy of each Financial Management Report to the delegated Administrative Contracting Officer of the cognizant DoD (or other agency) contract administrative services component.

Section II: Contract Documentation Requirements to be Tailored

The Contractor shall deliver the following contract documentation as identified in individual task direction notices and task orders or TDN:

Reports/Plans

- Reports summarizing, including but not limited to:
  - Assessments
  - Comparison of Test Results to Analysis
  - Computer Aided Design/Computer Aided Engineering (CAD/CAE) files
  - Configuration & Data Management Plans
  - Configuration Item List
  - Design and Development of Systems and Processes
  - Design and Engineering Drawings, Specifications, and as-built documentation and modifications
  - Design Documentation and Test Results
  - Edited documents such as reports, plans, handbooks and presentations
  - Experimental data, simulations results, and supporting documentation
  - Facility work plan describing lab processes and hardware/software utilization
  - Field Campaign and Deployment status reports
  - Finite Element Models (FEM)
  - Graphic reports, Network Diagrams, Gantt Charts, Resource Histograms
  - Implementation Plans
  - Instrument assessment, optimization, and operations
  - Lessons Learned Documentation
  - Presentations and briefings
  - Proceedings of technical meetings and reviews
  - Progress, key results, plans and issues of research and development
  - Project and Work Plans
  - Requirements Documents
  - Results of Analysis and Studies, including methodology, ground rules and assumptions
  - Risk Management Plan
  - Schedule and Budget Reports
  - Schedule Master Plans
  - Science team/project/mission tasks, schedules, and plans
  - Status Reports
  - System, architecture, and mission concepts and plans
  - Technical activity logs
  - Technical Problem formulation
  - Test data logs and all other data artifacts
  - Test Plans, Procedures, Calibration, Set-up and Characterization
  - Test and Analysis Correlations
  - Trade study results to include designs, test and evaluation plans, results, and analyses
  - Travel detail and accounting expense reports
  - Trend Analysis
  - User guides and manuals
  - Verification & Validation Plans
  - WBS dictionary and hierarchical graphs

- Analysis and interpretation of science data documented in peer-reviewed journal articles, conference presentations and proceedings, workshops, technical reports, technical memorandums, "white papers", and science team meetings

- Engineering drawings and specifications, technical results, test reports, trade studies, requirements documents, tested integration scripts, and instrument test reports

- Documentation for software in accordance with applicable NPRs and Software Management Plan

- Documentation of all algorithm approaches, computer code, and supporting information, draft operations plans, reviews, consulting reports on programming, and demonstrated scientific results

