

CONTRACT NNL06AA08B

(Contract)

The following information has been determined to be exempt from disclosure and has been deleted from the contract:

- Exhibit D – Subcontracting Plan

The Subcontracting Plan is replete with proprietary information and because there are no reasonably segregable portions that are subject to release, this plan is being withheld in its entirety.

The deleted material is exempt from disclosure under 14 C.F.R. 1206.300(b)(4) which covers trade secrets and commercial or financial information obtained from a person and privileged and confidential information. It has been held that commercial or financial material is “confidential” for purposes of this exemption if its disclosure would be likely to have either of the following effects: (1) impair the Government’s ability to obtain necessary information in the future; or (2) cause substantial harm to the competitive position of the person from whom the information was obtained, *National Parks and Conservation v. Morton*, 498 F2d 765 (D.C. Cir. 1974).

AWARD/CONTRACT		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350) <input checked="" type="checkbox"/>	RATING C-9	PAGE 1 of 40 + Exhibits
2. CONTRACT NO. NNL06AA08B		3. EFFECTIVE DATE See Block 20 C. Below	4. REQUISITION/PURCHASE REQUEST/PROJECT NO. See Block 14. Below	
5. ISSUED BY NASA Langley Research Center 9B Langley Boulevard Hampton, VA 23681-2199		CODE	6. ADMINISTERED BY (if other than item 5) C. Lynn Jenkins, Contracting Officer Mail Stop 126 Phone: 757-864-3284 Fax: 757-864-7709 Email: Lynn.Jenkins@nasa.gov	

7. NAME AND ADDRESS OF CONTRACTOR (No., street, city, country, State and ZIP Code) Lockheed Martin Corporation P.O. Box 748 Fort Worth TX 76101-0748 Cage Code: 81755 TIN: 52-1893632		8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input checked="" type="checkbox"/> FOB Destination
Name: Kevin Westerman Phone: 817-763-7711 Email: kevin.a.westerman@lmco.com Fax: 817-763-7707 Pager: 1-800-491-3294		9. DISCOUNT FOR PROMPT PAYMENT Net 30
10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN		IN: > ITEM Contract Para. G2

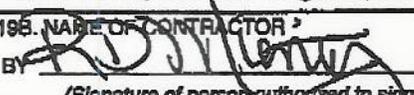
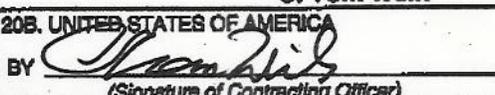
CODE:	FACILITY CODE	11. SHIP TO/MARK FOR	CODE	12. PAYMENT WILL BE MADE BY	CODE
				MS 175/Comm Acctg Section NASA Langley Research Center Hampton, VA 23681-2199	

13. AUTHORITY FOR USING OTHER THAN FULL & OPEN COMPETITION: <input checked="" type="checkbox"/> 10 U.S.C. 2304(c) (1) <input checked="" type="checkbox"/> 41 U.S.C. 253(c) (1)	14. ACCOUNTING AND APPROPRIATION DATA 4200139727 \$25,000 (Complete)
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15A. ITEM NO.	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
1	TITLE: "Flight Critical Systems Research (FCSR)" 5-Year IDIQ Task Order Contract.	1	EA	See Contract Para. B.2	See Contract Para. B.2
15G. TOTAL AMOUNT OF CONTRACT >					See B.2

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CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17. <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 1 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (attachments are listed herein.)		18. <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.	
19A. NAME AND TITLE OF SIGNER (Type or print) R. D. Mieritz, Contracts Negotiation Mgr., Adv Dev. Programs		20A. NAME OF CONTRACTING OFFICER (Type or print) C. Tom Weih	
19B. NAME OF CONTRACTOR BY  (Signature of person authorized to sign)		20B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)	
19C. DATE SIGNED 13 JAN 2006		20C. DATE SIGNED 11/13/06	

PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

B.1 SUPPLIES AND/OR SERVICES TO BE FURNISHED

Except as may be expressly stated in the task orders as furnished by the Government, the Contractor shall provide all resources as specified in Task Orders issued pursuant to Clause H.8, Task Ordering Procedure, that are necessary to perform the requirements delineated in the Section C, Statement of Work.

B.2 MINIMUM AND MAXIMUM INDEFINITE DELIVERY, INDEFINITE QUANTITY (IDIQ) CONTRACT VALUE

The guaranteed minimum quantity of work which will be required under this contract, and which will be initiated through the issuance of task orders, shall be \$25,000. There will be no further obligation on the part of the Government to issue additional task orders thereafter. The total maximum aggregate value is \$35 million for the 5-year period of performance (total of all multiple award contracts).

B.3 ESTIMATED COST AND FIXED FEE

The estimated cost and fixed fee of the contract is the sum of the estimated costs and fixed fee set forth for individual Task Orders issued by the Government pursuant to H.8, Task Ordering Procedure.

B.4 CONTRACT FUNDING (NFS 18-52.232-81) (JUN 1990)

- (a) Contract funding will be provided at the task order level.
- (b) The Limitation of Funds Clause FAR 52.232-22 (APR 1984) applies at the Task Order level.

SECTION C - DESCRIPTION/SPECIFICATION/WORK STATEMENT

Flight Critical Systems Research

1.0 Background/Introduction

The NASA Langley Research Center Research and Technology Directorate Airborne Systems focus area mission is to develop useable research and technology tools, methods, and techniques, which enable the delivery of future airborne systems technologies for the NASA Aeronautics and Exploration Systems Mission Directorates. This statement of work (SOW) defines the requirements for Flight Critical Systems Research to assist NASA in fulfilling this mission, and will evolve as the Agency's mission evolves. Flight Critical Systems Research addresses avionics systems technology gaps that are exposed by the operational challenges of the future national airspace system, trans-atmospheric flight, and extra-terrestrial planetary flight. Such operations are characterized by increasing complexity/integration; distributed control; onboard diagnostics and prognostics; un-crewed vehicle operations and autonomy; blurring of system boundaries; ubiquitous automation/computing; and increasing verification, validation, and certification challenges.

2.0 Scope

The Contractor shall conduct basic and applied research, technology development, systems analyses, and systems integration in avionics systems critical to flight management and control. The work to be performed will be defined in performance based Task Orders issued by the Contracting Officer in accordance with Section H, H.8 TASK ORDERING PROCEDURE (NFS 1852.216-80) (October 1996). The Contractor shall be responsible for defining operational and system requirements, and for delivering engineering and research results that meet the specific technical requirements defined in the SOW of each Task Order. The Contractor shall furnish all personnel, facilities, equipment, material, supplies, and services to perform the work as outlined in each Task Order, with the exception of items designated as Government furnished. The general Work Areas to be performed under the Task Orders are outlined below.

3.0 Flight Dynamics, Guidance, and Control

This Work Area includes, but is not limited to: attached and separated-flow aerodynamics; static and dynamic stability; control effector characteristics; dynamic modeling methods; flight-control-law effects; flying and handling qualities; agility and maneuverability; out-of-control flight characteristics; guidance and control theory; control system concepts; controls allocation/ reconfiguration; and control law design. Specific research topics include, but are not limited to, development of technologies, which enhance the ability of the flight crew to respond correctly when critical system or component failures occur; prevent related occurrences of loss of control in flight; enable automated responses to mitigate loss of control; and reduce the pilot workload associated with maintaining safe flight. This work area also includes the modeling and simulation associated with Flight Dynamics, Guidance, and Control research and development.

3.1 The Contractor shall develop guidance and control technologies for operation throughout the flight envelope to (1) prevent loss of vehicle control, and (2) recover vehicle control from loss-of-control (upset) conditions resulting from adverse flight conditions and vehicle/system failures, occurring separately or in combinations.

3.2 The Contractor shall consider and evaluate the following adverse conditions, including, but not limited to: external disturbances; atmospheric disturbances (e.g. wake vortices); weather (e.g. wind shear, turbulence, icing); internal errors; crew input errors (e.g. mode confusion, pilot induced oscillations); system errors/malfunctions (e.g. software/hardware, HIRF [High Intensity Radiated Fields]); external interference; aircraft; and terrain/fixed obstacles.

3.3 The Contractor shall consider and evaluate the following vehicle and system failures, including, but not limited to: control system component failures; sensors; actuators; propulsion system; vehicle impairment and damage; control surface impairment and damage; and fuselage and lifting body impairment and damage. Consideration shall be given to coupling effects between flight control, structure, and propulsion system damage.

3.4 The Contractor shall consider and evaluate the following vehicle upset conditions, including, but not limited to: operation beyond the normal vehicle flight envelope; unstable modes of motion; stall and/or departure from controlled flight; uncommanded motions due to asymmetric thrust or failures; and out-of-control motions (e.g., falling leaf).

3.5 The Contractor shall consider and evaluate the integration of vehicle health management and guidance and control functions, with emphasis on, but not limited to the following issues: definition and utilization of diagnostic information for control performance effectiveness assessment and; definition and utilization of prognostic information for predicting and averting loss of control conditions and for life extending control.

3.6 The Contractor shall develop guidance and control technologies, investigate flight dynamics, and develop simulation concepts and methods related to multi-vehicle scenarios. Such scenarios include, but are not limited to, formation flight.

4.0 Crew Systems and Aviation Operations

This Work Area includes, but is not limited to: integrated flight deck systems; aircraft self-separation and distributed air traffic management; atmospheric hazard awareness and avoidance; situation awareness assessment; synthetic vision; and human-centered design. These research areas investigate aviation safety and airspace capacity issues such as controlled flight into terrain (CFIT), loss of control in flight, runway incursions, and high density air traffic operations.

4.1 The Contractor shall develop technologies and methods that provide real-time information electronically, to flight crews to improve their situation awareness. Types of real-time information include, but are not limited to: current position in four dimensional space; traffic locations and identity; terrain and obstacle locations; hazardous weather location and type; flight path or surface route information; air traffic control (ATC) instructions; and alerts of impending/potential hazardous situations. The Contractor shall investigate and evaluate display concepts that reduce uncertainties associated with real-time information presentation.

4.2 The Contractor shall develop communication, navigation, and surveillance infrastructure technologies required to acquire, process, and disseminate situation awareness information.

4.3 The Contractor shall develop technologies and methods aimed at increasing the situation awareness of air traffic controllers, including, but not limited to: systems to enable both strategic and tactical collaborative decision making; seamless surveillance; controller-pilot datalink communications (CPDLC); and alerting of path/route deviations by flight crews.

4.4 The Contractor shall investigate and develop technologies, methods and procedures to enable high density operations in the future airspace system. Elements and functions of such operations shall include, but not be limited to: air and ground-based traffic management; all-weather operations; terrain-impacted navigation; and detection and accommodation of wake turbulence.

4.5 The Contractor shall complete all documentation and meet all requirements to conduct experimentation with human subjects, in accordance with NASA Procedural Requirement 7100.1 "Protection of Human Research Subjects" (available at the NASA Online Directives Information System <http://nodis.hq.nasa.gov/>) and the NASA Langley Research Center Institutional Review Board (IRB).

5.0 Reliable and Robust Avionics Systems

This Work Area includes, but is not limited to: mathematical proof of safety properties for software and hardware; quantitative analysis to ensure functionality, reliability, and safety; fault tolerance; fault modeling and emulation; real-time upset detection and recovery; architecture concepts to improve system robustness to disturbances; vehicle health management; commercial-off-the-shelf technology in safety-critical systems; complexity modeling and management; and integrated modular avionics. Specific research topics include, but are not limited to: the prevention and reduction of malfunctions and failures in aircraft systems and components by developing design and assessment tools to verify system design correctness and validate required system functionality; and the investigation, development, and integration of existing and future sensing/processing technologies to enable vehicle-wide health monitoring.

5.1 The Contractor shall develop and demonstrate methods, techniques, and tools for the design, verification, integration, validation, and certification of complex and highly integrated mission and life critical systems. Highly integrated, complex systems are composed of functionally and physically different entities that must operate in seamless and safe coordination. Such entities include, but are not limited to, mechanical, electrical, computational, and human components. The Contractor shall develop methods, techniques, and tools to guarantee that the following systems criteria are met: safety; required performance; design correctness; immunity to disturbances in electromagnetic environments (EME); information integrity and security in presence of malicious and environmental threats; and fault containment, recovery, and accommodation.

5.2 The Contractor shall investigate methods that quantify the system's ability to perform to specification in the presence of faults.

5.3 The Contractor shall develop databases from analytical, simulation, and flight investigations of flight critical systems' performance in failure/damage situations. Such databases shall be capable of providing the basis for new system designs and for new assessment techniques and tools.

5.4 The Contractor shall develop concepts, methods, and technologies for distributed, onboard health diagnostic and prognostic system architectures and algorithms. The Contractor shall validate new health monitoring and diagnostic/prognostic system concepts in the context of catastrophic failure prevention and mitigation, and decreased maintenance costs as it applies to major vehicle systems, including, but not limited to:

5.4.1 Malfunctions and failures of the aircraft propulsion system, such as engine surge, asymmetric thrust, and turbomachinery crack/fatigue growth and propagation.

5.4.2 Damage of the airframe (including the wings, fuselage, and control surface attachment points), such as crack/fatigue growth and propagation, and/or damage resulting from malicious threats.

5.4.3 Anticipated and unanticipated malfunctions and failures of the aircraft flight systems (including the electrical power generation/distribution system; digital computers for guidance, navigation, control, and flight management; crew station computers, displays, cueing, warning, and annunciation systems; the digital data bus; sensors; and control actuation components), such as functional error modes in computers, bus errors, short circuits, blocked Pitot tubes, and faulty sensors and actuators.

5.4.4 Providing crew members with the possible consequences of systems failures, the symptom and indicators of such consequences, and correct crew responses to mitigate consequences.

5.4.5 Providing onboard capability to utilize prognostic data to adapt control strategies that delay the onset of failures and utilize diagnostic data to mitigate failures when they occur.

6.0 Flight Critical Systems Analysis and Integration

This work area includes, but is not limited to, performance of systems engineering in support of novel flight critical systems analysis and development from research concept through simulation and test to flight experiment.

6.1 The Contractor shall conduct the following: requirements analysis; complex system functional decomposition; experimental system specification; experimental system design; system verification and validation; cost-benefit studies; modeling and simulation; configuration management; systems integration; and systems assurance. The Contractor shall perform all analyses and develop all documentation necessary to obtain cognizant safety authority approval as determined by the LaRC Airworthiness and Safety Review Board (ASRB). This includes experimental flight system(s) flown on NASA aircraft, or Contractor-owned and university-owned aircraft funded by NASA.

SECTION D - PACKAGING AND MARKING

D.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

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

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

SECTION E - INSPECTION AND ACCEPTANCE

E.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.246-9	APR 1984	INSPECTION OF RESEARCH AND DEVELOPMENT (SHORT FORM)

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

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

E.2 HUMAN SPACE FLIGHT ITEM (NASA 1852.246-73) (MARCH 1997)

The Contractor shall include the following statement in all subcontracts and purchase orders placed by it in support of this contract, without exception as to amount or subcontract level:

"FOR USE IN HUMAN SPACE FLIGHT; MATERIALS, MANUFACTURING, AND WORKMANSHIP OF HIGHEST QUALITY STANDARDS ARE ESSENTIAL TO ASTRONAUT SAFETY.

IF YOU ARE ABLE TO SUPPLY THE DESIRED ITEM WITH A HIGHER QUALITY THAN THAT OF THE ITEMS SPECIFIED OR PROPOSED, YOU ARE REQUESTED TO BRING THIS FACT TO THE IMMEDIATE ATTENTION OF THE PURCHASER."

SECTION F - DELIVERIES OR PERFORMANCE

F.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.211-15	SEP 1990	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS
52.242-15	AUG 1989	STOP-WORK ORDER (ALTERNATE I) (APR 1984)
52.247-34	NOV 1991	F.O.B. DESTINATION

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

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

F.2 PERIOD OF PERFORMANCE (LaRC 52.211-91) (NOV 2002)

The period for issuance of task orders is 60 months from the effective date of this contract.

F.3 DELIVERY REQUIREMENTS (LaRC 52.211-96) (APR 2002)

Delivery shall be f.o.b. destination:

National Aeronautics and Space Administration
Langley Research Center
4 South Marvin Street (Bldg. 1206)
Hampton VA 23681-2199

or as specified in each task order.

F.4 PLACE(S) OF PERFORMANCE (LaRC 52.211-98) (OCT 1992)

The place(s) of performance shall be:

The Contractor's facility located in Fort Worth, Texas, Palmdale, California and Marietta, Georgia, at subcontractor facilities and other sites as may be specified by task orders.

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

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

CLAUSE NUMBER	DATE	TITLE
1852.216-75	DEC 1988	PAYMENT OF FIXED FEE
1852.242-73	NOV 2004	NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING
1852.245-70	JUL 1997	CONTRACTOR REQUESTS FOR GOVERNMENT-OWNED EQUIPMENT

G.2 SUBMISSION OF VOUCHERS FOR PAYMENT (NFS 1852.216-87) (MAR 1998)

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

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

NASA Langley Research Center
MS 175/ Accounts Payable
Hampton VA 23681

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

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

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

(1) One original Standard Form (SF) 1034, SF 1035, or equivalent Contractor's attachment to the Contractor's DCAA office.

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

(i) Copy 1 NASA Contracting Officer

(ii) Copy 2 Auditor

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

(d) (1) Public vouchers for payment of fee shall be prepared similarly to the procedures in paragraphs (b) or (c) of this clause, whichever is applicable, and be forwarded to:

NASA Langley Research Center
MS 175 / Accounts Payable
Hampton VA 23681

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

(2) Fixed fee shall be paid in monthly installments based upon the percentage of completion of work as determined by the Contracting Officer. The following formulas are provided as a convenience for calculating the interim fee provided the formulas produce a reasonable percentage as compared to completion of work. You should show both formulas on your fee voucher, however, the maximum fee percentage for fee billing is the smaller of the percentages resulting from the application of the two formulas. If at any time the Contracting Officer determines that the fee percentage is not consistent with the completion of work, the fee formula will be adjusted, or another methodology that results in comparative fee billing agree upon.

(#) $\frac{\text{Cost Incurred to Date}}{\text{Contract Estimated Cost}} = \%$

(#) $\frac{\text{Months of Performance Expended to Date}}{\text{Contract Period of Performance (Months)}} = \%$

(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.