Off-Site Government Furnished Property for STARSS II Contract No. NNL11AA00B

SSAI Decal	Old Decal (no longer attached)	ECN	Item Description	Manufacturer	Model Number	Serial Number	Unit Price	Notes
G000602	N/A	N/A	WIRELESS DATA TRANSCEIVER	FREEWAVE	FGR-115RE	929-9152	$ 1,350.00	
G000638	G197163	1878874	CPU	DIGITAL	NONE	NONE	$ 1,000.00	
G000641	G197295	2101189	PROJECTOR	DIRECTPLUS	DP-30	100510	$ 1,226.00	
G000657	G122954	NA	CABLEMETER	FLUKE	620 LAN	6875964	$ 649.50	
G000658	G163584	1884759	FIBER OPTIC BENCH	NEWPORT CORP	NONE	NONE	$ 2,425.00	
G000659	G158294	NA	FILTER WHEEL	ORIEL	NONE	NONE	$ 996.00	
G000660	G180800	2105212	GAS DETECTOR	THERMO ORIEL	70328	181	$ 2,532.00	
G000661	G183283	2105418	DETECTOR, SI	THERMO ORIEL	70318	118	$ 1,807.00	
G000662	G180801	2105211	SIGNAL CONTROLLER	THERMO ORIEL	77055	115	$ 1,211.00	
G000663	G180799	2105210	SIGNAL CONTROLLER	THERMO ORIEL	77055	116	$ 1,211.00	
G000664	G117968	2009176	DETECTOR HEAD	ORIEL	70123	3163112	$ 1,004.00	
G000665	G180798	2105223	SIGNAL PROCESSOR	THERMO ORIEL	70100-3-2503	NONE	$ 1,070.00	
G000666	G117967	2009175	RADIOMETER	ORIEL	70100	528	$ 4,745.00	
G000667	G124646	NONE	PHOTOFEEDBACK SYSTEM	ORIEL	68850	1371	$ 2,028.25	
G000668	G158292	NA	RADIOMETRIC POWER SUPPLY	ORIEL	68831	723	$ 2,526.00	
G000669	G158290	NA	FOCUSING TUBE	ORIEL	77259	NONE	$ 564.00	
G000670	G158293	NA	HOUSING LAMP	ORIEL	66182	313	$ 1,197.00	
G000671	G158280	NA	POWER SUPPLY	ORIEL	68811	659	$ 2,661.00	
G000672	G158282	NA	RADIOMETRIC POWER SUPPLY	ORIEL	68835	194	$ 3,172.00	
G000673	G158281	NA	HOUSING W/IGNITOR	ORIEL	66028	356	$ 2,226.00	
G000674	G158283	NA	LAMP HOUSING, 1000W	ORIEL	66187	251	$ 2,044.00	
G000675	G158279	NA	LAMP FIXTURE	ORIEL	6372	NONE	$ 221.00	
G000676	G158291	NA	PHOTOFEEDBACK SYSTEM	ORIEL	68850	1132	$ 1,993.00	
G000679	G145637	N/A	RCR COLUMNATOR	ANALYTICAL SPECTRUM	NONE	NONE	$ 790.00	
G000682	G182600	NONE	BENCH, 8 FT STANDARD OPTICAL	ORIEL	NONE	11160	$ 981.00	
G000683	G124645	NONE	POWER SUPPLY	ORIEL	68835	224	$ 3,228.10	
G000684	G157104	1613132	ROTATIONAL STAGE	POLYTIC	M037DG	1319	$ 4,335.00	
G000685	G158284	NA	FIBER OPTIC ASSEMBLY	ORIEL	77800	NONE	$ 367.00	
G000686	G158285	NA	POWER SUPPLY	ORIEL	6047	NONE	$ 196.00	
G000687	G158286	NA	POWER SUPPLY	ORIEL	6043	NONE	$ 196.00	
G000688	G158295	NA	HAND CONTROLLER	ORIEL	74009	94615757	$ 497.00	
G000689	G158289	NA	MONOCHROMATOR SPHERE	ORIEL	70482	NONE	$ 989.00	
G000715	G158300	1873201	LAPTOP COMPUTER	NEC	PC624091803	75002740	$ 4,957.00	
G000716	G122834	1873202	LAPTOP COMPUTER	NEC	PC624091803	74009951	$ 3,757.00	
G000717	G122832	1873203	LAPTOP COMPUTER	NEC	PC 624091803	75002764	$ 3,757.00	
G000720	G117977	2008990	SPECTRORADIOMETER	ASD	FS3502500P	6207	$ 51,877.00	
G000721	G158288	NA	CALIBRATION LAMP	ORIEL	6033	NONE	$ 295.00	
G000722	G158287	NA	CALIBRATION LAMP	ORIEL	6035	NONE	$ 197.00	
G000723	G180762	NA	VACUUM	EUREKA	6984	NONE	$ 299.95	
G000724	G124672		SPHERE WITH INPUT/OUTPUT PORTS	ORIEL	70481LHS	NONE	$ 1,515.25	
G000725	G177333	NA	DIRECT IRRADIANCE ATTACHMENT	ANALYTICAL SPECTRAL	NONE	NONE	$ 750.00	
G000735	G177349	1637164	DIGITAL CAMERA	SONY	NONE	NONE	$ 1,160.00	
G000738	G192784	2106719	LAPTOP (MPL)	DELL	PP05L	CN-04Y212-48643-34P-28	$ 2,500.00	
G000739	G180787	NONE	COLD WEATHER PISTOL GRIP	ANALYTICAL SPECTRAL	NONE	NONE	$ 500.00	
G000740	G180788	NONE	FIBER OPTIC CABLE	ANALYTICAL SPECTRAL	NONE	135619	$ 6,000.00	
G000778	G197317	NA	HARD DRIVE, EXTERNAL	LACIE	NONE	151309126	$ 385.51	
G000793	N/A	2102044	COMPUTER, LAPTOP	SONY	PCG8AIR	R2724915	$ 2,449.00	
G000795	N/A	N/A	DROBO 4-BAY STORAGE ARRAY W/2 1TB	DATA ROBOTICS, INC	DRO4D-U	TDC081201434	$ 1,025.75	
G000796	N/A	N/A	DROBO 4-BAY STORAGE ARRAY W/2 1TB	DATA ROBOTICS, INC	DRO4D-U	TDC081201366	$ 1,025.76	