G.3 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:

New Technology Representative
Office Code 141
NASA Langley Research Center
Hampton, VA 23681-2199

Patent Representative
Office Code 141
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.

G.4 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (NFS 1852.245-73) (OCT 2003)

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

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

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

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

(c) (1) The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that

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

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

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

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

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

CLAUSE NUMBER	DATE	TITLE
1852.208-81	NOV 2004	RESTRICTIONS ON PRINTING AND DUPLICATING
1852.223-70	APR 2002	SAFETY AND HEALTH
1852.223-74	NOV 2004	DRUG- AND ALCOHOL-FREE WORKFORCE
1852.223-75	FEB 2002	MAJOR BREACH OF SAFETY OR SECURITY
1852.242-78	APR 2001	EMERGENCY MEDICAL SERVICES AND EVACUATION
1852.244-70	APR 1985	GEOGRAPHIC PARTICIPATION IN THE AEROSPACE PROGRAM

H.2 SECURITY CLASSIFICATION REQUIREMENTS (NASA 1852.204-75) (SEP 1989)

Performance under this contract will involve access to and/or generation of classified information, work in a security area, or both, up to the level of Secret, as Determined in Individual Task Orders. See Federal Acquisition Regulation clause 52.204-2 in this contract and DD Form 254, Contract Security Classification Specification, Exhibit B.

H.3 SECURITY PROGRAM/NON-U.S. CITIZEN EMPLOYEE ACCESS REQUIREMENTS (LaRC 52.204-91) (OCT 2003)

(a) Access to the LaRC by contractor non-U.S. citizen employees, including employees in permanent resident alien status, shall be approved in accordance with NPG 1371.2 and LMS-CP-4850-- "Non-U.S. Citizen(s)/Foreign Representative(s) Visitor Approval". Administrative processing requires advance notice of between 20 to 45 days depending on the nationality of the non-U.S. citizen. Access authorization shall be for a maximum of one year, and must be reevaluated annually. Non-U.S. citizen employees must be under escort at all times while on Center by a U.S. citizen issued a LaRC identification badge.

(b) Request for Center access in excess of 90 days requires that a background investigation be conducted on the non-U.S. citizen employee. The processing of a background investigation requires the submittal of a NASA Form 531, "Name Check Request," and a fingerprint card application. Normal processing time for a background investigation is approximately 90 days. A favorably adjudicated background investigation shall allow non-U.S. citizen contractor employee limited unescorted access to the Center. Access shall be limited to work areas identified and deemed necessary and entry and egress to that site.

H.4 RELEASE OF SENSITIVE INFORMATION (NFS 1852.237-73) (JUNE 2005)

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

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

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

Mark the title page with the following legend:

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

H.5 OBSERVATION OF REGULATIONS AND IDENTIFICATION OF CONTRACTOR'S EMPLOYEES (LaRC 52.211-104) (APR 2002)

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

(b) Identification Badges--At all times while on LaRC property, the Contractor shall require its employees, Subcontractors and agents to wear badges which will be issued by the NASA LaRC Badge and Pass Office, located at 1 Langley Boulevard (Building No. 1228). Badges shall be issued only between the hours of 6:30 a.m. and 3:30 p.m., Monday through Friday. Contractors will be held accountable for these badges, and may be required to validate outstanding badges 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 Outprocessing--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.

H.6 INCORPORATION OF SECTION K OF THE PROPOSAL BY REFERENCE (LaRC 52.215-107) (NOV 2002)

Pursuant to FAR 15.204-1(b), the completed Section K of the proposal is hereby incorporated by reference.

H.7 Reserved**H.8 TASK ORDERING PROCEDURE (NFS 1852.216-80) (OCT 1996)**

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

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

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

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

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

(c) Within 14 calendar 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 3 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.

H.9 TASK ORDER SOLICITATION AND SELECTION PROCEDURES (LaRC 52.216-97) (OCT 2004)

(a) Each Contractor will be given a fair opportunity to be considered for each order in accordance with FAR 16.505. This contract includes no requirement for the Contractor to submit a proposal for any individual task order. The costs of preparing proposals for individual task orders under the contract will not be an allowable direct charge to the contract. However, these costs may be an allowable cost to the normal bid and proposal indirect cost pursuant to FAR 31.205-18.

The contracting officer (CO) will consider past performance, quality of services and/or deliverables, final proposed cost/price or other factors the contracting officer believes are relevant.

Contractors need not be given an opportunity to be considered for a particular order in excess of \$2,500 under multiple Task Order contracts if the CO determines that-

1. The agency need for such supplies or services is of such urgency that providing such opportunity would result in unacceptable delays;
2. Only one such Contractor is capable of providing such supplies or services required at the level of quality required because the supplies or services ordered are unique or highly specialized;

3. The order should be issued on a sole-source basis in the interest of economy and efficiency as a logical follow-on to an order already issued under the contract, provided that all Contractors were given a fair opportunity to be considered for the original order; or
4. It is necessary to place an order to satisfy a minimum guarantee.

(b) The CO need not contact each of the multiple award Contractors before selecting an order awardee if the contracting officer has information available to ensure that each multiple Contractor is provided a fair opportunity to be considered for each order.

(c) For those orders, which are competed among the multiple contract awardees, the CO will provide a solicitation to each Contractor and will request a proposal in accordance with H.8, Task Ordering Procedure. The solicitation will include a Statement of Work, specifications, or drawings; required delivery date, any special instructions or provisions, and any selection criteria to be used to award the Task Order which differs from that specified in H.8. Prior to awarding the Task Order, all awardees will be required to provide a task plan that may include the following: 1) technical approach, 2) implementation plan (including staffing, proposed facilities and Subcontractors), 3) estimated cost including breakouts of the estimated labor hours and all costs to perform the Task Order, and 4) proposed fee. As required by NASA FAR Supplement 1815.404-471-5(a), when FCCOM is included as an item of cost in the Contractor's proposal, a reduction in the profit/fee objective will be made in an amount equal to the amount of FCCOM allowed in accordance with FAR 31.205-10(a)(2) or 1 percent of the cost base, whichever is less. The level of detail in each Task Plan will be dependent on the complexity of the requirement. Upon selection of an awardee, the CO and Contracting Officer Technical Representative (COTR) will review the task plan and cost estimate to complete the work. The contracting officer will negotiate any necessary changes with the Contractor. The final cost estimate represents the baseline to be used for reporting in Columns 7b and 7d of NASA Form 533M (See Exhibit A).

(d) Orders may be issued by facsimile or electronic commerce methods.

(e) No protest is authorized in connection with this contract except for a protest on the grounds that the order increases the scope, period, or maximum value of the contract.

(f) In the case where only one award is made as a result of this solicitation or if the CO determines that the Task Order shall not be competed (based on criteria stated in Paragraph A above), the following Task Order initiation procedure apply:

1. The COTR will provide a Statement of Work, specifications, or drawings; required delivery date, any special instructions or provisions to the Contractor.
2. The Contractor will be required to provide a task plan, which shall include a discussion of their technical approach for performing the work and an estimated cost for the proposed Task Order in accordance with H.8, Task Ordering Procedure. The estimated cost shall include breakouts of the estimated labor hours and costs to perform the Task Order.
3. The CO and COTR will review the task plan and cost estimate to complete the work. The CO will negotiate necessary changes with the Contractor.
4. The final negotiated cost estimate shall represent the baseline to be used for reporting in Columns 7b and 7d of NASA Form 533M (See Exhibit A).

H.10 SMALL DISADVANTAGED BUSINESS PARTICIPATION--CONTRACT TARGETS (LaRC 52.219-91) (OCT 2002) (for offeror fill-in)

Fill-In: By offeror

(a) This clause does not apply to, and should not be completed by Small Disadvantaged Business (SDB) offerors unless the SDB offeror has waived the price adjustment evaluation adjustment [see Paragraph (c) of FAR clause 52.219-23].

(b) FAR 19.1202-4(a) requires that SDB participation targets be incorporated in the contract. Targets for this contract are as follows: (See Internet at <http://www.census.gov/epcd/www/naics.html> for Department of Commerce NAICS Industry Subsectors.)

	<u>Department of Commerce NAICS Industry Subsector</u>	<u>Dollar Target</u>	<u>Percent of Contract Value</u>
Year 1	334511	\$350,000	5%
Year 2	334511	\$350,000	5%
Year 3	334511	\$350,000	5%
Year 4	334511	\$350,000	5%
Year 5	334511	\$350,000	5%

(c) FAR 19.1202-4(b) requires that SDB concerns that are specifically identified by the offeror be listed in the contract when the extent of the identification of such Subcontractors was part of the SDB evaluation subfactor. SDB concerns (Subcontractors) specifically identified by the offeror are as follows:

Name of Concern(s):

Barron Associates, Inc.

Others as identified/required under each Task Order.

The Contractor shall notify the Contracting Officer of any substitutions of firms that are not SDB concerns.

(d) If the prime offeror is an SDB (including joint venture partners and team members) that has waived the price evaluation adjustment, the target for the work it intends to perform as a prime Contractor in authorized Department of Commerce NAICS Industry Subsectors is as follows:

	<u>Percent of Dollars</u>	<u>Contract Value</u>
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		

NOTE: Because of the nature of this contract (i.e., Task Order IDIQ), the Government will annually evaluate the Contractor's performance in meeting the SDB NAICS Industry Standard goals based on the percentages proposed by the contractor within this clause and not based on the proposed dollar target amounts.

H.11 FLIGHT TEST OPERATIONS AND SAFETY REPORT (FTOSR) INFORMATION (LaRC 52.223-91) (OCT 2004)

The Technical Point of Contact (POC) and/or COTR must submit a Flight Test Operations and Test and Safety Report (FTOSR) to the Airworthiness and Safety review Board (ASRB) for evaluation and approval in order to obtain a Flight Safety Release letter. The Contractor shall support the Technical Point of Contact (POC) and/or COTR to obtain this Flight Safety Release letter when work performed under this contract requires experiments to be flown on or involving aircraft (including balloon borne experiments/instruments) whose flights occur within the Earth's sensible atmosphere. Specifically such flights include full-scale aircraft or aircraft models, either manned or unmanned and either powered or un-powered. No flight test/flight experiment shall be conducted until a Flight Safety Release letter is obtained. This is applicable for aircraft that are either NASA, University or Contractor-owned. The Contractor shall develop the FTOSR or information required for the FTOSR. The Flight Safety Release letter is obtained by the Technical Point of Contact (POC) and/or COTR from the LaRC Airworthiness and Safety Review Board (ASRB) per the requirements of LMS-CP-5580 Airworthiness and Safety Review Board process, and in accordance with LAPD-1710.1 Langley Research Center Aviation Safety Policy and LPR 1710.16 Aviation Operations and Safety Manual. An outline for the FTOSR is provided below. If an item in the FTOSR does not apply, the item must be marked as such and a brief reason why it does not apply.

Flight Test Operations and Safety Report (FTOSR) Outline:**A. Cover Sheet w/ Approvals****B. Program/Project Overview:**

1. Program Objectives & General Description
2. Program Management
3. Selected Aircraft
4. Proposed Aircraft Modifications & Design Criteria
5. Instrumentation Hardware/software & Flt Test
6. Data Measurement Requirements
7. Contractual Requirements
8. Other Involved Agencies
9. Summary of Supporting Research & Tests (includes minutes of design review activities)
10. Analytical
11. Wind Tunnel
12. Simulation
13. Ground Operating Systems Check out
14. Proposed Schedule Milestones

C. Flight Test Operations:

1. Location
2. Flight Tests Start Date
3. Number of Flights
4. Flight Frequency
5. Test Procedures (incl. maneuvers)
6. Support Requirements:
7. Support Organization & Responsibilities
8. Transportation to Test Location
9. Chase Aircraft
10. Photo/TV Coverage
11. Tracking
12. Radar
13. Optical

14. Beacon (incl. frequency)
15. Telemetry
16. Communications
17. Meteorological
18. Data
19. Real Time
20. Quick Look
21. Processed
22. Other Special Support Requirements

D. Safety:

1. System Safety Program Plan
2. Risk Assessment
3. Hazard Analysis
4. General Operational Restrictions & Conditions
5. Weather
6. Personal Equipment
7. Minimum On-board Equipment
8. Weight/Balance
9. Flight Test Envelope
10. Abort Procedures
11. Emergency Plans & Procedures
12. Configuration Control Responsibilities
13. Other

H.12 EXPORT LICENSES (NFS 1852.225-70) (FEB 2000)

(a) The Contractor shall comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.

(b) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at NASA Langley Research Center, where the foreign person will have access to export-controlled technical data or software.

(c) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(d) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its Subcontractors.

H.13 LaRC 52.227-28 HANDLING OF DATA (MAY 2003)

(a) "DATA," as used in this clause, means recorded information, regardless of the form, the media on which it may be recorded, or the method of recording. The term includes, but is not limited to, models, photographs, lab notebooks, diagrams, drawings, information subject to the Privacy Act, information of a scientific or technical nature, computer software and documentation thereof, and information of a commercial or financial nature.

(b) In the performance of this contract the Contractor will have access to, be furnished, generate, or use one or more of the following categories of DATA:

- (1) DATA of third parties that the Government has agreed to handle under protective arrangements;
- (2) Government DATA, the use and dissemination of which the Government intends to control or is required to control by law; or
- (3) DATA that the Contractor will create or assist in creating under this contract that the Government has agreed to handle under protective arrangements or indicates that it intends to control.

(c) In order to protect the interests of the Government and the owners, licensors and licensees of such DATA, the Contractor agrees, with respect to any of the types of DATA identified in paragraph (b), above, that is either marked with a restrictive legend, specifically identified to the Contractor as DATA being generated and to be marked with a restrictive legend, or otherwise identified in writing by the Contracting Officer or his or her representative as being subject to this clause, to:

- (1) Use, disclose, and reproduce such DATA only to the extent necessary to perform the work required under this contract;
- (2) Allow access to such DATA only to those of its employees that require access for their performance under this contract;
- (3) Preclude access and disclosure of such DATA by the Contractor's personnel outside of that portion of the Contractor's organization needed for the performance of the Contractor's duties under this contract; and
- (4) Return or dispose of such DATA, as the Contracting Officer or his or her representative may direct when the DATA is no longer needed for contract performance.

(d) In the event that DATA includes a legend that the Contractor deems to be ambiguous or unauthorized, the Contractor shall inform the Contracting Officer of such condition. Notwithstanding the ambiguous or unauthorized nature of such a legend, as long as the legend provides an indication that a restriction on the use or disclosure was intended, the Contractor shall treat such DATA pursuant to the requirements of this clause unless otherwise directed, in writing, by the Contracting Officer.

(e) Subject to the notice requirements in (f), below, the Contractor shall not be restricted in the use, disclosure, and reproduction of DATA that:

- (1) Is, or becomes, generally available or public knowledge without breach of this clause by the Contractor or its employees;
- (2) Is known to the Contractor at the time of disclosure; has been disclosed to the Contractor without restriction from the Government; or has been independently developed by the Contractor outside of the Contractor's activities under this contract;
- (3) Has become known to the Contractor without similar restrictions from a source other than the Government or any party having work performed under this contract, that source having the right to disclose such DATA; or
- (4) The Contractor is required to produce such DATA pursuant to a court order or similar Government action.

(f) If the Contractor believes that any event or condition removes the restrictions on their use, disclosure, or reproduction of DATA, the Contractor shall promptly notify the Contracting Officer in writing of such belief before acting on such belief, and, in any event, shall give written notice to the Contracting Officer before unrestricted use, disclosure, or reproduction of such DATA.

(g) Before the Contractor has access to DATA identified in paragraph (b), above, the Contractor shall provide the Contracting Officer an acceptable written plan by which it intends to assure that its personnel who have or might reasonably have access to any such DATA, will honor the Contractor's obligation to safeguard such DATA. Should the Contracting Officer consider the proposed plan inadequate, the Contractor will be advised of the inadequacy and the Contractor will provide a revised plan. The Contracting Officer may suspend work under this contract, at no cost to the Government, until such time as the written plan of the Contractor is considered acceptable to the Contracting Officer.

(h) The Contractor agrees to inform and instruct its employees of its and their obligations under this clause and to appropriately bind its employees contractually to comply with the access, use, disclosure, and reproduction provisions of this clause.

H.14 AIRCRAFT FLIGHT RISKS (NFS 1852.228-71) (DECEMBER 1988)

(a) Notwithstanding any other provision of this contract (particularly paragraph (g) of the Government Property (Cost-Reimbursement, Time-and-Materials, or Labor-Hour Contracts) clause and paragraph (c) of the Insurance--Liability to Third Persons clause), the Contractor shall not (1) be relieved of liability for damage to, or loss or destruction of, aircraft sustained during flight or (2) be reimbursed for liabilities to third persons for loss of or damage to property or for death or bodily injury caused by aircraft during flight, unless the flight crew members have previously been approved in writing by the Contracting Officer.

(b) For the purposes of this clause--

(1) Unless otherwise specifically provided in the Schedule, "aircraft" includes any aircraft, whether furnished by the Contractor under this contract (either before or after Government acceptance) or furnished by the Government to the Contractor under this contract, including all Government property placed or installed or attached to the aircraft, unless the aircraft and property are covered by a separate bailment agreement.

(2) "Flight" includes any flight demonstration, flight test, taxi test, or other flight made in the performance of this contract, or for the purpose of safeguarding the aircraft, or previously approved in writing by the Contracting Officer.

(i) With respect to land-based aircraft, flight commences with the taxi roll from a flight line and continues until the aircraft has completed the taxi roll to a flight line.

(ii) With respect to sea-planes, flight commences with the launching from a ramp and continues until the aircraft has completed its landing run and is beached at a ramp.

(iii) With respect to helicopters, flight commences upon engagement of the rotors for the purpose of take-off and continues until the aircraft has returned to the ground and rotors are disengaged.

(iv) With respect to vertical take-off aircraft, flight commences upon disengagement from any launching platform or device and continues until the aircraft has been re-engaged to any launching platform or device.

(3) "Flight crew members" means the pilot, copilot, and, unless otherwise specifically provided in the Schedule, the flight engineer and navigator when required or assigned to their respective crew positions to conduct any flight on behalf of the Contractor.