G000797	N/A	N/A	DRO8O 4-BAY STORAGE ARRAY W/2 1TB	DATA ROBOTICS, INC	DRO4D-U	TDC081201221	$ 1,025.76	
G000800	N/A	N/A	THERMO-HYGROMETER (DIGITAL)	OMEGA	RH411	None	$ 349.00	
G000813	N/A	N/A	EPILOG FIBERMARK LASER ENGRAVER W/	EPILOG CORPORATION	8000 LASER SYS	8020-0969622412FMR	$ 39,240.00	
G000823	N/A	N/A	LIDAR FUNCTIONAL VIBRATION (AIR COO	LDS TEST & MEASUREMENTS, INC.	V556 1/4 UNF	10234	$ 33,855.00	
G000833	N/A	N/A	LASER SHAKER CONTROLLER	LDS TEST & MEASUREMENTS, INC.	LAS200	10233693	$ 22,550.00	
G000952	N/A	N/A	HP DOCKING STATION & POWER ADAPTE	HP	HSTNN-IX02	CNU032X0HK	$ 503.70	
G000970	N/A	N/A	HOUSING & INTERFEROMETER	WELCH - HOUSING; LIGHT MACHINERY - INTERFEROMETER			$ 65,000.00	THE HOUSING WAS TRANSFERRED TO LIGHT MACHINERY FOR INSTALL OF LASER. WILL BE TRANSFERRED TO NASA AFTER TESTING. UNIT PRICE ONLY INCLUDES WELCH PORTION.
G001055	G197309	NA	SCANNER, FLATBED	HEWLETT PACKARD	SCANJET 5300C	NONE	$ 300.00	
G001066	G197323	NA	MONITOR, FLAT SCREEN	SAMSUNG	715V N	GS17H9NY339533 B	$ 240.00	
G001082	G182634	2102606	CPU	SUN	NONE	FT22150483	$ 1,121.00	
G001092	G122703	38676	DISK DRIVE	FUJITSU	M2954S	50036629	$ 1,472.00	
G001093	G182608	NA	CD-RW RECORDER	YAMAHA	CRW3200SX	FFS0003190	$ 299.99	
G001094	G182625	2102588	CPU	SUN	NONE	FT23450138	$ 1,121.00	
G001095	G80965	2098905	MONITOR	SUN	GDM20E20	9617GI4195	$ 3,900.00	
G001101	G197174	3047238	CPU W/KB & MOUSE	DELL	NONE	83WSG31	$ 700.00	
G001104	G182632	2102620	CPU	SUN	NONE	FT23520380	$ 1,121.00	
G001106	G182611	2102587	CPU	SUN	NONE	FT23450213	$ 1,121.00	
G001107	G177335	NA	DISK DRIVE	SUN	ULTRASCSI	142C5BD9	$ 3,541.34	
G001109	G197281(P)	2099931	MONITOR	SUN		0120409-0126KY0154	PRICE INCL W/G001108	
G001174	G197190	1742970	CPU	DIGITAL	PB550A9	N1715069QC	$ 4,100.00	
G001175	G197205	1742972	CPU W/KB & MOUSE	DIGITAL	PB550A9	N1715069RE	$ 2,100.00	
G001176	G197194	SEE NOTE	EXTERNAL ENCLOSURE W/3 DRIVES	ANDATACO	NONE	NONE	$ 6,300.00	INCLUDES ECN'S 1612650, 1612651, 1612652
G001180	G122749	NA	UPS	APC	SU2200NET	ES9714341165	$ 958.00	
G001184	G150919	NA	CPU	SUN	NONE	FWB4750455	$ 4,964.00	
G001277	G197222	3022631	LAPTOP COMPUTER	DELL	PP07L	NONE	$ 12,096.00	
G001292	G192775	NA	HARD DRIVE, EXTERNAL	LACIE	300721	140808985	$ 475.00	
G001314	G177327	NA	PROJECTOR, LCD	EPPLEY	TLP780U	31634546	$ 1,275.00	
G001319	G197311	NA	CPU W/KEYBOARD AND MOUSE	HEWLETT PACKARD	XW8200	USU44200BQ	$ 11,091.00	
G001339	G177311	NA	LAPTOP	COMPAQ	NONE	3J1CJMXZH014	$ 2,402.11	
G001340	G150884	NA	CPU	DELL	XPSR450	H685Q	$ 1,870.00	
G001383	G119967	1636417	MONITOR	SUN	LSA800	0027KY0236	$ 2,298.00	
G001389	G180768	NA	SWITCH, ETHERNET	CISCO	NONE	CAT0813N0OE	$ 5,104.00	
G001390	G180769	NA	SWITCH, ETHERNET	CISCO	NONE	CAT0829N2RD	$ 5,104.00	
G001421	G177351	2098611	TAPE TRANSPORT, MAGNETIC	STORCASE	FJR100-1	99288A0241	$ 3,360.00	
G001432	G197285	2105169	CPU W/KB & MOUSE	DELL	NONE	NONE	$ 2,529.00	
G001480	G197204	2099921	CPU W/KB & MOUSE	SUN	A23	148CO57B	$ 5,200.00	
G001481	G197204(P)	2099928	MONITOR		LSA800	0120409-0126KY0175	PRICE INCL W/G001480	
G001487	G197277	1884898	CPU W/KB & MOUSE	DIGITAL	PBPSMIATA	4015DP9Z1001	$ 1,500.00	
G001488	G197277(P)	2099788	MONITOR	SONY	SDM-M81	NONE	PRICE INCL W/G001487	
G000978	N/A	N/A	AIRCRAFT WINDOW PLATE AND CELL ASS	WELCH MECHANICAL DESIGN	HSRL-258-1-1;HSRL-2	N/A	$ 10,988.00	ADDED AS CAP TASK C-006 ON 10/31/13.
G001002	N/A	N/A	HP DL585 G7 6386SE 4P SERVER	HP	P/N 704160-001	MXQ35202NX	$ 18,300.96	ADDED AS CAP TASK A-059 ON 4/16/2014, PO # 0001746
90	90					TOTAL	$ 413,364.93	

DELETIONS FROM PREVIOUS EXHIBIT C AND EQUIPMENT RECEIVED AND IMMEDIATELY TRANSFERRED SINCE MOD 1.

G000957	N/A	N/A	REMAINING OPTO-MECHANICAL ASSEMB	WELCH MECHANICAL DESIGNS	N/A	N/A	$ 110,000.00	DD FORM 1149 # NNL11AA00B-PHO-0001, DTD 10/18/2011
G000958	N/A	N/A	OPTO-MECHANICAL ASSEMBLIES INCLUD	WELCH MECHANICAL DESIGNS	N/A	N/A	$ 194,635.00	DD FORM 1149 # NNL11AA00B-PHO-0002, DTD 11/22/2011
G000959	N/A	N/A	CISCO VIDEO SURVEILLANCE CAMERA	CISCO	WVC210	SER15470729	$ 218.96	DD FORM 1149 # NNL11AA00B-PHO-0004, DTD 02/16/2012
G000960	N/A	N/A	APC AP7900 SWITCHED RACK PDU	APC	AP7900	ZA1115014229	$ 405.95	DD FORM 1149 # NNL11AA00B-PHO-0004, DTD 02/16/2012
G000961	N/A	N/A	.8 HP 6-GALLON 150 PSI ELECTRIC AIR CO	PORTER-CABLE	C2002-WK	2961635255	$ 180.94	DD FORM 1149 # NNL11AA00B-PHO-0004, DTD 02/16/2012
G000953	N/A	N/A	WATER-WATER COOLING MODULE PLUS	K-O Concepts	LG-20	N/A	$ 5,205.00	DD FORM 1149 # NNL11AA00B-PHO-0005, DTD 03/09/2012
G000954	N/A	N/A	WATER-WATER COOLING MODULE PLUS	K-O Concepts	LG-20	N/A	$ 5,205.00	DD FORM 1149 # NNL11AA00B-PHO-0005, DTD 03/09/2012
G000955	N/A	N/A	PUMP MOTORS, VDR PART M09-106-04	K-O Concepts	N/A	N/A	$ 829.00	DD FORM 1149 # NNL11AA00B-PHO-0005, DTD 03/09/2012
G000956	N/A	N/A	PUMP MOTORS, VDR PART M09-106-04	K-O Concepts	N/A	N/A	$ 830.00	DD FORM 1149 # NNL11AA00B-PHO-0005, DTD 03/09/2012
G000962	N/A	N/A	HANDLING CART, ITEM 10031-2001-001	WELCH	N/A	N/A	$ 15,000.00	DD FORM 1149 # NNL11AA00B-PHO-0005, DTD 03/09/2012
G000809	N/A	1641070	LAPTOP, PC	DELL	PP15L	CN0D8006129616183205	$ 2,368.00	DD FORM 1149 # NNL11AA00B-PHO-0006, DTD 05/02/2012
G000680	G180797	1096491	POWER SUPPLY	SPECTRA-PHYSICS	7300-L2	3016	$ 13,775.00	DD FORM 1149 # NNL11AA00B-PHO-0007, DTD 08/17/2012
G000949	N/A	2099562	Chassis, Expansion (8 Slot)	National Instruments	PXI1000B	V04X00BB0	$ 32,954.50	DD FORM 1149 # NNL11AA00B-PHO-0008, DTD 09/05/2012
G000963	N/A	N/A	ASSEMBLY, HSRL2 ENCLOSURE	WELCH MECHANICAL DESIGNS		09022-2002-001	$ 98,832.00	DD FORM 1149 # NNL11AA00B-PHO-0009, DTD 09/05/2012
G000964	N/A	N/A	465363-1 PYLON ASSY (LEFT/RIGHT), FAL	WELCH MECHANICAL DESIGNS	N/A	N/A	$ 29,832.00	DD FORM 1149 # NNL11AA00B-PHO-0010, DTD 08/21/2012
G000965	N/A	N/A	465363-1 PYLON ASSY (LEFT/RIGHT), FAL	WELCH MECHANICAL DESIGNS	N/A	N/A	$ 29,832.00	DD FORM 1149 # NNL11AA00B-PHO-0010, DTD 08/21/2012
G000677	G178129	NA	UPS	APC	SUA1500	AS0246231950	$ 420.00	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G000690	G153086	NA	ADAPTER, AUTO/PLANE	NEC	129912A	NONE	$ 119.13	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G000691	G153087	NA	ADAPTER, AUTO/PLANE	NEC	129912A	NONE	$ 119.13	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G000697	G197293	2101846	LAPTOP COMPUTER	DELL	PP01X	HST0M11	$ 2,450.00	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G001083	G183299	2102422	MONITOR	SUN	GH18PS	NONE	$ 1,565.00	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G001139	G192789	NA	KEYBOARD	MICROSOFT	NONE	NONE	PRICE INCL W/G124662	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G001247	G180775	NONE	UPS	APC	SUA1500	AS0246130935	$ 382.00	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G001384	G197308	3047251	LAPTOP COMPUTER	DELL	PP05L	J12NB51	$ 3,500.00	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G001450	G177350	2098610	TAPE TRANSPORT, MAGNETIC	STORCASE	FJR100-1	99288A0160	$ 3,360.00	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G001451	G124663	2106800	HARD DRIVE, EXTERNAL	RHINO JR.	FJR100-1W	03140A0094	$ 948.00	DD FORM 1149 # NNL11AA00B-PHO-0012, DTD 09/17/2012
G000966	N/A	N/A	ENVIDAS ULTIMATE DATA ACQUISITION S	ADVANTECH (COMPUTER)	510	OB0022018833	$7,160.40	PROCURED UNDER PO 1118 & PR 7735, TASK A-083, TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0011, DTD 04/01/2013