- (c) (1) If any aircraft is damaged, lost, or destroyed during flight and the amount of the damage, loss, or destruction exceeds \$100,000 or 20 percent of the estimated cost, exclusive of any fee, of this contract, whichever is less, and if the Contractor is not liable for the damage, loss, or destruction under the Government Property (Cost-Reimbursement, Time-and-Materials, or Labor-Hour Contracts) clause of this contract or under paragraph (a) of this clause, an equitable adjustment for any resulting repair, restoration, or replacement required under this contract shall be made (i) in the estimated cost, the delivery schedule, or both and (ii) in the amount of any fee to be paid to the Contractor, and the contract shall be modified in writing accordingly.
- (2) In determining the amount of adjustment in the fee that is equitable, any fault of the Contractor, its employees, or any Subcontractor that materially contributed to the damage, loss, or destruction shall be taken into consideration.

H.15 MINIMUM INSURANCE COVERAGE (NASA 1852.228-75) (OCT 1988)

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

- (a) Worker's compensation and employer's liability insurance as required by applicable Federal and state workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when contract operations are so commingled with the Contractor's commercial operations that it would not be practical. The employer's liability coverage shall be at least \$100,000, except in States with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.
- (b) Comprehensive general (bodily injury) liability insurance of at least \$500,000 per occurrence.
- (c) Motor vehicle liability insurance written on the comprehensive form of policy which provides for bodily injury and property damage liability covering the operation of all motor vehicles used in connection with performing the contract. Policies covering motor vehicles operated in the United States shall provide coverage of at least \$200,000 per person and \$500,000 per occurrence for bodily injury liability and \$20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.
- (d) Comprehensive general and motor vehicle liability policies shall contain a provision worded as follows:
- "The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy."
- (e) When aircraft are used in connection with performing the contract, aircraft public and passenger liability insurance of at least \$200,000 per person and \$500,000 per occurrence for bodily injury, other than passenger liability, and \$200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least \$200,000 multiplied by the number of seats or passengers, whichever is greater.

**H.16 FINAL SCIENTIFIC AND TECHNICAL REPORTS (NFS 1852.235-73) (FEB 2003)
(ALTERNATE II) (FEB 2003)**

(a) The Contractor shall submit to the Contracting Officer a final report that summarizes the results of the entire contract, including recommendations and conclusions based on the experience and results obtained. The final report should include tables, graphs, diagrams, curves, sketches, photographs, and drawings in sufficient detail to explain comprehensively the results achieved under the contract.

(b) The final report shall be of a quality suitable for publication and shall follow the formatting and stylistic guidelines contained in NPG 2200.2A, Guidelines for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information. Electronic formats for submission of reports should be used to the maximum extent practical. Before electronically submitting reports containing scientific and technical information (STI) that is export-controlled or limited or restricted, contact the Contracting Officer to determine the requirements to electronically transmit these forms of STI. If appropriate electronic safeguards are not available at the time of submission, a paper copy or a CD-ROM of the report shall be required. Information regarding appropriate electronic formats for final reports is available at <http://www.sti.nasa.gov> under "Publish STI - Electronic File Formats."

(c) The last page of the final report shall be a completed Standard Form (SF) 298, Report Documentation Page.

(d) In addition to the final report submitted to the Contracting Officer, the Contractor shall concurrently provide to the Center STI/Publication Manager and the NASA Center for AeroSpace Information (CASI) a copy of the letter transmitting the final report to the Contracting Officer. The copy of the letter shall be submitted to CASI at the following address:

Center for AeroSpace Information (CASI)
Attn: Acquisitions Collections Development Specialist
7121 Standard Drive
Hanover, Maryland 21076-1320

(e) Data resulting from this research activity may be subject to export control, national security restrictions or other restrictions designated by NASA; or, to the extent the Contractor receives or is given access to data necessary for the performance of the contract which contain restrictive markings, may include proprietary information of others. Therefore, the Contractor shall not publish, release, or otherwise disseminate, except to NASA, data produced during the performance of this contract, including data contained in the final report and any additional reports required by 1852.235-74 when included in the contract, without prior review by NASA. Should the Contractor seek to publish, release, or otherwise disseminate data produced during the performance of this contract, the Contractor may do so once NASA has completed its document availability authorization review and the availability of the data has been determined.

H.17 MULTIPLE AWARD CONTRACTS

Orders under this multiple award contract will be placed in accordance with FAR 16.505 and H.8, Task Ordering Procedure. Unless otherwise stated in an individual Task Order Request, the selection criteria to be considered to provide multiple awardees a fair opportunity to be considered for award for each order are: technical approach, cost, and past performance. Unless otherwise stated in an individual Task Order Request, these criteria will be considered of essentially equal importance.

H.18 Reserved**H.19 PROFIT AND FEE ON TASK ORDERS**

Individual cost plus fixed fee Task Orders will be negotiated as a result of proposals submitted for each Task Order. The fixed fee rate accepted or negotiated by the Contracting Officer for the initial requirement under any specific Task Order will be the maximum rate applied to all change or modification actions involving work not previously specified in the Task Order.

H.20 SMALL BUSINESS SUBCONTRACTING PLAN

The Small Business Subcontracting Plan is attached as Exhibit D to this contract. Because of the nature of this contract (i.e., Task Order IDIQ), the Government will annually evaluate the Contractor's performance in meeting the Small Business Subcontracting goals based on the percentages proposed by the contractor in the Small Business Subcontracting Plan.

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.202-1	JUN 2004	DEFINITIONS
52.203-3	APR 1984	GRATUITIES
52.203-5	APR 1984	COVENANT AGAINST CONTINGENT FEES
52.203-6	JUL 1995	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT
52.203-7	JUL 1995	ANTI-KICKBACK PROCEDURES
52.203-8	JAN 1997	CANCELLATION, RESCISSION AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY
52.203-10	JAN 1997	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY
52.203-12	JUN 2003	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS
52.204-2	AUG 1996	SECURITY REQUIREMENTS
52.204-4	AUG 2000	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER
52.204-7	OCT 2003	CENTRAL CONTRACTOR REGISTRATION
52.209-6	JUL 1995	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT
52.215-2	JUN 1999	AUDIT AND RECORDS--NEGOTIATION
52.215-8	OCT 1997	ORDER OF PRECEDENCE - UNIFORM CONTRACT FORMAT
52.215-11	OCT 1997	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA-- MODIFICATIONS
52.215-13	OCT 1997	SUBCONTRACTOR COST OR PRICING DATA - MODIFICATIONS
52.215-14	OCT 1997	INTEGRITY OF UNIT PRICES
52.215-15	OCT 2004	PENSION ADJUSTMENTS AND ASSET REVERSIONS
52.215-17	OCT 1997	WAIVER OF FACILITIES CAPITAL COST OF MONEY

52.215-21	OCT 1997	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA – MODIFICATIONS (ALTERNATE IV) (OCT 1997) Insert (b) Provide information described below: <u>The Contractor shall submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408, unless otherwise stated by the Contracting Officer.</u>
52.216-7	DEC 2002	ALLOWABLE COST AND PAYMENT Insert 30 th in Paragraph (a)(3).
52.216-8	MAR 1997	FIXED FEE
52.217-8	NOV 1999	Option to Extend Services (Nov 99) Insert 30 Days
52.219-8	OCT 2000	UTILIZATION OF SMALL BUSINESS CONCERNS
52.219-9	JAN 2002	SMALL BUSINESS SUBCONTRACTING PLAN (ALTERNATE II) (OCT 2001)
52.219-16	JAN 1999	LIQUIDATED DAMAGES SUBCONTRACTING PLAN
52.222-1	FEB 1997	NOTICE TO THE GOVERNMENT OF LABOR DISPUTES
52.222-2	JUL 1990	PAYMENT FOR OVERTIME PREMIUMS Insert "\$ TBD per task order requiring Contracting Officer's approval" in paragraph (a).
52.222-3	JUN 2003	CONVICT LABOR
52.222-21	FEB 1999	PROHIBITION OF SEGREGATED FACILITIES
52.222-26	APR 2002	EQUAL OPPORTUNITY
52.222-35	DEC 2001	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.222-36	JUN 1998	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES
52.222-37	DEC 2001	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.223-6	MAY 2001	DRUG-FREE WORKPLACE
52.223-14	AUG 2003	TOXIC CHEMICAL RELEASE REPORTING
52.225-13	DEC 2003	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES
52.225-16	FEB 2000	SANCTIONED EUROPEAN UNION COUNTRY SERVICES
52.227-1	JUL 1995	AUTHORIZATION AND CONSENT (ALTERNATE I) (APR 1984)
52.227-2	AUG 1996	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT
52.227-10	APR 1984	FILING OF PATENT APPLICATIONS-- CLASSIFIED SUBJECT MATTER
52.227-11	JUN 1997	PATENT RIGHTS--RETENTION BY THE CONTRACTOR (SHORT FORM) (AS MODIFIED BY NFS 1852.227-11) (MAY 2002)
52.227-14	JUN 1987	RIGHTS IN DATA--GENERAL As modified by 1852.227-14 NASA FAR Supplement (OCT 1995)
52.227-16	JUN 1987	ADDITIONAL DATA REQUIREMENTS
52.228-7	MAR 1996	INSURANCE--LIABILITY TO THIRD PERSONS
52.230-2	APR 1998	COST ACCOUNTING STANDARDS
52.230-3	APR 1998	DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES
52.230-6	NOV 1999	ADMINISTRATION OF COST ACCOUNTING STANDARDS

52.232-9	APR 1984	LIMITATION ON WITHHOLDING OF PAYMENTS
52.232-17	JUN 1996	INTEREST
52.232-22	APR 1984	LIMITATION OF FUNDS
52.232-23	JAN 1986	ASSIGNMENT OF CLAIMS
52.232-25	OCT 2003	PROMPT PAYMENT
52.232-34	MAY 1999	PAYMENT BY ELECTRONIC FUNDS TRANSFER--OTHER THAN CENTRAL CONTRACTOR REGISTRATION
		Insert <u>No later than 15 days prior to the submission of the first request for payment in Paragraph (b)(1).</u>
52.233-1	JUL 2002	DISPUTES (ALTERNATE I) (DEC 1991)
52.233-3	AUG 1996	PROTEST AFTER AWARD (ALTERNATE I) (JUN 1985)
52.233-4	OCT 2004	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM
52.242-1	APR 1984	NOTICE OF INTENT TO DISALLOW COSTS
52.242-3	MAY 2001	PENALTIES FOR UNALLOWABLE COSTS
52.242-4	JAN 1997	CERTIFICATION OF FINAL INDIRECT COSTS
52.242-13	JUL 1995	BANKRUPTCY
52.244-5	DEC 1996	COMPETITION IN SUBCONTRACTING
52.244-6	APR 2003	SUBCONTRACTS FOR COMMERCIAL ITEMS
52.245-5	JUN 2003	GOVERNMENT PROPERTY (COST- REIMBURSEMENT, TIME-AND- MATERIAL, OR LABOR-HOUR CONTRACTS)
52.245-18	FEB 1993	SPECIAL TEST EQUIPMENT
52.245-19	APR 1984	GOVERNMENT PROPERTY FURNISHED "AS IS"
52.246-23	FEB 1997	LIMITATION OF LIABILITY
52.246-25	FEB 1997	LIMITATION OF LIABILITY-SERVICES
52.249-6	MAY 2004	TERMINATION (COST-REIMBURSEMENT)
52.249-14	APR 1984	EXCUSABLE DELAYS
52.253-1	JAN 1991	COMPUTER GENERATED FORMS

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

CLAUSE NUMBER	DATE	TITLE
1852.203-70	JUN 2001	DISPLAY OF INSPECTOR GENERAL HOTLINE POSTERS
1852.216-89	JUL 1997	ASSIGNMENT AND RELEASE FORMS
1852.219-74	SEP 1990	USE OF RURAL AREA SMALL BUSINESSES
1852.219-76	JUL 1997	NASA 8 PERCENT GOAL
1852.227-70	MAY 2002	NEW TECHNOLOGY
1852.235-70	FEB 2003	CENTER FOR AEROSPACE INFORMATION
1852.243-71	MAR 1997	SHARED SAVINGS

I.2 CLAUSES IN FULL TEXT

The clauses listed below follow in full text:

<u>CLAUSE NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
52.216-18	OCT 1995	ORDERING
52.216-19	OCT 1995	ORDER LIMITATIONS
52.216-22	OCT 1995	INDEFINITE QUANTITY

52.219-4	OCT 2004	NOTICE OF EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS
52.219-23	JUN 2003	NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS
52.219-25	OCT 1999	SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM-DISADVANTAGED STATUS AND REPORTING
52.227-23	JUN 1987	RIGHTS TO PROPOSAL DATA (TECHNICAL)
52.244-2	AUG 1998	SUBCONTRACTS (ALTERNATE I) (AUG 1998)
52.252-2	FEB 1998	CLAUSES INCORPORATED BY REFERENCE
1852.215-84	OCT 2003	OMBUDSMAN (ALTERNATE I) (JUN 2000)
1852.219-75	MAY 1999	SMALL BUSINESS SUBCONTRACTING REPORTING

I.3 ORDERING (FAR 52.216-18) (OCT 1995)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from contract award through 60 months from the effective date of the contract.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

I.4 ORDER LIMITATIONS (FAR 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 \$1,000, 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 \$20,000,000;

(2) Any order for a combination of items in excess of \$20,000,000; or

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

I.5 INDEFINITE QUANTITY (FAR 52.216-22) (OCT 1995)

(a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.

(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum." The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum."

(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after 6 months from the end of the contract period of performance.

I.6 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (FAR 52.219-4) (OCT 2004)

(a) Definition. "HUBZone small business concern," as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference.

(1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

[] Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for--

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade Contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

I.7 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (FAR 52.219-23) (JUNE 2003)

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

"Small disadvantaged business concern" means an offeror that represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

(1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B; and

- (i) No material change in disadvantaged ownership and control has occurred since its certification;
- (ii) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (iii) It is identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net).

(2) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR part 124, subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or

(3) Is a joint venture as defined in 13 CFR 124.1002(f).

"Historically black college or university" means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institution" means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k including, a Hispanic-serving institution of higher education, as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).

(b) Evaluation adjustment. (1) The Contracting Officer will evaluate offers by adding a factor of 10 (TEN) percent to the price of all offers, except--

- (i) Offers from small disadvantaged business concerns that have not waived the adjustment;
- (ii) An otherwise successful offer of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is equaled or exceeded (see section 25.402 of the Federal Acquisition Regulation (FAR));
- (iii) An otherwise successful offer where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government;
- (iv) For DoD, NASA, and Coast Guard acquisitions, an otherwise successful offer from a historically black college or university or minority institution; and
- (v) For DoD acquisitions, an otherwise successful offer of qualifying country end products (see sections 225.000-70 and 252.225-7001 of the Defense FAR Supplement).

(2) The Contracting Officer will apply the factor to a line item or a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b)(1) of this clause.

(c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply to offers that waive the adjustment.

_____ Offeror elects to waive the adjustment.

(d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for--

- (i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;
- (ii) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern;
- (iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or
- (iv) Construction by special trade Contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.

(2) A small disadvantaged business concern submitting an offer in its own name shall furnish in performing this contract only end items manufactured or produced by small disadvantaged business concerns in the United States or its outlying areas. This paragraph does not apply to construction or service contracts.

I.8 SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM--DISADVANTAGED STATUS AND REPORTING (FAR 52.219-25) (OCT 1999)

(a) Disadvantaged status for joint venture partners, team members, and Subcontractors. This clause addresses disadvantaged status for joint venture partners, teaming arrangement members, and Subcontractors and is applicable if this contract contains small disadvantaged business (SDB) participation targets. The Contractor shall obtain representations of small disadvantaged status from joint venture partners, teaming arrangement members, and Subcontractors through use of a provision substantially the same as paragraph (b)(1)(i) of the provision at FAR 52.219-22, Small Disadvantaged Business Status. The Contractor shall confirm that a joint venture partner, team member, or Subcontractor representing itself as a small disadvantaged business concern, is identified as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net) or by contacting the SBA's Office of Small Disadvantaged Business Certification and Eligibility.

(b) Reporting requirement. If this contract contains SDB participation targets, the Contractor shall report on the participation of SDB concerns at contract completion, or as otherwise provided in this contract. Reporting may be on Optional Form 312, Small Disadvantaged Business Participation Report, or in the Contractor's own format providing the same information. This report is required for each contract containing SDB participation targets. If this contract contains an individual Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, reports may be submitted with the final Subcontracting Report for Individual Contracts (Standard Form 294) at the completion of the contract.

I.9 RIGHTS TO PROPOSAL DATA (TECHNICAL) (FAR 52.227-23) (JUN 1987)

Except for data contained on pages (entire proposal), it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data--General" clause contained in this contract) in and to the data contained in the proposal dated 7 February 2005 and revised Business proposal dated 7 April 2005 upon which this contract is based.

I.10 SUBCONTRACTS (FAR 52.244-2) (AUG 1998) (ALTERNATE I)(AUG 1998)

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

"Approved purchasing system" means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR).

"Consent to subcontract" means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

"Subcontract" means any contract, as defined in FAR Subpart 2.1, entered into by a Subcontractor to furnish supplies or services for performance of the prime contract or a subcontract. It includes, but is not limited to, purchase orders, and changes and modifications to purchase orders.

(b) This clause does not apply to subcontracts for special test equipment when the contract contains the clause at FAR 52.245-18, Special Test Equipment.

(c) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modifications or unpriced delivery orders), and only if required in accordance with paragraph (d) or (e) of this clause.

(d) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

(1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or

(2) Is fixed-price and exceeds--

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the simplified acquisition threshold or 5 percent of the total estimated cost of the contract.

(e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

"TBD on a Task Order basis with the exception of those listed in (k) of this clause."

(f) (1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c), (d), or (e) of this clause, including the following information:

(i) A description of the supplies or services to be subcontracted.

(ii) Identification of the type of subcontract to be used.

(iii) Identification of the proposed Subcontractor.

(iv) The proposed subcontract price.

(v) The Subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.

(vi) The Subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.

(vii) A negotiation memorandum reflecting--

(A) The principal elements of the subcontract price negotiations;

(B) The most significant considerations controlling establishment of initial or revised prices;

(C) The reason cost or pricing data were or were not required;

(D) The extent, if any, to which the Contractor did not rely on the Subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;

(E) The extent to which it was recognized in the negotiation that the Subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and the Subcontractor; and the effect of any such defective data on the total price negotiated;

(F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and

(G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(2) If the Contractor has an approved purchasing system and consent is not required under paragraph (c), (d), or (e) of this clause, the Contractor nevertheless shall notify the Contracting Officer reasonably in advance of entering into any (i) cost-plus-fixed-fee subcontract, or (ii) fixed-price subcontract that exceeds the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of this contract. The notification shall include the information required by paragraphs (f)(1)(i) through (f)(1)(iv) of this clause.