G000967	N/A	N/A	SMART UPS SC1000	APC	SC1000	5S1011T12551	$477.36	PROCURED UNDER PO 1118 & PR 7735, TASK A-083, TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0011, DTD 04/01/2013
G001100	G197172(P)	2101487	MONITOR	DELL	NONE	KR09J3674760224UAK70	PRICE INCL W/G001099	DD FORM 1149 # NNL11AA00B-PHO-0013, DTD 05/10/2013
G001123	G197260	2100097	DISK DRIVE UNIT	STORCASE TECHNOLOGY	DS100-4-160	201518211	$3,335.00	DD FORM 1149 # NNL11AA00B-PHO-0013, DTD 05/10/2013
G001124	G197261	2106203	CPU W/KB & MOUSE	COMPAQ	E2F6W-A9	L931CQB1A602	$1,668.00	DD FORM 1149 # NNL11AA00B-PHO-0013, DTD 05/10/2013
G001133	G197259	NA	JAZ DRIVE	IOMEGA	V2000S	WCAVY3924614	$100.00	DD FORM 1149 # NNL11AA00B-PHO-0013, DTD 05/10/2013
G000832	N/A	N/A	RECIRCULATING WATER CHILLER W/OPTI	K-O CONCEPTS, INC.	LCR-8.0	9120314	$5,000.00	PROCURED UNDER PO # 0948 DTD 11/16/09. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0003, DTD 03/28/2013
G000920	N/A	N/A	RECIRCULATING WATER CHILLER W/ OPT	K-O CONCEPTS	LCR-8.0		$5,614.00	PROCURED UNDER PO # 0000208 DTD 6/11/10. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0003, DTD 03/28/2013
G000921	N/A	N/A	RECIRCULATING WATER CHILLER W/ OPT	K-O CONCEPTS	LCR-8.0		$5,614.00	PROCURED UNDER SSAI PO # 0000208 DTD 6/11/10. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0003, DTD 03/28/2013
G000834	N/A	1641190	LAPTOP, INSPIRON	DELL	INSPIRON	(01)07898349890528	$2,300.00	DD FORM 1149 # NNL11AA00B-PHO-0014, DTD 03/29/2013
G000968	N/A	N/A	NASA-ACCESS NON-HEATED DIFFUSING T	NCAR, DESIGN & FABRICATION SERVIC	102761	N/A	$26,504.44	PROCURED UNDER TASK A-011. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0015, DTD 05/10/2013
G000947	N/A	N/A	HSRL THERMALLY TUNED MICHELSON, 35	LIGHT MACHINERY	P/N 0--4721	N/A	$75,264.31	DD FORM 1149 # NNL11AA00B-PHO-0016, DTD 04/11/2013
G000791	N/A	3048998	ACER TRAVELMATE 8204 WLMI LAPTOP	ACER	ZC1	LXTAX06034604005A0EM	$2,300.00	DD FORM 1149 # NNL11AA00B-PHO-0017, DTD 05/10/2013
G001349	G197197	2008769	CPU W/KB & MOUSE	DIGITAL	PB64A-BA	N161903JKY	$2,000.00	DD FORM 1149 # NNL11AA00B-PHO-0017, DTD 05/10/2013
G001350	G197197(P)	1262592	MONITOR	VIEWSONIC	2082	5441508799	PRICE INCL W/G001349	DD FORM 1149 # NNL11AA00B-PHO-0017, DTD 05/10/2013
G001351	G197201	1882164	DISK DRIVE UNIT	WESTERN SCIENTIFIC	NONE	484890	$980.00	DD FORM 1149 # NNL11AA00B-PHO-0017, DTD 05/10/2013
G001352	G197200	NA	DRIVE, EXTERNAL	WESTERN SCIENTIFIC	NONE	576940	$100.00	DD FORM 1149 # NNL11AA00B-PHO-0017, DTD 05/10/2013
G001353	G197199	NA	DRIVE, EXTERNAL	WESTERN SCIENTIFIC	NONE	484817	$100.00	DD FORM 1149 # NNL11AA00B-PHO-0017, DTD 05/10/2013
G001354	G197198	NA	DRIVE, EXTERNAL	WESTERN SCIENTIFIC	NONE	NONE	$100.00	DD FORM 1149 # NNL11AA00B-PHO-0017, DTD 05/10/2013
G000969	N/A	N/A	WELLS CARGO TRAILER MODIFIED WITH E	WELLS CARGO TRAILER MODIFIED BY C	CW1222-102-V	ID: 1WC200F29D1195000	$41,995.00	PROCURED UNDER TASK C-011. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0019, DTD 07/19/2013
G000972	N/A	N/A	ASSEMBLY, HSRL 1 LASER, UPGRADE 5	WELCH MECHANICAL DESIGN	13004-2001-001	N/A	$43,500.00	PROCURED UNDER TASK A-090. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0020, DTD 08/21/2013
G000971	N/A	N/A	PHILLIPS HEARTSTART ONSITE AED INCLU	PHILIPS	N/A	A13G-03545	$1,253.00	PROCURED AS CAP ON 8/14/13 ON CREDIT CARD. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0021 DTD 08/28/2013
G000803	N/A	N/A	TRACE SERIES INVERTER/CHARGER	XANTREX	TR2412-120-60	P10000933	$859.00	DD FORM 1149 # NNL11AA00B-PHO-0021 DTD 08/28/2013
G000973	N/A	N/A	ASCENDS CARBOHAWK EXPERIMENT SIM	WELCH MECHANICAL DESIGN	09002-2001-001	N/A	371,074.00	PROCURED UNDER TASK C-007. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0022, DTD 09/26/2013

G000977	N/A	N/A	ZOOM LENS FOR FLASH LIDAR	WIZARD OPTICS, INC.	W05-1-ZOOM	2	$32,600.00	PROCURED UNDER TASK C-008. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0023, DTD 01/07/14
G000975	N/A	N/A	AIRCRAFT RACK KIT, 9U CAPACITY, FOR TH	WELCH MECHANICAL DESIGN	09011-2015-002	N/A	$13,583.00	PROCURED UNDER TASK C-063. TRANSFERRED VIA DD FORM 1149 NNL11AA00B-PHO-025 DTD 01/06/2014
G000976	N/A	N/A	AIRCRAFT RACK KIT, 9U CAPACITY, FOR TH	WELCH MECHANICAL DESIGN	09011-2015-002	N/A	$13,582.00	PROCURED UNDER TASK C-063. TRANSFERRED VIA DD FORM 1149 NNL11AA00B-PHO-025 DTD 01/06/2014
G001000	N/A	N/A	HR-AMS DETECTOR MODULE W/HARDWA	WELCH MECHANICAL DESIGN	2 EA. 13014-4001-00	N/A	$32,598	PROCURED UNDER TASK C-063. TRANSFERRED VIA DD FORM 1149 NNL11AA00B-PHO-025 DTD 01/06/2014
G000979	N/A	N/A	INFLATABLE WORK VEST (PFD)	MUSTANG INFLATABLE	MD3188	N/A	$368.56	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000980	N/A	N/A	INFLATABLE WORK VEST (PFD)	MUSTANG INFLATABLE	MD3188	N/A	$368.56	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000981	N/A	N/A	INFLATABLE WORK VEST (PFD)	MUSTANG INFLATABLE	MD3188	N/A	$368.56	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000982	N/A	N/A	INFLATABLE WORK VEST (PFD)	MUSTANG INFLATABLE	MD3188	N/A	$368.56	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000983	N/A	N/A	ResQLink + BUOYANT PERSONAL LOCATO	ACR ELECTRONICS	PLB-375	11995	$310.97	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000984	N/A	N/A	ResQLink + BUOYANT PERSONAL LOCATO	ACR ELECTRONICS	PLB-375	11994	$310.97	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000985	N/A	N/A	ResQLink + BUOYANT PERSONAL LOCATO	ACR ELECTRONICS	PLB-375	11993	$310.97	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000986	N/A	N/A	ResQLink + BUOYANT PERSONAL LOCATO	ACR ELECTRONICS	PLB-375	11988	$310.97	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000987	N/A	N/A	VHF85 HANDHELD VHF RADIO	WEST MARINE	11954328	38003606	$138.20	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000988	N/A	N/A	VHF85 HANDHELD VHF RADIO	WEST MARINE	11954328	38003605	$138.20	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000989	N/A	N/A	VHF85 HANDHELD VHF RADIO	WEST MARINE	11954328	38003604	$138.20	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000990	N/A	N/A	VHF85 HANDHELD VHF RADIO	WEST MARINE	11954328	38003603	$138.20	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000991	N/A	N/A	WATERPROOF FLASHLIGHT 5"	WEST MARINE	N/A	N/A	$28.78	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000992	N/A	N/A	WATERPROOF FLASHLIGHT 5"	WEST MARINE	N/A	N/A	$28.78	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014

G000993	N/A	N/A	WATERPROOF FLASHLIGHT 5"	WEST MARINE	N/A	N/A	$28.78	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000994	N/A	N/A	WATERPROOF FLASHLIGHT 5"	WEST MARINE	N/A	N/A	$28.78	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000995	N/A	N/A	SUPSTOW + FANNYPAK AND LEASH	SEATTLE SPORTS	N/A	N/A	$51.82	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000996	N/A	N/A	SUPSTOW + FANNYPAK AND LEASH	SEATTLE SPORTS	N/A	N/A	$51.82	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000997	N/A	N/A	SUPSTOW + FANNYPAK AND LEASH	SEATTLE SPORTS	N/A	N/A	$51.82	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000998	N/A	N/A	SUPSTOW + FANNYPAK AND LEASH	SEATTLE SPORTS	N/A	N/A	$51.82	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G000999	N/A	N/A	6 PERSON COASTAL LIFERAFT, ResU MOD	VIKING	N/A	N/A	$2,374.38	PROCURED UNDER PO # 0001651, TASK A-017. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0027 DTD 01/03/2014
G001001	N/A	N/A	ACES ENCLOSURE, 17" OPTICAL WINDOW	WELCH MECHANICAL DESIGNS	12023-4036-001	N/A	$64,629.00	PROCURED UNDER TASK C-007. TRANSFERRED VIA DD FORM 1149 # NNL11AA00B-PHO-0028 DTD 03/26/2014

Pages 112 through 184 redacted for the following reasons:
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b(4)

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1 2

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
000006	08/01/2014	N/A	

6. ISSUED BY CODE LARC

NASA/Langley Research Center
9B Langley Blvd., Bldg. 1195B
M/S 126
Hampton VA 23681-2199

7. ADMINISTERED BY (If other than Item 6) CODE

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)

SCIENCE SYSTEMS AND APPLICATIONS, INC.
10210 GREENBELT RD STE 600
LANHAM MD 20706-6239

(x) 9A. AMENDMENT OF SOLICITATION NO.