(g) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination--

(1) Of the acceptability of any subcontract terms or conditions;

(2) Of the allowability of any cost under this contract; or

(3) To relieve the Contractor of any responsibility for performing this contract.

(h) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement type subcontracts shall not exceed the fee limitations in FAR 15.404-4(c)(4)(i).

(i) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any Subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement from the Government.

(j) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which were evaluated during negotiations:

I.11 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)

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

_____ <http://www.arnet.gov/far/> _____

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

I.12 OMBUDSMAN (NFS 1852.215-84) (OCT 2003) (ALTERNATE I) (JUN 2000)

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and Contractors during the 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, Bruce Holmes, direct inquires to Richard Siebels, NASA Langley Research Center (LaRC), Mail Stop 144, Hampton, VA 23681-2199; phone (757) 864-2418; facsimile (757) 864-7709; email Richard.J.Siebels@nasa.gov.

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

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

I.13 SMALL BUSINESS SUBCONTRACTING REPORTING (NFS 1852.219-75) (MAY 1999)

- (a) The Contractor shall submit the Summary Subcontract Report (Standard Form (SF) 295) semiannually for the reporting periods specified in block 4 of the form. All other instructions for SF 295 remain in effect.
- (b) The Contractor shall include this clause in all subcontracts that include the clause at FAR 52.219-9.

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

J.1 CONTRACT DOCUMENTATION REQUIREMENTS

- Exhibit A Contract Documentation Requirements
- Exhibit B Contract Security Classification Specification, DD Form 254
- Exhibit C Safety and Health Plan
- Exhibit D Subcontracting Plan
- Exhibit E IT Security Implementation Plan

AWARD/CONTRACT		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350) <input checked="" type="checkbox"/>	RATING C-9	PAGE 1 of 40 + Exhibits
2. CONTRACT NO. NNL06AA08B		3. EFFECTIVE DATE See Block 20 C. Below	4. REQUISITION/PURCHASE REQUEST/PROJECT NO. See Block 14. Below	
5. ISSUED BY NASA Langley Research Center 9B Langley Boulevard Hampton, VA 23681-2199		CODE	6. ADMINISTERED BY (if other than item 5) C. Lynn Jenkins, Contracting Officer Mail Stop 126 Phone: 757-864-3284 Fax: 757-864-7709 Email: Lynn.Jenkins@nasa.gov	

7. NAME AND ADDRESS OF CONTRACTOR (No., street, city, country, State and ZIP Code) Lockheed Martin Corporation P.O. Box 748 Fort Worth TX 76101-0748 Name: Kevin Westerman Phone: 817-763-7711 Email: kevin.a.westerman@lmco.com Fax: 817-763-7707 Pager: 1-800-491-3294		Cage Code: 81755 TIN: 52-1893632	8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input checked="" type="checkbox"/> FOB Destination
			9. DISCOUNT FOR PROMPT PAYMENT Net 30
			10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN

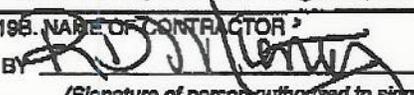
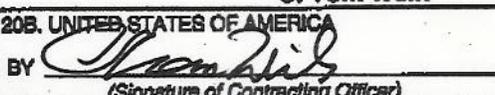
CODE:	FACILITY CODE	IN: > ITEM Contract Para. G2
11. SHIP TO/MARK FOR	CODE	12. PAYMENT WILL BE MADE BY MS 175/Comm Acctg Section NASA Langley Research Center Hampton, VA 23681-2199

13. AUTHORITY FOR USING OTHER THAN FULL & OPEN COMPETITION: <input checked="" type="checkbox"/> 10 U.S.C. 2304(c) (1) <input checked="" type="checkbox"/> 41 U.S.C. 253(c) (1)	14. ACCOUNTING AND APPROPRIATION DATA 4200139727 \$25,000 (Complete)
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15A. ITEM NO.	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
1	TITLE: "Flight Critical Systems Research (FCSR)" 5-Year IDIQ Task Order Contract.	1	EA	See Contract Para. B.2	See Contract Para. B.2
15G. TOTAL AMOUNT OF CONTRACT >					See B.2

16. TABLE OF CONTENTS							
(X)	.SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
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<input checked="" type="checkbox"/>	A	SOLICITATION/CONTRACT FORM	1	<input checked="" type="checkbox"/>	I	CONTRACT CLAUSES	28
<input checked="" type="checkbox"/>	B	SUPPLIES OR SERVICES AND PRICES/COSTS	2	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
<input checked="" type="checkbox"/>	C	DESCRIPTION/SPECS./WORK STATEMENT	3	<input checked="" type="checkbox"/>	J	LIST OF ATTACHMENTS	40
<input checked="" type="checkbox"/>	D	PACKAGING AND MARKING	7	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
<input checked="" type="checkbox"/>	E	INSPECTION AND ACCEPTANCE	8	<input type="checkbox"/>	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	
<input checked="" type="checkbox"/>	F	DELIVERIES OR PERFORMANCE	9	<input type="checkbox"/>	L	INSTRS., CONDS., AND NOTICES TO OFFERORS	
<input checked="" type="checkbox"/>	G	CONTRACT ADMINISTRATION DATA	10	<input type="checkbox"/>	M	EVALUATION FACTORS FOR AWARD	
<input checked="" type="checkbox"/>	H	SPECIAL CONTRACT REQUIREMENTS	14				

CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17. <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 1 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (attachments are listed herein.)		18. <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.	
19A. NAME AND TITLE OF SIGNER (Type or print) R. D. Mieritz, Contracts Negotiation Mgr., Adv Dev. Programs		20A. NAME OF CONTRACTING OFFICER (Type or print) C. Tom Weih	
19B. NAME OF CONTRACTOR BY  (Signature of person authorized to sign)		20B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)	
19C. DATE SIGNED 13 JAN 2006		20C. DATE SIGNED 11/13/06	

PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

B.1 SUPPLIES AND/OR SERVICES TO BE FURNISHED

Except as may be expressly stated in the task orders as furnished by the Government, the Contractor shall provide all resources as specified in Task Orders issued pursuant to Clause H.8, Task Ordering Procedure, that are necessary to perform the requirements delineated in the Section C, Statement of Work.

B.2 MINIMUM AND MAXIMUM INDEFINITE DELIVERY, INDEFINITE QUANTITY (IDIQ) CONTRACT VALUE

The guaranteed minimum quantity of work which will be required under this contract, and which will be initiated through the issuance of task orders, shall be \$25,000. There will be no further obligation on the part of the Government to issue additional task orders thereafter. The total maximum aggregate value is \$35 million for the 5-year period of performance (total of all multiple award contracts).

B.3 ESTIMATED COST AND FIXED FEE

The estimated cost and fixed fee of the contract is the sum of the estimated costs and fixed fee set forth for individual Task Orders issued by the Government pursuant to H.8, Task Ordering Procedure.

B.4 CONTRACT FUNDING (NFS 18-52.232-81) (JUN 1990)

- (a) Contract funding will be provided at the task order level.
- (b) The Limitation of Funds Clause FAR 52.232-22 (APR 1984) applies at the Task Order level.

SECTION C - DESCRIPTION/SPECIFICATION/WORK STATEMENT

Flight Critical Systems Research

1.0 Background/Introduction

The NASA Langley Research Center Research and Technology Directorate Airborne Systems focus area mission is to develop useable research and technology tools, methods, and techniques, which enable the delivery of future airborne systems technologies for the NASA Aeronautics and Exploration Systems Mission Directorates. This statement of work (SOW) defines the requirements for Flight Critical Systems Research to assist NASA in fulfilling this mission, and will evolve as the Agency's mission evolves. Flight Critical Systems Research addresses avionics systems technology gaps that are exposed by the operational challenges of the future national airspace system, trans-atmospheric flight, and extra-terrestrial planetary flight. Such operations are characterized by increasing complexity/integration; distributed control; onboard diagnostics and prognostics; un-crewed vehicle operations and autonomy; blurring of system boundaries; ubiquitous automation/computing; and increasing verification, validation, and certification challenges.

2.0 Scope

The Contractor shall conduct basic and applied research, technology development, systems analyses, and systems integration in avionics systems critical to flight management and control. The work to be performed will be defined in performance based Task Orders issued by the Contracting Officer in accordance with Section H, H.8 TASK ORDERING PROCEDURE (NFS 1852.216-80) (October 1996). The Contractor shall be responsible for defining operational and system requirements, and for delivering engineering and research results that meet the specific technical requirements defined in the SOW of each Task Order. The Contractor shall furnish all personnel, facilities, equipment, material, supplies, and services to perform the work as outlined in each Task Order, with the exception of items designated as Government furnished. The general Work Areas to be performed under the Task Orders are outlined below.

3.0 Flight Dynamics, Guidance, and Control

This Work Area includes, but is not limited to: attached and separated-flow aerodynamics; static and dynamic stability; control effector characteristics; dynamic modeling methods; flight-control-law effects; flying and handling qualities; agility and maneuverability; out-of-control flight characteristics; guidance and control theory; control system concepts; controls allocation/ reconfiguration; and control law design. Specific research topics include, but are not limited to, development of technologies, which enhance the ability of the flight crew to respond correctly when critical system or component failures occur; prevent related occurrences of loss of control in flight; enable automated responses to mitigate loss of control; and reduce the pilot workload associated with maintaining safe flight. This work area also includes the modeling and simulation associated with Flight Dynamics, Guidance, and Control research and development.

3.1 The Contractor shall develop guidance and control technologies for operation throughout the flight envelope to (1) prevent loss of vehicle control, and (2) recover vehicle control from loss-of-control (upset) conditions resulting from adverse flight conditions and vehicle/system failures, occurring separately or in combinations.

3.2 The Contractor shall consider and evaluate the following adverse conditions, including, but not limited to: external disturbances; atmospheric disturbances (e.g. wake vortices); weather (e.g. wind shear, turbulence, icing); internal errors; crew input errors (e.g. mode confusion, pilot induced oscillations); system errors/malfunctions (e.g. software/hardware, HIRF [High Intensity Radiated Fields]); external interference; aircraft; and terrain/fixed obstacles.

3.3 The Contractor shall consider and evaluate the following vehicle and system failures, including, but not limited to: control system component failures; sensors; actuators; propulsion system; vehicle impairment and damage; control surface impairment and damage; and fuselage and lifting body impairment and damage. Consideration shall be given to coupling effects between flight control, structure, and propulsion system damage.

3.4 The Contractor shall consider and evaluate the following vehicle upset conditions, including, but not limited to: operation beyond the normal vehicle flight envelope; unstable modes of motion; stall and/or departure from controlled flight; uncommanded motions due to asymmetric thrust or failures; and out-of-control motions (e.g., falling leaf).

3.5 The Contractor shall consider and evaluate the integration of vehicle health management and guidance and control functions, with emphasis on, but not limited to the following issues: definition and utilization of diagnostic information for control performance effectiveness assessment and; definition and utilization of prognostic information for predicting and averting loss of control conditions and for life extending control.

3.6 The Contractor shall develop guidance and control technologies, investigate flight dynamics, and develop simulation concepts and methods related to multi-vehicle scenarios. Such scenarios include, but are not limited to, formation flight.

4.0 Crew Systems and Aviation Operations

This Work Area includes, but is not limited to: integrated flight deck systems; aircraft self-separation and distributed air traffic management; atmospheric hazard awareness and avoidance; situation awareness assessment; synthetic vision; and human-centered design. These research areas investigate aviation safety and airspace capacity issues such as controlled flight into terrain (CFIT), loss of control in flight, runway incursions, and high density air traffic operations.

4.1 The Contractor shall develop technologies and methods that provide real-time information electronically, to flight crews to improve their situation awareness. Types of real-time information include, but are not limited to: current position in four dimensional space; traffic locations and identity; terrain and obstacle locations; hazardous weather location and type; flight path or surface route information; air traffic control (ATC) instructions; and alerts of impending/potential hazardous situations. The Contractor shall investigate and evaluate display concepts that reduce uncertainties associated with real-time information presentation.

4.2 The Contractor shall develop communication, navigation, and surveillance infrastructure technologies required to acquire, process, and disseminate situation awareness information.

4.3 The Contractor shall develop technologies and methods aimed at increasing the situation awareness of air traffic controllers, including, but not limited to: systems to enable both strategic and tactical collaborative decision making; seamless surveillance; controller-pilot datalink communications (CPDLC); and alerting of path/route deviations by flight crews.

4.4 The Contractor shall investigate and develop technologies, methods and procedures to enable high density operations in the future airspace system. Elements and functions of such operations shall include, but not be limited to: air and ground-based traffic management; all-weather operations; terrain-impacted navigation; and detection and accommodation of wake turbulence.

4.5 The Contractor shall complete all documentation and meet all requirements to conduct experimentation with human subjects, in accordance with NASA Procedural Requirement 7100.1 "Protection of Human Research Subjects" (available at the NASA Online Directives Information System <http://nodis.hq.nasa.gov/>) and the NASA Langley Research Center Institutional Review Board (IRB).

5.0 Reliable and Robust Avionics Systems

This Work Area includes, but is not limited to: mathematical proof of safety properties for software and hardware; quantitative analysis to ensure functionality, reliability, and safety; fault tolerance; fault modeling and emulation; real-time upset detection and recovery; architecture concepts to improve system robustness to disturbances; vehicle health management; commercial-off-the-shelf technology in safety-critical systems; complexity modeling and management; and integrated modular avionics. Specific research topics include, but are not limited to: the prevention and reduction of malfunctions and failures in aircraft systems and components by developing design and assessment tools to verify system design correctness and validate required system functionality; and the investigation, development, and integration of existing and future sensing/processing technologies to enable vehicle-wide health monitoring.

5.1 The Contractor shall develop and demonstrate methods, techniques, and tools for the design, verification, integration, validation, and certification of complex and highly integrated mission and life critical systems. Highly integrated, complex systems are composed of functionally and physically different entities that must operate in seamless and safe coordination. Such entities include, but are not limited to, mechanical, electrical, computational, and human components. The Contractor shall develop methods, techniques, and tools to guarantee that the following systems criteria are met: safety; required performance; design correctness; immunity to disturbances in electromagnetic environments (EME); information integrity and security in presence of malicious and environmental threats; and fault containment, recovery, and accommodation.

5.2 The Contractor shall investigate methods that quantify the system's ability to perform to specification in the presence of faults.

5.3 The Contractor shall develop databases from analytical, simulation, and flight investigations of flight critical systems' performance in failure/damage situations. Such databases shall be capable of providing the basis for new system designs and for new assessment techniques and tools.

5.4 The Contractor shall develop concepts, methods, and technologies for distributed, onboard health diagnostic and prognostic system architectures and algorithms. The Contractor shall validate new health monitoring and diagnostic/prognostic system concepts in the context of catastrophic failure prevention and mitigation, and decreased maintenance costs as it applies to major vehicle systems, including, but not limited to:

5.4.1 Malfunctions and failures of the aircraft propulsion system, such as engine surge, asymmetric thrust, and turbomachinery crack/fatigue growth and propagation.

5.4.2 Damage of the airframe (including the wings, fuselage, and control surface attachment points), such as crack/fatigue growth and propagation, and/or damage resulting from malicious threats.

5.4.3 Anticipated and unanticipated malfunctions and failures of the aircraft flight systems (including the electrical power generation/distribution system; digital computers for guidance, navigation, control, and flight management; crew station computers, displays, cueing, warning, and annunciation systems; the digital data bus; sensors; and control actuation components), such as functional error modes in computers, bus errors, short circuits, blocked Pitot tubes, and faulty sensors and actuators.

5.4.4 Providing crew members with the possible consequences of systems failures, the symptom and indicators of such consequences, and correct crew responses to mitigate consequences.

5.4.5 Providing onboard capability to utilize prognostic data to adapt control strategies that delay the onset of failures and utilize diagnostic data to mitigate failures when they occur.

6.0 Flight Critical Systems Analysis and Integration

This work area includes, but is not limited to, performance of systems engineering in support of novel flight critical systems analysis and development from research concept through simulation and test to flight experiment.

6.1 The Contractor shall conduct the following: requirements analysis; complex system functional decomposition; experimental system specification; experimental system design; system verification and validation; cost-benefit studies; modeling and simulation; configuration management; systems integration; and systems assurance. The Contractor shall perform all analyses and develop all documentation necessary to obtain cognizant safety authority approval as determined by the LaRC Airworthiness and Safety Review Board (ASRB). This includes experimental flight system(s) flown on NASA aircraft, or Contractor-owned and university-owned aircraft funded by NASA.

SECTION D - PACKAGING AND MARKING

D.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

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

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

SECTION E - INSPECTION AND ACCEPTANCE

E.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.246-9	APR 1984	INSPECTION OF RESEARCH AND DEVELOPMENT (SHORT FORM)

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

CLAUSE NUMBER	DATE	TITLE
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None included by reference.

E.2 HUMAN SPACE FLIGHT ITEM (NASA 1852.246-73) (MARCH 1997)

The Contractor shall include the following statement in all subcontracts and purchase orders placed by it in support of this contract, without exception as to amount or subcontract level:

"FOR USE IN HUMAN SPACE FLIGHT; MATERIALS, MANUFACTURING, AND WORKMANSHIP OF HIGHEST QUALITY STANDARDS ARE ESSENTIAL TO ASTRONAUT SAFETY.

IF YOU ARE ABLE TO SUPPLY THE DESIRED ITEM WITH A HIGHER QUALITY THAN THAT OF THE ITEMS SPECIFIED OR PROPOSED, YOU ARE REQUESTED TO BRING THIS FACT TO THE IMMEDIATE ATTENTION OF THE PURCHASER."

SECTION F - DELIVERIES OR PERFORMANCE

F.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.211-15	SEP 1990	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS
52.242-15	AUG 1989	STOP-WORK ORDER (ALTERNATE I) (APR 1984)
52.247-34	NOV 1991	F.O.B. DESTINATION

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

CLAUSE NUMBER	DATE	TITLE
None included by reference.		

F.2 PERIOD OF PERFORMANCE (LaRC 52.211-91) (NOV 2002)

The period for issuance of task orders is 60 months from the effective date of this contract.