9B. DATED (SEE ITEM 11)

X 10A. MODIFICATION OF CONTRACT/ORDER NO. NNL11AA00B

10B. DATED (SEE ITEM 13) 12/09/2010

CODE 58009 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 _____ copies 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 ACKNOWLEDGEMENT 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)
N/A

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

CHECK ONE	
	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).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)
X	Mutual Agreement of the Parties

E. IMPORTANT: Contractor ☐ is not. ☒ is required to sign this document and return 1 copies to the issuing office.

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

Payment Terms:
Net 30 days
FOB: Destination
See continuation page.

Except as provided herein, all terms and conditions of the document referenced in Item 9 A 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 (Type or print)
Janine Good, Contracts Manager	Tameka K. Woodley

15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
Janine Good (Signature of person authorized to sign)	9/29/14	Tameka K. Woodley (Signature of Contracting Officer)	9/29/14

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

The purpose of this modification is to effect the following changes to the subject contract. Therefore, the following changes are hereby made:

A. Delete **B1 CONTRACT FUNDING (1852.232-81) (JUN 1990)** in its entirety and replace with the following:

B.5 CONTRACT FUNDING (1852.232-81) (JUN 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 $163,541,161.36.

CLIN 2 is funded in the amount of $163,541,161.36 for cost for the following period of performance: contract award through 7/31/2014.

CLIN 3 is funded in the amount of $TBD for cost for the following estimated period of performance: TBD.

CLIN 4 is funded in the amount of $TBD for cost for the following estimated period of performance: TBD.

(b) An additional amount of b(4) is obligated under this contract for payment of fee.

CLIN 2 is funded in the amount of b(4) for fee.

CLIN 3 is funded in the amount of $TBD for fee.

CLIN 4 is funded in the amount of $TBD for fee.

(End of clause)

D. All other terms and conditions of this contract remain unchanged as a result of this modification no. 6.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT	1. CONTRACT ID CODE	PAGE OF PAGES
		1 1

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
000007	See Block 16C	N/A	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
NASA/Langley Research Center 9B Langley Blvd., Bldg. 1195B M/S 126 Hampton VA 23681-2199	LARC		

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)		9A. AMENDMENT OF SOLICITATION NO.
SCIENCE SYSTEMS AND APPLICATIONS, INC. 10210 GREENBELT RD STE 600 LANHAM MD 20706-6239	(x)	9B. DATED (SEE ITEM 11)
	X	10A. MODIFICATION OF CONTRACT/ORDER NO. NNL11AA00B
		10B. DATED (SEE ITEM 13) 12/09/2010
CODE 58009	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 _____ copies 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 ACKNOWLEDGEMENT 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)
N/A

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

CHECK ONE	
	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).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X	D. OTHER (Specify type of modification and authority) Mutual Agreement of the Parties

E. IMPORTANT: Contractor ☐ is not. ☒ is required to sign this document and return 1 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 effect the following change:

Incorporate FAR Clause 52.204-14, Service Contract Reporting Requirements (Jan 2014), by reference in Section I.1.

All other terms and conditions of this contract remain unchanged.

Payment Terms:
Net 30 days

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

15A. NAME AND TITLE OF SIGNER (Type or print)	15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
Janine Good, Contracts Manager	Janine Good (Signature of person authorized to sign)	12/4/14	Tamaka K. Woodley	Tamaka K Woodley (Signature of Contracting Officer)	12/4/14

NSN 7540-01-152-8070
Previous edition unusable

STANDARD FORM 30 (REV. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

A. The purpose of this modification is to effect the following changes to the subject contract. Therefore, the following changes are hereby made:

1. Incorporate **FAR CLAUSE 52.204-14, Service Contract Reporting Requirements (Jan 2014)**, by reference in Section I.1.

B. All other terms and conditions of this contract remain unchanged as a result of this modification no. 7.