F.3 DELIVERY REQUIREMENTS (LaRC 52.211-96) (APR 2002)

Delivery shall be f.o.b. destination:

National Aeronautics and Space Administration
Langley Research Center
4 South Marvin Street (Bldg. 1206)
Hampton VA 23681-2199

or as specified in each task order.

F.4 PLACE(S) OF PERFORMANCE (LaRC 52.211-98) (OCT 1992)

The place(s) of performance shall be:

The Contractor's facility located in Fort Worth, Texas, Palmdale, California and Marietta, Georgia, at subcontractor facilities and other sites as may be specified by task orders.

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

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

None included by reference.

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

CLAUSE NUMBER	DATE	TITLE
1852.216-75	DEC 1988	PAYMENT OF FIXED FEE
1852.242-73	NOV 2004	NASA CONTRACTOR FINANCIAL MANAGEMENT REPORTING
1852.245-70	JUL 1997	CONTRACTOR REQUESTS FOR GOVERNMENT-OWNED EQUIPMENT

G.2 SUBMISSION OF VOUCHERS FOR PAYMENT (NFS 1852.216-87) (MAR 1998)

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

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

NASA Langley Research Center
MS 175/ Accounts Payable
Hampton VA 23681

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

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

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

(1) One original Standard Form (SF) 1034, SF 1035, or equivalent Contractor's attachment to the Contractor's DCAA office.

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

(i) Copy 1 NASA Contracting Officer

(ii) Copy 2 Auditor

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

(d) (1) Public vouchers for payment of fee shall be prepared similarly to the procedures in paragraphs (b) or (c) of this clause, whichever is applicable, and be forwarded to:

NASA Langley Research Center
MS 175 / Accounts Payable
Hampton VA 23681

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

(2) Fixed fee shall be paid in monthly installments based upon the percentage of completion of work as determined by the Contracting Officer. The following formulas are provided as a convenience for calculating the interim fee provided the formulas produce a reasonable percentage as compared to completion of work. You should show both formulas on your fee voucher, however, the maximum fee percentage for fee billing is the smaller of the percentages resulting from the application of the two formulas. If at any time the Contracting Officer determines that the fee percentage is not consistent with the completion of work, the fee formula will be adjusted, or another methodology that results in comparative fee billing agree upon.

(#) $\frac{\text{Cost Incurred to Date}}{\text{Contract Estimated Cost}} = \%$

(#) $\frac{\text{Months of Performance Expended to Date}}{\text{Contract Period of Performance (Months)}} = \%$

(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.

G.3 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:

New Technology Representative
Office Code 141
NASA Langley Research Center
Hampton, VA 23681-2199

Patent Representative
Office Code 141
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. Inquiries or requests regarding disposition of rights, election of rights, or related matters should be directed to the Patent Representative. This clause shall be included in any subcontract hereunder requiring a "New Technology" clause or "Patent Rights--Retention by the Contractor (Short Form)" clause, unless otherwise authorized or directed by the Contracting Officer. The respective responsibilities and authorities of the above-named representatives are set forth in 1827.305-370 of the NASA FAR Supplement.

G.4 FINANCIAL REPORTING OF NASA PROPERTY IN THE CUSTODY OF CONTRACTORS (NFS 1852.245-73) (OCT 2003)

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

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

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

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

(c) (1) The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15. The information contained in these reports is entered into the NASA accounting system to reflect current asset values for agency financial statement purposes. Therefore, it is essential that

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

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

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

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

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

None included by reference.

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

CLAUSE NUMBER	DATE	TITLE
1852.208-81	NOV 2004	RESTRICTIONS ON PRINTING AND DUPLICATING
1852.223-70	APR 2002	SAFETY AND HEALTH
1852.223-74	NOV 2004	DRUG- AND ALCOHOL-FREE WORKFORCE
1852.223-75	FEB 2002	MAJOR BREACH OF SAFETY OR SECURITY
1852.242-78	APR 2001	EMERGENCY MEDICAL SERVICES AND EVACUATION
1852.244-70	APR 1985	GEOGRAPHIC PARTICIPATION IN THE AEROSPACE PROGRAM

H.2 SECURITY CLASSIFICATION REQUIREMENTS (NASA 1852.204-75) (SEP 1989)

Performance under this contract will involve access to and/or generation of classified information, work in a security area, or both, up to the level of Secret, as Determined in Individual Task Orders. See Federal Acquisition Regulation clause 52.204-2 in this contract and DD Form 254, Contract Security Classification Specification, Exhibit B.

H.3 SECURITY PROGRAM/NON-U.S. CITIZEN EMPLOYEE ACCESS REQUIREMENTS (LaRC 52.204-91) (OCT 2003)

(a) Access to the LaRC by contractor non-U.S. citizen employees, including employees in permanent resident alien status, shall be approved in accordance with NPG 1371.2 and LMS-CP-4850-- "Non-U.S. Citizen(s)/Foreign Representative(s) Visitor Approval". Administrative processing requires advance notice of between 20 to 45 days depending on the nationality of the non-U.S. citizen. Access authorization shall be for a maximum of one year, and must be reevaluated annually. Non-U.S. citizen employees must be under escort at all times while on Center by a U.S. citizen issued a LaRC identification badge.

(b) Request for Center access in excess of 90 days requires that a background investigation be conducted on the non-U.S. citizen employee. The processing of a background investigation requires the submittal of a NASA Form 531, "Name Check Request," and a fingerprint card application. Normal processing time for a background investigation is approximately 90 days. A favorably adjudicated background investigation shall allow non-U.S. citizen contractor employee limited unescorted access to the Center. Access shall be limited to work areas identified and deemed necessary and entry and egress to that site.

H.4 RELEASE OF SENSITIVE INFORMATION (NFS 1852.237-73) (JUNE 2005)

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

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

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

Mark the title page with the following legend:

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

H.5 OBSERVATION OF REGULATIONS AND IDENTIFICATION OF CONTRACTOR'S EMPLOYEES (LaRC 52.211-104) (APR 2002)

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

(b) Identification Badges--At all times while on LaRC property, the Contractor shall require its employees, Subcontractors and agents to wear badges which will be issued by the NASA LaRC Badge and Pass Office, located at 1 Langley Boulevard (Building No. 1228). Badges shall be issued only between the hours of 6:30 a.m. and 3:30 p.m., Monday through Friday. Contractors will be held accountable for these badges, and may be required to validate outstanding badges 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 Outprocessing--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.

H.6 INCORPORATION OF SECTION K OF THE PROPOSAL BY REFERENCE (LaRC 52.215-107) (NOV 2002)

Pursuant to FAR 15.204-1(b), the completed Section K of the proposal is hereby incorporated by reference.

H.7 Reserved**H.8 TASK ORDERING PROCEDURE (NFS 1852.216-80) (OCT 1996)**

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

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

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

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

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

(c) Within 14 calendar 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 3 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.

H.9 TASK ORDER SOLICITATION AND SELECTION PROCEDURES (LaRC 52.216-97) (OCT 2004)

(a) Each Contractor will be given a fair opportunity to be considered for each order in accordance with FAR 16.505. This contract includes no requirement for the Contractor to submit a proposal for any individual task order. The costs of preparing proposals for individual task orders under the contract will not be an allowable direct charge to the contract. However, these costs may be an allowable cost to the normal bid and proposal indirect cost pursuant to FAR 31.205-18.

The contracting officer (CO) will consider past performance, quality of services and/or deliverables, final proposed cost/price or other factors the contracting officer believes are relevant.

Contractors need not be given an opportunity to be considered for a particular order in excess of \$2,500 under multiple Task Order contracts if the CO determines that-

1. The agency need for such supplies or services is of such urgency that providing such opportunity would result in unacceptable delays;
2. Only one such Contractor is capable of providing such supplies or services required at the level of quality required because the supplies or services ordered are unique or highly specialized;

3. The order should be issued on a sole-source basis in the interest of economy and efficiency as a logical follow-on to an order already issued under the contract, provided that all Contractors were given a fair opportunity to be considered for the original order; or
4. It is necessary to place an order to satisfy a minimum guarantee.

(b) The CO need not contact each of the multiple award Contractors before selecting an order awardee if the contracting officer has information available to ensure that each multiple Contractor is provided a fair opportunity to be considered for each order.

(c) For those orders, which are competed among the multiple contract awardees, the CO will provide a solicitation to each Contractor and will request a proposal in accordance with H.8, Task Ordering Procedure. The solicitation will include a Statement of Work, specifications, or drawings; required delivery date, any special instructions or provisions, and any selection criteria to be used to award the Task Order which differs from that specified in H.8. Prior to awarding the Task Order, all awardees will be required to provide a task plan that may include the following: 1) technical approach, 2) implementation plan (including staffing, proposed facilities and Subcontractors), 3) estimated cost including breakouts of the estimated labor hours and all costs to perform the Task Order, and 4) proposed fee. As required by NASA FAR Supplement 1815.404-471-5(a), when FCCOM is included as an item of cost in the Contractor's proposal, a reduction in the profit/fee objective will be made in an amount equal to the amount of FCCOM allowed in accordance with FAR 31.205-10(a)(2) or 1 percent of the cost base, whichever is less. The level of detail in each Task Plan will be dependent on the complexity of the requirement. Upon selection of an awardee, the CO and Contracting Officer Technical Representative (COTR) will review the task plan and cost estimate to complete the work. The contracting officer will negotiate any necessary changes with the Contractor. The final cost estimate represents the baseline to be used for reporting in Columns 7b and 7d of NASA Form 533M (See Exhibit A).

(d) Orders may be issued by facsimile or electronic commerce methods.

(e) No protest is authorized in connection with this contract except for a protest on the grounds that the order increases the scope, period, or maximum value of the contract.

(f) In the case where only one award is made as a result of this solicitation or if the CO determines that the Task Order shall not be competed (based on criteria stated in Paragraph A above), the following Task Order initiation procedure apply:

1. The COTR will provide a Statement of Work, specifications, or drawings; required delivery date, any special instructions or provisions to the Contractor.
2. The Contractor will be required to provide a task plan, which shall include a discussion of their technical approach for performing the work and an estimated cost for the proposed Task Order in accordance with H.8, Task Ordering Procedure. The estimated cost shall include breakouts of the estimated labor hours and costs to perform the Task Order.
3. The CO and COTR will review the task plan and cost estimate to complete the work. The CO will negotiate necessary changes with the Contractor.
4. The final negotiated cost estimate shall represent the baseline to be used for reporting in Columns 7b and 7d of NASA Form 533M (See Exhibit A).

H.10 SMALL DISADVANTAGED BUSINESS PARTICIPATION--CONTRACT TARGETS (LaRC 52.219-91) (OCT 2002) (for offeror fill-in)

Fill-In: By offeror

(a) This clause does not apply to, and should not be completed by Small Disadvantaged Business (SDB) offerors unless the SDB offeror has waived the price adjustment evaluation adjustment [see Paragraph (c) of FAR clause 52.219-23].

(b) FAR 19.1202-4(a) requires that SDB participation targets be incorporated in the contract. Targets for this contract are as follows: (See Internet at <http://www.census.gov/epcd/www/naics.html> for Department of Commerce NAICS Industry Subsectors.)

	<u>Department of Commerce NAICS Industry Subsector</u>	<u>Dollar Target</u>	<u>Percent of Contract Value</u>
Year 1	334511	\$350,000	5%
Year 2	334511	\$350,000	5%
Year 3	334511	\$350,000	5%
Year 4	334511	\$350,000	5%
Year 5	334511	\$350,000	5%

(c) FAR 19.1202-4(b) requires that SDB concerns that are specifically identified by the offeror be listed in the contract when the extent of the identification of such Subcontractors was part of the SDB evaluation subfactor. SDB concerns (Subcontractors) specifically identified by the offeror are as follows:

Name of Concern(s):

Barron Associates, Inc.

Others as identified/required under each Task Order.

The Contractor shall notify the Contracting Officer of any substitutions of firms that are not SDB concerns.

(d) If the prime offeror is an SDB (including joint venture partners and team members) that has waived the price evaluation adjustment, the target for the work it intends to perform as a prime Contractor in authorized Department of Commerce NAICS Industry Subsectors is as follows:

	<u>Percent of Dollars</u>	<u>Contract Value</u>
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		

NOTE: Because of the nature of this contract (i.e., Task Order IDIQ), the Government will annually evaluate the Contractor's performance in meeting the SDB NAICS Industry Standard goals based on the percentages proposed by the contractor within this clause and not based on the proposed dollar target amounts.

H.11 FLIGHT TEST OPERATIONS AND SAFETY REPORT (FTOSR) INFORMATION (LaRC 52.223-91) (OCT 2004)

The Technical Point of Contact (POC) and/or COTR must submit a Flight Test Operations and Test and Safety Report (FTOSR) to the Airworthiness and Safety review Board (ASRB) for evaluation and approval in order to obtain a Flight Safety Release letter. The Contractor shall support the Technical Point of Contact (POC) and/or COTR to obtain this Flight Safety Release letter when work performed under this contract requires experiments to be flown on or involving aircraft (including balloon borne experiments/instruments) whose flights occur within the Earth's sensible atmosphere. Specifically such flights include full-scale aircraft or aircraft models, either manned or unmanned and either powered or un-powered. No flight test/flight experiment shall be conducted until a Flight Safety Release letter is obtained. This is applicable for aircraft that are either NASA, University or Contractor-owned. The Contractor shall develop the FTOSR or information required for the FTOSR. The Flight Safety Release letter is obtained by the Technical Point of Contact (POC) and/or COTR from the LaRC Airworthiness and Safety Review Board (ASRB) per the requirements of LMS-CP-5580 Airworthiness and Safety Review Board process, and in accordance with LAPD-1710.1 Langley Research Center Aviation Safety Policy and LPR 1710.16 Aviation Operations and Safety Manual. An outline for the FTOSR is provided below. If an item in the FTOSR does not apply, the item must be marked as such and a brief reason why it does not apply.

Flight Test Operations and Safety Report (FTOSR) Outline:**A. Cover Sheet w/ Approvals****B. Program/Project Overview:**

1. Program Objectives & General Description
2. Program Management
3. Selected Aircraft
4. Proposed Aircraft Modifications & Design Criteria
5. Instrumentation Hardware/software & Flt Test
6. Data Measurement Requirements
7. Contractual Requirements
8. Other Involved Agencies
9. Summary of Supporting Research & Tests (includes minutes of design review activities)
10. Analytical
11. Wind Tunnel
12. Simulation
13. Ground Operating Systems Check out
14. Proposed Schedule Milestones

C. Flight Test Operations:

1. Location
2. Flight Tests Start Date
3. Number of Flights
4. Flight Frequency
5. Test Procedures (incl. maneuvers)
6. Support Requirements:
7. Support Organization & Responsibilities
8. Transportation to Test Location
9. Chase Aircraft
10. Photo/TV Coverage
11. Tracking
12. Radar
13. Optical

14. Beacon (incl. frequency)
15. Telemetry
16. Communications
17. Meteorological
18. Data
19. Real Time
20. Quick Look
21. Processed
22. Other Special Support Requirements

D. Safety:

1. System Safety Program Plan
2. Risk Assessment
3. Hazard Analysis
4. General Operational Restrictions & Conditions
5. Weather
6. Personal Equipment
7. Minimum On-board Equipment
8. Weight/Balance
9. Flight Test Envelope
10. Abort Procedures
11. Emergency Plans & Procedures
12. Configuration Control Responsibilities
13. Other

H.12 EXPORT LICENSES (NFS 1852.225-70) (FEB 2000)

(a) The Contractor shall comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance.

(b) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at NASA Langley Research Center, where the foreign person will have access to export-controlled technical data or software.

(c) The Contractor shall be responsible for all regulatory record keeping requirements associated with the use of licenses and license exemptions/exceptions.

(d) The Contractor shall be responsible for ensuring that the provisions of this clause apply to its Subcontractors.

H.13 LaRC 52.227-28 HANDLING OF DATA (MAY 2003)

(a) "DATA," as used in this clause, means recorded information, regardless of the form, the media on which it may be recorded, or the method of recording. The term includes, but is not limited to, models, photographs, lab notebooks, diagrams, drawings, information subject to the Privacy Act, information of a scientific or technical nature, computer software and documentation thereof, and information of a commercial or financial nature.

(b) In the performance of this contract the Contractor will have access to, be furnished, generate, or use one or more of the following categories of DATA:

- (1) DATA of third parties that the Government has agreed to handle under protective arrangements;
- (2) Government DATA, the use and dissemination of which the Government intends to control or is required to control by law; or
- (3) DATA that the Contractor will create or assist in creating under this contract that the Government has agreed to handle under protective arrangements or indicates that it intends to control.

(c) In order to protect the interests of the Government and the owners, licensors and licensees of such DATA, the Contractor agrees, with respect to any of the types of DATA identified in paragraph (b), above, that is either marked with a restrictive legend, specifically identified to the Contractor as DATA being generated and to be marked with a restrictive legend, or otherwise identified in writing by the Contracting Officer or his or her representative as being subject to this clause, to:

- (1) Use, disclose, and reproduce such DATA only to the extent necessary to perform the work required under this contract;
- (2) Allow access to such DATA only to those of its employees that require access for their performance under this contract;
- (3) Preclude access and disclosure of such DATA by the Contractor's personnel outside of that portion of the Contractor's organization needed for the performance of the Contractor's duties under this contract; and
- (4) Return or dispose of such DATA, as the Contracting Officer or his or her representative may direct when the DATA is no longer needed for contract performance.

(d) In the event that DATA includes a legend that the Contractor deems to be ambiguous or unauthorized, the Contractor shall inform the Contracting Officer of such condition. Notwithstanding the ambiguous or unauthorized nature of such a legend, as long as the legend provides an indication that a restriction on the use or disclosure was intended, the Contractor shall treat such DATA pursuant to the requirements of this clause unless otherwise directed, in writing, by the Contracting Officer.

(e) Subject to the notice requirements in (f), below, the Contractor shall not be restricted in the use, disclosure, and reproduction of DATA that:

- (1) Is, or becomes, generally available or public knowledge without breach of this clause by the Contractor or its employees;
- (2) Is known to the Contractor at the time of disclosure; has been disclosed to the Contractor without restriction from the Government; or has been independently developed by the Contractor outside of the Contractor's activities under this contract;
- (3) Has become known to the Contractor without similar restrictions from a source other than the Government or any party having work performed under this contract, that source having the right to disclose such DATA; or
- (4) The Contractor is required to produce such DATA pursuant to a court order or similar Government action.

(f) If the Contractor believes that any event or condition removes the restrictions on their use, disclosure, or reproduction of DATA, the Contractor shall promptly notify the Contracting Officer in writing of such belief before acting on such belief, and, in any event, shall give written notice to the Contracting Officer before unrestricted use, disclosure, or reproduction of such DATA.

(g) Before the Contractor has access to DATA identified in paragraph (b), above, the Contractor shall provide the Contracting Officer an acceptable written plan by which it intends to assure that its personnel who have or might reasonably have access to any such DATA, will honor the Contractor's obligation to safeguard such DATA. Should the Contracting Officer consider the proposed plan inadequate, the Contractor will be advised of the inadequacy and the Contractor will provide a revised plan. The Contracting Officer may suspend work under this contract, at no cost to the Government, until such time as the written plan of the Contractor is considered acceptable to the Contracting Officer.

(h) The Contractor agrees to inform and instruct its employees of its and their obligations under this clause and to appropriately bind its employees contractually to comply with the access, use, disclosure, and reproduction provisions of this clause.

H.14 AIRCRAFT FLIGHT RISKS (NFS 1852.228-71) (DECEMBER 1988)

(a) Notwithstanding any other provision of this contract (particularly paragraph (g) of the Government Property (Cost-Reimbursement, Time-and-Materials, or Labor-Hour Contracts) clause and paragraph (c) of the Insurance--Liability to Third Persons clause), the Contractor shall not (1) be relieved of liability for damage to, or loss or destruction of, aircraft sustained during flight or (2) be reimbursed for liabilities to third persons for loss of or damage to property or for death or bodily injury caused by aircraft during flight, unless the flight crew members have previously been approved in writing by the Contracting Officer.

(b) For the purposes of this clause--

(1) Unless otherwise specifically provided in the Schedule, "aircraft" includes any aircraft, whether furnished by the Contractor under this contract (either before or after Government acceptance) or furnished by the Government to the Contractor under this contract, including all Government property placed or installed or attached to the aircraft, unless the aircraft and property are covered by a separate bailment agreement.

(2) "Flight" includes any flight demonstration, flight test, taxi test, or other flight made in the performance of this contract, or for the purpose of safeguarding the aircraft, or previously approved in writing by the Contracting Officer.

(i) With respect to land-based aircraft, flight commences with the taxi roll from a flight line and continues until the aircraft has completed the taxi roll to a flight line.

(ii) With respect to sea-planes, flight commences with the launching from a ramp and continues until the aircraft has completed its landing run and is beached at a ramp.

(iii) With respect to helicopters, flight commences upon engagement of the rotors for the purpose of take-off and continues until the aircraft has returned to the ground and rotors are disengaged.

(iv) With respect to vertical take-off aircraft, flight commences upon disengagement from any launching platform or device and continues until the aircraft has been re-engaged to any launching platform or device.

(3) "Flight crew members" means the pilot, copilot, and, unless otherwise specifically provided in the Schedule, the flight engineer and navigator when required or assigned to their respective crew positions to conduct any flight on behalf of the Contractor.

- (c) (1) If any aircraft is damaged, lost, or destroyed during flight and the amount of the damage, loss, or destruction exceeds \$100,000 or 20 percent of the estimated cost, exclusive of any fee, of this contract, whichever is less, and if the Contractor is not liable for the damage, loss, or destruction under the Government Property (Cost-Reimbursement, Time-and-Materials, or Labor-Hour Contracts) clause of this contract or under paragraph (a) of this clause, an equitable adjustment for any resulting repair, restoration, or replacement required under this contract shall be made (i) in the estimated cost, the delivery schedule, or both and (ii) in the amount of any fee to be paid to the Contractor, and the contract shall be modified in writing accordingly.
- (2) In determining the amount of adjustment in the fee that is equitable, any fault of the Contractor, its employees, or any Subcontractor that materially contributed to the damage, loss, or destruction shall be taken into consideration.

H.15 MINIMUM INSURANCE COVERAGE (NASA 1852.228-75) (OCT 1988)

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

- (a) Worker's compensation and employer's liability insurance as required by applicable Federal and state workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy, except when contract operations are so commingled with the Contractor's commercial operations that it would not be practical. The employer's liability coverage shall be at least \$100,000, except in States with exclusive or monopolistic funds that do not permit workers' compensation to be written by private carriers.
- (b) Comprehensive general (bodily injury) liability insurance of at least \$500,000 per occurrence.
- (c) Motor vehicle liability insurance written on the comprehensive form of policy which provides for bodily injury and property damage liability covering the operation of all motor vehicles used in connection with performing the contract. Policies covering motor vehicles operated in the United States shall provide coverage of at least \$200,000 per person and \$500,000 per occurrence for bodily injury liability and \$20,000 per occurrence for property damage. The amount of liability coverage on other policies shall be commensurate with any legal requirements of the locality and sufficient to meet normal and customary claims.
- (d) Comprehensive general and motor vehicle liability policies shall contain a provision worded as follows:
- "The insurance company waives any right of subrogation against the United States of America which may arise by reason of any payment under the policy."
- (e) When aircraft are used in connection with performing the contract, aircraft public and passenger liability insurance of at least \$200,000 per person and \$500,000 per occurrence for bodily injury, other than passenger liability, and \$200,000 per occurrence for property damage. Coverage for passenger liability bodily injury shall be at least \$200,000 multiplied by the number of seats or passengers, whichever is greater.

**H.16 FINAL SCIENTIFIC AND TECHNICAL REPORTS (NFS 1852.235-73) (FEB 2003)
(ALTERNATE II) (FEB 2003)**

(a) The Contractor shall submit to the Contracting Officer a final report that summarizes the results of the entire contract, including recommendations and conclusions based on the experience and results obtained. The final report should include tables, graphs, diagrams, curves, sketches, photographs, and drawings in sufficient detail to explain comprehensively the results achieved under the contract.

(b) The final report shall be of a quality suitable for publication and shall follow the formatting and stylistic guidelines contained in NPG 2200.2A, Guidelines for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information. Electronic formats for submission of reports should be used to the maximum extent practical. Before electronically submitting reports containing scientific and technical information (STI) that is export-controlled or limited or restricted, contact the Contracting Officer to determine the requirements to electronically transmit these forms of STI. If appropriate electronic safeguards are not available at the time of submission, a paper copy or a CD-ROM of the report shall be required. Information regarding appropriate electronic formats for final reports is available at <http://www.sti.nasa.gov> under "Publish STI - Electronic File Formats."

(c) The last page of the final report shall be a completed Standard Form (SF) 298, Report Documentation Page.

(d) In addition to the final report submitted to the Contracting Officer, the Contractor shall concurrently provide to the Center STI/Publication Manager and the NASA Center for AeroSpace Information (CASI) a copy of the letter transmitting the final report to the Contracting Officer. The copy of the letter shall be submitted to CASI at the following address:

Center for AeroSpace Information (CASI)
Attn: Acquisitions Collections Development Specialist
7121 Standard Drive
Hanover, Maryland 21076-1320

(e) Data resulting from this research activity may be subject to export control, national security restrictions or other restrictions designated by NASA; or, to the extent the Contractor receives or is given access to data necessary for the performance of the contract which contain restrictive markings, may include proprietary information of others. Therefore, the Contractor shall not publish, release, or otherwise disseminate, except to NASA, data produced during the performance of this contract, including data contained in the final report and any additional reports required by 1852.235-74 when included in the contract, without prior review by NASA. Should the Contractor seek to publish, release, or otherwise disseminate data produced during the performance of this contract, the Contractor may do so once NASA has completed its document availability authorization review and the availability of the data has been determined.

H.17 MULTIPLE AWARD CONTRACTS

Orders under this multiple award contract will be placed in accordance with FAR 16.505 and H.8, Task Ordering Procedure. Unless otherwise stated in an individual Task Order Request, the selection criteria to be considered to provide multiple awardees a fair opportunity to be considered for award for each order are: technical approach, cost, and past performance. Unless otherwise stated in an individual Task Order Request, these criteria will be considered of essentially equal importance.

H.18 Reserved**H.19 PROFIT AND FEE ON TASK ORDERS**

Individual cost plus fixed fee Task Orders will be negotiated as a result of proposals submitted for each Task Order. The fixed fee rate accepted or negotiated by the Contracting Officer for the initial requirement under any specific Task Order will be the maximum rate applied to all change or modification actions involving work not previously specified in the Task Order.

H.20 SMALL BUSINESS SUBCONTRACTING PLAN

The Small Business Subcontracting Plan is attached as Exhibit D to this contract. Because of the nature of this contract (i.e., Task Order IDIQ), the Government will annually evaluate the Contractor's performance in meeting the Small Business Subcontracting goals based on the percentages proposed by the contractor in the Small Business Subcontracting Plan.

PART II - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE

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

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1)

CLAUSE NUMBER	DATE	TITLE
52.202-1	JUN 2004	DEFINITIONS
52.203-3	APR 1984	GRATUITIES
52.203-5	APR 1984	COVENANT AGAINST CONTINGENT FEES
52.203-6	JUL 1995	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT
52.203-7	JUL 1995	ANTI-KICKBACK PROCEDURES
52.203-8	JAN 1997	CANCELLATION, RESCISSION AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY
52.203-10	JAN 1997	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY
52.203-12	JUN 2003	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS
52.204-2	AUG 1996	SECURITY REQUIREMENTS
52.204-4	AUG 2000	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER
52.204-7	OCT 2003	CENTRAL CONTRACTOR REGISTRATION
52.209-6	JUL 1995	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT
52.215-2	JUN 1999	AUDIT AND RECORDS--NEGOTIATION
52.215-8	OCT 1997	ORDER OF PRECEDENCE - UNIFORM CONTRACT FORMAT
52.215-11	OCT 1997	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA-- MODIFICATIONS
52.215-13	OCT 1997	SUBCONTRACTOR COST OR PRICING DATA - MODIFICATIONS
52.215-14	OCT 1997	INTEGRITY OF UNIT PRICES
52.215-15	OCT 2004	PENSION ADJUSTMENTS AND ASSET REVERSIONS
52.215-17	OCT 1997	WAIVER OF FACILITIES CAPITAL COST OF MONEY

52.215-21	OCT 1997	REQUIREMENTS FOR COST OR PRICING DATA OR INFORMATION OTHER THAN COST OR PRICING DATA – MODIFICATIONS (ALTERNATE IV) (OCT 1997) Insert (b) Provide information described below: <u>The Contractor shall submit cost or pricing data and supporting attachments in accordance with Table 15-2 of FAR 15.408, unless otherwise stated by the Contracting Officer.</u>
52.216-7	DEC 2002	ALLOWABLE COST AND PAYMENT Insert 30 th in Paragraph (a)(3).
52.216-8	MAR 1997	FIXED FEE
52.217-8	NOV 1999	Option to Extend Services (Nov 99) Insert 30 Days
52.219-8	OCT 2000	UTILIZATION OF SMALL BUSINESS CONCERNS
52.219-9	JAN 2002	SMALL BUSINESS SUBCONTRACTING PLAN (ALTERNATE II) (OCT 2001)
52.219-16	JAN 1999	LIQUIDATED DAMAGES SUBCONTRACTING PLAN
52.222-1	FEB 1997	NOTICE TO THE GOVERNMENT OF LABOR DISPUTES
52.222-2	JUL 1990	PAYMENT FOR OVERTIME PREMIUMS Insert "\$ TBD per task order requiring Contracting Officer's approval" in paragraph (a).
52.222-3	JUN 2003	CONVICT LABOR
52.222-21	FEB 1999	PROHIBITION OF SEGREGATED FACILITIES
52.222-26	APR 2002	EQUAL OPPORTUNITY
52.222-35	DEC 2001	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.222-36	JUN 1998	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES
52.222-37	DEC 2001	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS
52.223-6	MAY 2001	DRUG-FREE WORKPLACE
52.223-14	AUG 2003	TOXIC CHEMICAL RELEASE REPORTING
52.225-13	DEC 2003	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES
52.225-16	FEB 2000	SANCTIONED EUROPEAN UNION COUNTRY SERVICES
52.227-1	JUL 1995	AUTHORIZATION AND CONSENT (ALTERNATE I) (APR 1984)
52.227-2	AUG 1996	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT
52.227-10	APR 1984	FILING OF PATENT APPLICATIONS-- CLASSIFIED SUBJECT MATTER
52.227-11	JUN 1997	PATENT RIGHTS--RETENTION BY THE CONTRACTOR (SHORT FORM) (AS MODIFIED BY NFS 1852.227-11) (MAY 2002)
52.227-14	JUN 1987	RIGHTS IN DATA--GENERAL As modified by 1852.227-14 NASA FAR Supplement (OCT 1995)
52.227-16	JUN 1987	ADDITIONAL DATA REQUIREMENTS
52.228-7	MAR 1996	INSURANCE--LIABILITY TO THIRD PERSONS
52.230-2	APR 1998	COST ACCOUNTING STANDARDS
52.230-3	APR 1998	DISCLOSURE AND CONSISTENCY OF COST ACCOUNTING PRACTICES
52.230-6	NOV 1999	ADMINISTRATION OF COST ACCOUNTING STANDARDS

52.232-9	APR 1984	LIMITATION ON WITHHOLDING OF PAYMENTS
52.232-17	JUN 1996	INTEREST
52.232-22	APR 1984	LIMITATION OF FUNDS
52.232-23	JAN 1986	ASSIGNMENT OF CLAIMS
52.232-25	OCT 2003	PROMPT PAYMENT
52.232-34	MAY 1999	PAYMENT BY ELECTRONIC FUNDS TRANSFER--OTHER THAN CENTRAL CONTRACTOR REGISTRATION
		Insert <u>No later than 15 days prior to the submission of the first request for payment in Paragraph (b)(1).</u>
52.233-1	JUL 2002	DISPUTES (ALTERNATE I) (DEC 1991)
52.233-3	AUG 1996	PROTEST AFTER AWARD (ALTERNATE I) (JUN 1985)
52.233-4	OCT 2004	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM
52.242-1	APR 1984	NOTICE OF INTENT TO DISALLOW COSTS
52.242-3	MAY 2001	PENALTIES FOR UNALLOWABLE COSTS
52.242-4	JAN 1997	CERTIFICATION OF FINAL INDIRECT COSTS
52.242-13	JUL 1995	BANKRUPTCY
52.244-5	DEC 1996	COMPETITION IN SUBCONTRACTING
52.244-6	APR 2003	SUBCONTRACTS FOR COMMERCIAL ITEMS
52.245-5	JUN 2003	GOVERNMENT PROPERTY (COST- REIMBURSEMENT, TIME-AND- MATERIAL, OR LABOR-HOUR CONTRACTS)
52.245-18	FEB 1993	SPECIAL TEST EQUIPMENT
52.245-19	APR 1984	GOVERNMENT PROPERTY FURNISHED "AS IS"
52.246-23	FEB 1997	LIMITATION OF LIABILITY
52.246-25	FEB 1997	LIMITATION OF LIABILITY-SERVICES
52.249-6	MAY 2004	TERMINATION (COST-REIMBURSEMENT)
52.249-14	APR 1984	EXCUSABLE DELAYS
52.253-1	JAN 1991	COMPUTER GENERATED FORMS

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

CLAUSE NUMBER	DATE	TITLE
1852.203-70	JUN 2001	DISPLAY OF INSPECTOR GENERAL HOTLINE POSTERS
1852.216-89	JUL 1997	ASSIGNMENT AND RELEASE FORMS
1852.219-74	SEP 1990	USE OF RURAL AREA SMALL BUSINESSES
1852.219-76	JUL 1997	NASA 8 PERCENT GOAL
1852.227-70	MAY 2002	NEW TECHNOLOGY
1852.235-70	FEB 2003	CENTER FOR AEROSPACE INFORMATION
1852.243-71	MAR 1997	SHARED SAVINGS

I.2 CLAUSES IN FULL TEXT

The clauses listed below follow in full text:

<u>CLAUSE NUMBER</u>	<u>DATE</u>	<u>TITLE</u>
52.216-18	OCT 1995	ORDERING
52.216-19	OCT 1995	ORDER LIMITATIONS
52.216-22	OCT 1995	INDEFINITE QUANTITY

52.219-4	OCT 2004	NOTICE OF EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS
52.219-23	JUN 2003	NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS
52.219-25	OCT 1999	SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM-DISADVANTAGED STATUS AND REPORTING
52.227-23	JUN 1987	RIGHTS TO PROPOSAL DATA (TECHNICAL)
52.244-2	AUG 1998	SUBCONTRACTS (ALTERNATE I) (AUG 1998)
52.252-2	FEB 1998	CLAUSES INCORPORATED BY REFERENCE
1852.215-84	OCT 2003	OMBUDSMAN (ALTERNATE I) (JUN 2000)
1852.219-75	MAY 1999	SMALL BUSINESS SUBCONTRACTING REPORTING

I.3 ORDERING (FAR 52.216-18) (OCT 1995)

(a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from contract award through 60 months from the effective date of the contract.

(b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.

(c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

I.4 ORDER LIMITATIONS (FAR 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 \$1,000, 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 \$20,000,000;

(2) Any order for a combination of items in excess of \$20,000,000; or

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

I.5 INDEFINITE QUANTITY (FAR 52.216-22) (OCT 1995)

(a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.

(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum." The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum."

(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after 6 months from the end of the contract period of performance.

I.6 NOTICE OF PRICE EVALUATION PREFERENCE FOR HUBZONE SMALL BUSINESS CONCERNS (FAR 52.219-4) (OCT 2004)

(a) Definition. "HUBZone small business concern," as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference.

(1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except--

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

[] Offeror elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for--

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade Contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants.

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

I.7 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (FAR 52.219-23) (JUNE 2003)

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

"Small disadvantaged business concern" means an offeror that represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either--

(1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR part 124, subpart B; and

- (i) No material change in disadvantaged ownership and control has occurred since its certification;
- (ii) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (iii) It is identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net).

(2) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR part 124, subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or

(3) Is a joint venture as defined in 13 CFR 124.1002(f).

"Historically black college or university" means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.

"Minority institution" means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k including, a Hispanic-serving institution of higher education, as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).

(b) Evaluation adjustment. (1) The Contracting Officer will evaluate offers by adding a factor of 10 (TEN) percent to the price of all offers, except--

- (i) Offers from small disadvantaged business concerns that have not waived the adjustment;
- (ii) An otherwise successful offer of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is equaled or exceeded (see section 25.402 of the Federal Acquisition Regulation (FAR));
- (iii) An otherwise successful offer where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government;
- (iv) For DoD, NASA, and Coast Guard acquisitions, an otherwise successful offer from a historically black college or university or minority institution; and
- (v) For DoD acquisitions, an otherwise successful offer of qualifying country end products (see sections 225.000-70 and 252.225-7001 of the Defense FAR Supplement).

(2) The Contracting Officer will apply the factor to a line item or a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b)(1) of this clause.

(c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply to offers that waive the adjustment.

_____ Offeror elects to waive the adjustment.

(d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for--

- (i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;
- (ii) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern;
- (iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or
- (iv) Construction by special trade Contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.

(2) A small disadvantaged business concern submitting an offer in its own name shall furnish in performing this contract only end items manufactured or produced by small disadvantaged business concerns in the United States or its outlying areas. This paragraph does not apply to construction or service contracts.

I.8 SMALL DISADVANTAGED BUSINESS PARTICIPATION PROGRAM--DISADVANTAGED STATUS AND REPORTING (FAR 52.219-25) (OCT 1999)

(a) Disadvantaged status for joint venture partners, team members, and Subcontractors. This clause addresses disadvantaged status for joint venture partners, teaming arrangement members, and Subcontractors and is applicable if this contract contains small disadvantaged business (SDB) participation targets. The Contractor shall obtain representations of small disadvantaged status from joint venture partners, teaming arrangement members, and Subcontractors through use of a provision substantially the same as paragraph (b)(1)(i) of the provision at FAR 52.219-22, Small Disadvantaged Business Status. The Contractor shall confirm that a joint venture partner, team member, or Subcontractor representing itself as a small disadvantaged business concern, is identified as a certified small disadvantaged business in the database maintained by the Small Business Administration (PRO-Net) or by contacting the SBA's Office of Small Disadvantaged Business Certification and Eligibility.

(b) Reporting requirement. If this contract contains SDB participation targets, the Contractor shall report on the participation of SDB concerns at contract completion, or as otherwise provided in this contract. Reporting may be on Optional Form 312, Small Disadvantaged Business Participation Report, or in the Contractor's own format providing the same information. This report is required for each contract containing SDB participation targets. If this contract contains an individual Small, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan, reports may be submitted with the final Subcontracting Report for Individual Contracts (Standard Form 294) at the completion of the contract.

I.9 RIGHTS TO PROPOSAL DATA (TECHNICAL) (FAR 52.227-23) (JUN 1987)

Except for data contained on pages (entire proposal), it is agreed that as a condition of award of this contract, and notwithstanding the conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data--General" clause contained in this contract) in and to the data contained in the proposal dated 7 February 2005 and revised Business proposal dated 7 April 2005 upon which this contract is based.

I.10 SUBCONTRACTS (FAR 52.244-2) (AUG 1998) (ALTERNATE I)(AUG 1998)

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

"Approved purchasing system" means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR).

"Consent to subcontract" means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

"Subcontract" means any contract, as defined in FAR Subpart 2.1, entered into by a Subcontractor to furnish supplies or services for performance of the prime contract or a subcontract. It includes, but is not limited to, purchase orders, and changes and modifications to purchase orders.

(b) This clause does not apply to subcontracts for special test equipment when the contract contains the clause at FAR 52.245-18, Special Test Equipment.

(c) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modifications or unpriced delivery orders), and only if required in accordance with paragraph (d) or (e) of this clause.

(d) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

(1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or

(2) Is fixed-price and exceeds--

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the simplified acquisition threshold or 5 percent of the total estimated cost of the contract.

(e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

"TBD on a Task Order basis with the exception of those listed in (k) of this clause."

(f) (1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c), (d), or (e) of this clause, including the following information:

(i) A description of the supplies or services to be subcontracted.

(ii) Identification of the type of subcontract to be used.

(iii) Identification of the proposed Subcontractor.

(iv) The proposed subcontract price.

(v) The Subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.

(vi) The Subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.

(vii) A negotiation memorandum reflecting--

(A) The principal elements of the subcontract price negotiations;

(B) The most significant considerations controlling establishment of initial or revised prices;

(C) The reason cost or pricing data were or were not required;

(D) The extent, if any, to which the Contractor did not rely on the Subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;

(E) The extent to which it was recognized in the negotiation that the Subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and the Subcontractor; and the effect of any such defective data on the total price negotiated;

(F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and

(G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(2) If the Contractor has an approved purchasing system and consent is not required under paragraph (c), (d), or (e) of this clause, the Contractor nevertheless shall notify the Contracting Officer reasonably in advance of entering into any (i) cost-plus-fixed-fee subcontract, or (ii) fixed-price subcontract that exceeds the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of this contract. The notification shall include the information required by paragraphs (f)(1)(i) through (f)(1)(iv) of this clause.

(g) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination--

(1) Of the acceptability of any subcontract terms or conditions;

(2) Of the allowability of any cost under this contract; or

(3) To relieve the Contractor of any responsibility for performing this contract.

(h) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement type subcontracts shall not exceed the fee limitations in FAR 15.404-4(c)(4)(i).

(i) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any Subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement from the Government.

(j) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which were evaluated during negotiations:

I.11 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (FEB 1998)

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

_____ <http://www.arnet.gov/far/> _____

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

I.12 OMBUDSMAN (NFS 1852.215-84) (OCT 2003) (ALTERNATE I) (JUN 2000)

(a) An ombudsman has been appointed to hear and facilitate the resolution of concerns from offerors, potential offerors, and Contractors during the 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, Bruce Holmes, direct inquires to Richard Siebels, NASA Langley Research Center (LaRC), Mail Stop 144, Hampton, VA 23681-2199; phone (757) 864-2418; facsimile (757) 864-7709; email Richard.J.Siebels@nasa.gov.

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

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

I.13 SMALL BUSINESS SUBCONTRACTING REPORTING (NFS 1852.219-75) (MAY 1999)

- (a) The Contractor shall submit the Summary Subcontract Report (Standard Form (SF) 295) semiannually for the reporting periods specified in block 4 of the form. All other instructions for SF 295 remain in effect.
- (b) The Contractor shall include this clause in all subcontracts that include the clause at FAR 52.219-9.

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

J.1 CONTRACT DOCUMENTATION REQUIREMENTS

- Exhibit A Contract Documentation Requirements
- Exhibit B Contract Security Classification Specification, DD Form 254
- Exhibit C Safety and Health Plan
- Exhibit D Subcontracting Plan
- Exhibit E IT Security Implementation Plan

EXHIBIT A - CONTRACT DOCUMENTATION REQUIREMENTS**A. Monthly Financial Management Report**

1. The Contractor shall submit a monthly financial management report as provided by the Section G clause entitled "NASA 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
 - b. Contract Total. (Column 9b shall reflect total estimated cost of \$# plus fixed fee of \$#.)
 - c. Due not later than the 10th operating day following the close of the Contractor's accounting period being reported.
 - d. Each NF533M shall include a narrative explanation for variances exceeding +-5 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.)
3. The minimum reporting categories shall be included in column 6 of this report. Minimum reporting categories shall include:
 - a. Direct Labor Hours
 - b. Direct Labor Dollars
 - c. Overhead(s)
 - d. Subcontract
 - e. Material
 - f. Other Direct Cost
 - g. G&A
 - h. Total Estimated Cost
 - i. Fee
 - j. Total Estimated Cost and Fee

B. Monthly Technical Letter Progress Report -- The Contractor shall submit monthly technical letter reports for each task order describing progress of the task to date, noting all technical areas in which effort is being directed and indicating the status of work within these areas. Tasks may be summarized in one letter report, unless otherwise stipulated in individual task orders. Reports shall be in narrative form, brief and informal in content. These reports shall include:

1. A narrative statement of work accomplished during the report period.

2. A statement of current and potential problem areas and proposed corrective action.
3. A discussion of work to be performed during the next report period.

The monthly progress report shall be submitted within 10 days after the end of each calendar monthly report period. A monthly report shall not be required for the period in which the final report is due.

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. IT Security Implementation Plan. The Contractor shall submit the IT Security Implementation Plan for Contracting Officer and the Langley IT Security Manager approval no later than 30 days after award.

The Contractor shall demonstrate in the IT Security implementation compliance with FISMA, OMB and NIST requirements for IT Security before any remote access is authorized.

The Contractor shall demonstrate in the IT Security implementation plan how computers used to access Langley and other NASA Centers are managed under configuration control using the Center for Internet Security configuration guidelines and how the facility is protected against viruses, worms and other hostile code.

Contractor employees shall obtain Langley RSA tokens for access to the Langley VPN for remote access to Langley NNTS computers. The Contractor shall notify the Langley IT Security Manager immediately upon discovery of a missing RSA token. The Contractor shall notify the Langley IT Security Manager by the close of business of the termination of any employee with a VPN account. (If the employee is to be replaced the RSA token can just be disabled until the new employee is in place, otherwise the RSA token shall be returned to the Langley IT Security Manager within seven days.)

E. Property in the Custody of Contractors (NASA FORM 1018) -- The Contractor shall submit the NASA Form 1018 no later than October 15th of each year in accordance with the Section G clause entitled "Financial Reporting of NASA Property in the Custody of Contractors."

F. Subcontracting Reports

- a. The Contractor shall submit Standard Form 294, Subcontracting Report for Individual Contracts, and Standard Form 295, Summary Subcontractor Report, in accordance with the instructions on the reverse of the forms. In addition to the instructions on the reverse of the SF 295, the Contractor is required to comply with NFS Clause 1852.219-75, Small Business Subcontracting Reporting.
- b. The Contractor shall submit an SDB Participation Report in accordance with the Section I FAR Clause 52.219-25, Small Disadvantaged Business Program -- Disadvantaged Status and Reporting. This report shall be submitted within 30 days after the end of each contract year.

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

H. Evidence of Insurance -- The Contractor shall submit evidence of the insurance coverage, required by the NASA Clause 1852.228- 75 in Section H entitled "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.

Sections I-K below pertain to Small Businesses:

I. Interim patent rights report - The Contractor shall submit an annual list of all subject inventions to be disclosed as set forth in FAR 52.227-11 (as modified by 1852.227-11). This report is due every 12 months.

J. 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 (as modified by 1852.227-11). This report is due prior to contract closeout.

K. Invention disclosure reporting - The Contractor shall disclose each subject invention under the contract as set forth in FAR 52.227-11 (as modified by 1852.227-11). 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.

Sections L-N below pertain to Large Businesses:

L. Interim New Technology report - The Contractor shall submit an annual list of subject inventions, certify that all subject inventions have been disclosed (or that there are no such inventions), and certify that the procedures required by NFS clause 1852.227-70 (New Technology) have been followed. This report is due every 12 months.

M. Final New Technology report - The Contractor shall submit a list of subject inventions or certify that there were no such subject inventions, and list all subcontracts at any tier containing a patent rights clause or certify that there were no such subcontracts as set forth in NFS 1852.227-70. This report is due within 3 months after completion of the contracted work.

N. Invention disclosure reporting - The Contractor shall disclose each subject invention under the contract as set forth in NFS 1852.227-70. 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 the administration of the New Technology clause.

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: _____, Mail Stop _____ [Fill in – See below]
 Contract #: NNL06AA08B
 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:

1. A--Contract Specialist, Mail Stop 126
2. B--Contracting Officer Technical Representative, Mail Stop 130
3. C--New Technology Representative, Mail Stop 141
4. D--Cost Accounting, NF533@larc.nasa.gov
5. H--Patent Counsel, Mail Stop 141
6. I---Industrial Property Office, Mail Stop 377
7. J--Small Business Specialist, Mail Stop 134
8. K--Center Information Technology Security Manager (CITSM), Mail Stop 124
9. L--According to instructions on form
10. M--As required by Task Order
11. N--Task Monitor
12. P-- Center STI Publication Manager, Mail Stop 196
13. Q-- Industry Assistance Representative, Mail Stop 144

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

1. Monthly Financial Management Report (NASA Forms 533M): A-1, B-2, D-2
2. Monthly Technical Letter Progress Report: A-1, B-2, M-1, N-1
3. Informal Final Report: A-1, B-2, C-1, H-1
4. Formal Final Report: As specified by the Contracting Officer
5. Copy of formal final report cover letter: P-1
6. IT Security Implementation Plan: A-1, B-1, K-1
7. Report of Property in the Custody of Contractors (NASA Form 1018): I-1, L

8. Subcontracting Report for Individual Contracts (Standard Form 294) and SDB Participation Report (Optional Form 312): A-1, J-1, Q-1, L
9. Summary Subcontractor Report (Standard Form 295): L
10. Federal Contractor Veterans Employment Report (VETS-100): L
11. Evidence of Insurance Coverage: A-1, B-1
12. New Technology Report/Patent Rights Report: A-1, B-1, C-1, H-1

D. When the Contract Specialist (A) 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.

EXHIBIT B

Contract Security Classification Specification: DD Form 254

See the next 2 pages.

**DEPARTMENT OF DEFENSE
CONTRACT SECURITY CLASSIFICATION SPECIFICATION**

(The requirements of the DoD Industrial Security Manual apply to all aspects of this effort)

1. CLEARANCE AND SAFEGUARDING

a. FACILITY CLEARANCE REQUIRED

SECRET

b. LEVEL OF SAFEGUARDING REQUIRED

SECRET

2. THIS SPECIFICATION IS FOR: (X and complete as applicable)

3. THIS SPECIFICATION IS: (X and complete as applicable)

X	a. PRIME CONTRACT NUMBER NNL06AA08B		a. ORIGINAL (Complete date in all cases)	Date (YYMMDD) 060113
	b. SUBCONTRACT NUMBER		b. REVISED (Supersedes all previous specs)	Revision No. Date (YYMMDD)
	c. SOLICITATION OR OTHER NUMBER	Due Date (YYMMDD)	c. FINAL (Complete Item 5 in all cases)	Date (YYMMDD)

4. IS THIS A FOLLOW-ON CONTRACT? YES NO. If Yes complete the following **NAS1-00105, NAS1-00106, NAS1-00107 and NAS1-00108**
Classified material received or generated under (see section 13 for Preceding Contract Number) is transferred to this follow-on contract N/A

5. IS THIS A FINAL DD FORM 254? YES NO. If Yes complete the following
In response to the contractor's request dated _____, retention of the identified classified material is authorized for the period of _____.

6. CONTRACTOR (Include Commercial and Government Entity (CAGE) Code)

a. NAME, ADDRESS, AND ZIP CODE Lockheed Martin Aeronautics Company-Fort Worth Worth Lockheed Boulevard Fort Worth, TX 76101	b. CAGE CODE 81755	c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code) Defense Security Services 5800 E. Campus Circle Drive, #204B Irving, TX 75063
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7. SUBCONTRACTOR

a. NAME, ADDRESS, AND ZIP CODE	b. CAGE CODE	c. COGNIZANT SECURITY OFFICES (Name, Address, and Zip Code)

8. ACTUAL PERFORMANCE

a. LOCATION	b. CAGE CODE	c. COGNIZANT SECURITY OFFICE (Name, Address, and Zip Code)

9. GENERAL IDENTIFICATION OF THIS PROCUREMENT
FLIGHT CRITICAL SYSTEMS RESEARCH

10. THIS CONTRACT WILL REQUIRE ACCESS TO:		YES	NO	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:		YES	NO
a. COMMUNICATIONS SECURITY (COMSEC) INFORMATION			X	a. HAVE ACCESS TO CLASSIFIED INFORMATION ONLY AT ANOTHER CONTRACTOR'S FACILITY OR A GOVERNMENT ACTIVITY			X
b. RESTRICTED DATA			X	b. RECEIVE CLASSIFIED DOCUMENTS ONLY			X
c. CRITICAL NUCLEAR WEAPON DESIGN INFORMATION			X	c. RECEIVE AND GENERATE CLASSIFIED MATERIAL	X		
d. FORMERLY RESTRICTED DATA:			X	d. FABRICATE, MODIFY, OR STORE CLASSIFIED HARDWARE			X
e. INTELLIGENCE INFORMATION:				e. PERFORM SERVICES ONLY			X
(1) Sensitive Compartmented Information (SCI)			X	f. HAVE ACCESS TO U.S. CLASSIFIED INFORMATION OUTSIDE THE U.S., PUERTO RICO, U.S. POSSESSIONS AND TRUST TERRITORIES			X
(2) Non-SCI			X	g. BE AUTHORIZED TO USE THE SERVICES OF DEFENSE TECHNICAL INFORMATION CENTER (DTIC) OR OTHER SECONDARY DISTRIBUTION CENTER			X
f. SPECIAL ACCESS INFORMATION			X	h. REQUIRE A COMSEC ACCOUNT			X
g. NATO INFORMATION			X	i. HAVE A TEMPEST REQUIREMENT			X
h. FOREIGN GOVERNMENT INFORMATION			X	j. HAVE OPERATIONS SECURITY (OPSEC) REQUIREMENTS			X
i. LIMITED DISSEMINATION INFORMATION			X	k. BE AUTHORIZED TO USE THE DEFENSE COURIER SERVICE			X
j. FOR OFFICIAL USE ONLY INFORMATION:	X			l. OTHER (Specify).			X
k. OTHER (Specify)							

12. PUBLIC RELEASE. Any information (classified or unclassified) pertaining to this contract shall not be released for public dissemination except as provided by the industrial Security Manual or unless it has been approved for public release by appropriate U.S. Government authority. Proposed public release shall be submitted for approval prior to release

Direct Through (Specify):

NASA LANGLEY RESEARCH CENTER, M/S 126, HAMPTON, VA 23681-2199
ATTN: C. Lynn Jenkins, (757) 864-3284

To the Office of Public Affairs, National Aeronautics and Space Administration, Washington, DC 20546, for review.
*In the case of non-DoD User Agencies, requests for disclosure shall be submitted to that agency.

13. SECURITY GUIDANCE. The security classification guidance needed for this effort is identified below. If any difficulty is encountered in applying this guidance or if any other contributing factor indicates a need for changes in this guidance, the contractor is authorized and encouraged to provide recommended changes: to challenge the guidance or classification assigned to any information or material furnished or generated under this contract; and to submit any questions for interpretation of this guidance to the official identified below. Pending final decision, the information involved shall be handled and protected at the highest level of classification assigned or recommended. (Fill in as appropriate for the classified effort. Attach, or forward under separate correspondence, any document/guides/extracts referenced herein. Add additional pages as needed to provide complete guidance.)

ALL PERFORMANCE OF WORK FOR THIS PROCUREMENT INVOLVING CLASSIFIED INFORMATION SHALL BE PERFORMED AT GOVERNMENT OR PROPERLY CLEARED CONTRACTOR FACILITIES.

CONTRACTOR SHALL BE PROVIDED CLASSIFICATION GUIDANCE AS NECESSARY TO SUPPORT PERFORMANCE ELEMENTS INVOLVING CLASSIFIED NATIONAL SECURITY INFORMATION.

THE CONTRACTOR FACILITY SECURITY OFFICER (FSO) SHALL CERTIFY THE SECURITY CLEARANCE STATUS OF EMPLOYEES SUPPORTING THIS CONTRACT VIA STANDARD VISIT REQUEST SUBMITTED ANNUALLY OR AS REQUIRED TO THE CERTIFIER IDENTIFIED IN SECTION 16A. THE VISIT REQUEST SHALL INCLUDE THE LEVEL OF CLEARANCE, DATE OF ISSUE, INVESTIGATION TYPE AND DATE COMPLETED.

THE CERTIFIER IN SECTION 16A SHALL BE PROVIDED A COPY OF ANY DD FORMS 254 ISSUED TO SUBCONTRACTORS PERFORMING WORK FOR THIS CONTRACT.

ITEM 10J CONTINUED: INFORMATION EXCLUDED FROM PUBLIC RELEASE UNDER THE FREEDOM OF INFORMATION ACT SHALL BE MARKED "SENSITIVE BUT UNCLASSIFIED".

14. ADDITIONAL SECURITY REQUIREMENTS. Requirements, in addition to ISM requirements, are established for this contract. (If Yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies the additional requirements. Provide a copy of the requirements to the cognizant security office. Use Item 13 if additional space is needed.)

Yes No

15. INSPECTIONS. Elements of this contract are outside the inspection responsibility of the cognizant security office. (If Yes, explain and identify specific areas or elements carved out and the activity responsible for inspections. Use Item 13 if additional space is needed.)

Yes No

16. CERTIFICATION AND SIGNATURE. Security requirements stated herein are complete and adequate for safeguarding the classified information to be released or generated under this classified effort. All questions shall be referred to the official named below.

a. TYPED NAME OF CERTIFYING OFFICIAL

MICHAEL E. REAGAN

b. TITLE

SECURITY SPECIALIST

c. TELEPHONE (Include Area Code)

(757) 864-9470

d. ADDRESS (Include ZIP Code)

NASA LANGLEY RESEARCH CENTER
M/S 301, ATTN: MICHAEL REAGAN
HAMPTON, VA 23681-2199

17. REQUIRED DISTRIBUTION

- a. CONTRACTOR
 b. SUBCONTRACTOR
 c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
 d. U.S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
 e. ADMINISTRATIVE CONTRACTING OFFICER
 f. OTHERS AS NECESSARY

e. SIGNATURE

DB Form 254 Reverse, DEC 1999

EXHIBIT C
SAFETY AND HEALTH PLAN

See the next 19 pages.

Flight Critical Systems Research (FCSR)

Appendix C Safety and Health Plan NASA Solicitation NNL0575073R

**Submitted To:
NASA Langley Research Center
9A Langley Boulevard, Building 1195B, Room 105
NASA Langley Research Center
Hampton, VA 23681-2199**

October 3, 2005

**Prime Contractor:
LOCKHEED MARTIN CORPORATION
LOCKHEED MARTIN AERONAUTICS COMPANY**

SAFETY AND HEALTH PLAN

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Lockheed Martin Aeronautics Company Safety and Health Plan

Lockheed Martin Aeronautics Company's (LM AERO) safety and health plan shows how we will protect the life, health, and well-being of NASA and contractor employees as well as property and equipment. This plan discusses the policies, procedures, and techniques used to ensure the safety and health of LM AERO employees and to ensure safe all working conditions throughout the performance of the contract. The plan also addresses safety and health for subcontractor employees. Also, when applicable, the plan addresses the policies, procedures, and techniques used to ensure the safety and health of NASA employees and the public.

(NOTE: Lockheed Martin Aeronautics Company meets OSHA Voluntary Protection Program (VPP) requirements)

1.0 MANAGEMENT LEADERSHIP AND EMPLOYEE PARTICIPATION.

1.1 Policy.

Lockheed Martin's Corporate safety policy statement (CPS-015) states "Lockheed Martin Corporation is committed to conducting its operations in a manner that provides safe and healthful working conditions for employees, contractors and visitors, protects the environment and conserves natural resources. Accordingly, Lockheed Martin will:

1. Institute environment, safety & health (ESH) management systems that minimize risk, ensure ongoing compliance with applicable; laws and regulations, and promote continual improvement of ESH performance and management systems;
2. Integrate ESH considerations into business operations, including but not limited to: product design, services, procurement, manufacturing, joint ventures, property renovation/rearrangement, and business and property acquisitions, consolidations and divestitures;
3. Share ESH best practices and lessons learned among Lockheed Martin business units and entities;
4. Ensure that employees are aware of ESH responsibilities in their jobs and encourage every employee to take responsibility for ESH performance;
5. Respond to employee, community, customer and regulatory agency concerns regarding potential ESH impact from Lockheed Martin operations, as appropriate; and
6. Participate in public policy processes to promote the development of ESH laws and regulations that are protective of human health and the environment and consistent with sound science and risk assessment principles."

Safety & Health develops annual objectives to improve workplace safety programs. Progress on those objectives is tracked in Safety & Health staff meetings and in regular ESH Manager's meetings.

The objectives are reflected in the ESH Branch Director's objectives, which are submitted to LM AERO's President. Often, ESH develops joint objectives with other organizations (Human Resources, Procurement, etc.). Where appropriate, Safety & Health meets with the management of other organizations to develop implementation plans. In turn, these organizations will assign actions to the appropriate management in their own organizations.

1.2 Goals and Objectives.

LM AERO and Lockheed Martin Corporate have jointly established company-specific injury goals that, in turn, generate LM Aeronautics Company's goals. These goals flow down through site general managers and functional/program heads. Each site tracks progress on these goals monthly. Safety & Health site managers meet regularly to report on progress, and discuss innovative ways to accomplish these goals.

1.3 Management Leadership.

The senior management of the Lockheed Martin Aeronautics Company remains committed to reducing injuries. In addition to Lockheed Martin Corporate injury reduction goals, Lockheed Martin Aeronautics Company has established an injury reduction objective, which flows down to all programs and functional management. We publish injury rates and regularly track performance.

LM AERO's Vice President and Site General Managers fully support VPP and safety & health programs:

Lockheed Martin Aeronautics Company is committed to providing outstanding safety and health protection for our employees through employee involvement and effective management systems. We are also committed to continuously improve our management systems, and reducing workplace-related injuries and illnesses.

Our company also agrees to correct, in a timely manner, hazards identified through self-inspection, employee reports or accident investigations. We will provide the results of self-inspections to our employees upon request. Any employees with safety-related duties will be protected from discriminatory actions (including unofficial harassment) arising from their performance of those duties.

We agree to provide the information listed in the attachment to this statement during OSHA's on-site reviews and during the period of our participation in the program. Each year, on request, we will provide OSHA our annual injury incidence and lost workday case rates, hours worked, estimated average employment for the past calendar year, and the results of our safety and health program evaluation.

1.4 Employee Involvement.

Employee participation plays an important role in the success of LM AERO's Safety & Health Program. Employees are involved in many ways, including conducting safety inspections, participating in safety committees, making safety suggestions, reporting and correcting hazards, attending monthly safety meetings, and participating in the SAFTE program.

The company stresses that safety is part of every employee's job. Employees are responsible for being alert to potential hazards from chemicals, equipment, and machinery, for immediately reporting hazards to supervision, for ensuring that guards and other safety devices are in use, for using required personal protective equipment, and for performing work safely.

Besides notifying the supervisor or manager of the need to correct a safety problem, an employee may submit a trouble call to the Facilities Trouble Desk. Items submitted as "safety trouble calls" (i.e., posing an immediate hazard) receive immediate attention. Employees can also report hazards anonymously by calling or submitting a written notice to Safety & Health. They may also report the concern to the General Safety Committee member, or to the Building Manager.

Supervisors are required to hold monthly safety meetings with their employees. Safety & Health annually publishes a safety meeting topic schedule and provides training materials for each topic. These meetings provide, among other things, a forum for employees to report and discuss safety concerns.

SAFTE Team Program:

The Safety Awards for Team Excellence (SAFTE) program is open to employees working in either factory or factory support jobs. The program is not a "traditional give-away" incentive program, and does not focus just on preventing injuries. Rather, it incorporates behavioral safety principle and encourages suggestions and other activities that positively impact workplace safety. It is based on a team concept, with employees from similar jobs working together to improve safety in their areas. Each team has a team leader and a coach from management. Points are awarded to teams for activities that improve workplace safety, such as submitting safety suggestions and developing lists of safe practices specific to their jobs. Points are subtracted for occupational injuries and illnesses. At the end of each 6-month period, the most effective teams receive significant awards. A team faces disqualification if there is evidence establishing the non-reporting of recordable injuries.

The SAFTE Program includes an active safety suggestion process. Team members submit suggestions on improving workplace safety to Safety & Health. Suggestions that meet the award criteria (clearly state the issue, suggest a fix, and provide significant improvement in safety) are awarded points.

The goal of the program is to get employees involved, working together to find and fix problems and to take an interest in the safety of their fellow employees. Employee involvement, as demonstrated in the SAFTE Program, has been a key factor in the overall success of LM AERO's Injury and Illness Prevention Program.

In 2001, the Safety Awards for Team Excellence (SAFTE) Program completed its 5th successful year with 466 members on 25 teams. The program differs from traditional "incentive" programs, in that it focuses on teamwork and taking proactive measures (not just on low injury rates, which could encourage non-reporting of injuries). We encourage teams to develop safe work practices, pass audits, and submit suggestions that improve workplace safety. In the past 5 years, SAFTE teams have submitted over 4,100 suggestions. Teams present their best suggestions to groups such as the General Safety Committee and Building Managers, for possible implementation in other areas.

General Safety Committee:

The original Lockheed General Safety Committee was established in 1947, and has been continuously active since. The Committee continues to be a major tool for two-way communication with our workforce. It encourages its members to actively seek out actual or potential unsafe conditions, and take immediate action to correct them. If a condition remains, the aware member must bring it to the Safety Committee for appropriate action. Members are also encouraged to participate in accident/incident investigations, and to perform monthly inspections of their work areas to identify potential hazards. Also, the Committee asks members to participate on subcommittees - Training, Inspections, Communications, and Recognition. A union member now co-chairs the Committee.

Senior management appoints the General Safety Committee (GSC) chairperson. The GSC meets monthly. The Committee is made up of bargaining unit and management representatives. There are currently approximately 30 active members. The Union selects Collective bargaining unit members, either by direct appointment or election. The appointees represent a cross-section of LM AERO areas/buildings. Senior management appoints management members to the GSC. In addition, independent safety committees exist across the facility to support LM AERO's General Safety Committee. The site committees meet monthly; they publish the meeting's minutes.

The General Safety Committee's (GSC) role is to:

1. Provide a forum for labor and management to communicate on matters concerning workplace safety or health and to proactively identify and resolve actual or potential hazards in the workplace.
2. Enhance injury and illness prevention programs by providing training to GSC members on effectively identifying potential safety or health concerns.
3. Promote safety and health in the workplace, including recognition of individuals for positive contributions to injury and illness prevention.

The committee members perform the following functions:

1. Serve as safety representatives for their assigned areas;
2. Encourage safe work practices among fellow employees;
3. Conduct building inspections
4. Review significant injuries/illnesses
5. Submit recommendations to the committee for recognition of individuals or groups demonstrating outstanding achievement in safety
6. Attend monthly committee meetings
7. Discuss environmental, safety, and health issues requiring corrective action
8. Suggest ways to improve workplace safety and health, such as through engineering controls, modified work tools, and use of personal protective equipment.

General Safety Committee members must conduct periodic inspections of their assigned areas to monitor safety and health performance. Safety & Health has developed an inspection checklist for the members to use. After inspections, GSC members inform area management of their findings so corrective action can be taken. GSC members are encouraged to contact Safety & Health if they feel unsure whether a hazard has been corrected or addressed satisfactorily. At the monthly meetings, GSC members can raise safety or health concerns if they are still unsure of the status. GSC members are often asked to focus on a specific type of items during their inspections, and to report on their inspection findings during the meetings.

Training:

GSC members receive training on hazard recognition and other relevant safety and health subjects during GSC meetings, or at semi-annual sessions conducted by Safety & Health staff. During monthly GSC meetings, safety training topics are covered, including: Hazard Communication, Lifting Techniques, Machine Safeguarding, Respirator Usage, Noise Hazards, Electrical Safety, Lockout/Tagout, Fire Safety, Ventilation Systems, Back Safety, Hand Protection, Hazardous Spills, and Emergency Action Plans.

Meetings:

The GSC meets monthly. The Chairperson chairs the meetings. During a meeting, there is discussion regarding company injury and illness statistics and trends. The GSC reviews recent accidents and inspection/audit results. Safety & Health generally presents short topics on relevant subjects for discussion. GSC subcommittees report on their activities. Guest speakers sometimes speak on appropriate topics. The meetings usually finish with a review of open action items. Then, each member has a chance to bring up new concerns for discussion and resolution.

After each meeting, the GSC publishes the meeting's minutes. The minutes describe the agenda items, past action items with closure status, and new action items with corrective action assignments. Each member and meeting attendees receive a copy of the minutes. Members of senior management also receive the GSC meeting minutes.

1.5 Assignment of Responsibility.

LM AERO has committed resources to support the Safety & Health needs of the company. The Safety & Health Department staff, the Building Managers, contractors and Corporate resources all fulfill significant roles.

a. Safety Representatives:

The Safety & Health Manager is responsible for the LM AERO's adherence to safety, health, and fire protection concerns and goals, and who will ensure appropriate participation in meetings and other activities related to its Safety & Health program. He will also be the Designated Safety Official responsible for implementation of this plan and all formal contacts with regulatory agencies and with NASA.

The Safety & Health staff includes one manager, one chemist/hazardous materials specialist, four safety engineers (including one Certified Safety Professional), two industrial hygienists (one a Certified Industrial Hygienist), one part-time contract industrial hygienist (also a CIH), one fire chief and two fire prevention specialists.

In addition, there are numerous Building Managers (not directly reporting to or funded by ESH) who provide a critical role in the company's safety program. They function as the Building Fire Wardens, maintain building emergency action plans (to facilitate evacuations during fires and other emergencies), conduct regular inspections to identify and correct workplace hazards, and disseminate ESH-related information. They serve as points of contact for emergency planning and response officials and their representatives.

Where there is a special need, Safety & Health contracts with outside contractors to provide services. Contractors monitor asbestos and manage asbestos removal projects, monitor lead abatement, etc.

In addition, Lockheed-Martin's Corporate ESH organization has a wide range of safety and health expertise to draw from. It has developed a list of subject matter experts throughout the corporation to facilitate information exchange. It is also available to perform on-site consultation and training on many subjects.

The Safety & Health Dept. performs a wide range of functions. It provides traditional safety engineering and industrial hygiene services, including conducting inspections to identify hazards, evaluating those hazards, and recommending controls. Industrial hygienists perform I.H. monitoring using company owned and calibrated direct reading instruments (noise meters, oxygen/gas meters, etc.) or collect samples and send them to an off-site AIHA-certified contract laboratory for analysis.

b. Medical:

The Medical Department performs employee physicals, as well as health evaluations and medical monitoring and evaluations required by OSHA regulations. Employee audiograms, spirometry, and chest x-rays are done on-site. Communication between Medical and Safety & Health departments is excellent. Medical immediately notifies Safety & Health whenever there has been a serious injury or illness, or whenever there is any chemically related incident. Safety & Health, Medical, and Workers' Compensation meet at least monthly to discuss ongoing cases and ensure that good coordination exists.

1.6 Provision of Authority.

LM AERO's Safety & Health Plan is consistent with applicable NASA requirements and contractual direction as well as applicable Federal, State, and local regulations. Safety & Health will monitor changes to applicable requirements and meet them as needed, throughout the life of the contract.

1.7 Accountability.

Company policy holds LM AERO managers and supervisors responsible for employee safety and health. The Safety & Health organization assists and supports LM AERO organizations in complying with company safety and health policies and procedures, which in turn ensure compliance with laws and regulations. Management is responsible for identifying and correcting discrepancies, for providing safety information (such as MSDSs and other hazardous material handling information) to workers, for enforcing compliance with rules, and for taking disciplinary action, as needed.

Although the company's primary emphasis is on determining the root cause of injuries and correcting unsafe behavior through proactive means, sometimes employee discipline is appropriate. The intent of any disciplinary action is to correct unacceptable behavior and violations of LM AERO policies and rules.

Disciplinary action for infractions of safety rules is handled the same as for infractions of any other company rule. Discipline is covered in both Human Resources Directives and in the collective bargaining agreements. Discipline can include:

1. Informal Discussion (not posted to employee's record)
2. Verbal Warning/Formal Discussion (posted to employee's record)
3. Written Criticism or Employee Performance Notice (posted to employee's record)
4. Final Written Criticism (this step may be combined with suspension, when deemed appropriate)
5. Downgrade (when appropriate)
6. Discharge

During accident investigations, Safety & Health will recommend disciplinary action for employees found to have a pattern of misconduct or where there is evidence of intentional infractions of safety rules.

The performances of managers and supervisors are evaluated annually by their own management. Safety & Health compliance is included on annual performance reviews under Ethics. Annual merit increases are based, in part, on these performance appraisals.

Company policy requires every organization to conduct a monthly safety meeting. Every year, Safety & Health publishes a package of safety meeting topics, which contains a schedule. The package includes a short outline for each topic, including review questions to be covered. The questions are to solicit discussion and input from workers. In conducting the meetings, management is also to review accidents that have occurred, recognize employees for contributions to workplace safety, and encourage discussion. In addition to monthly safety meetings, many organizations, especially in Manufacturing and Maintenance, have more frequent crew meetings in which safety issues are discussed.

Every area has a Building Manager, who is responsible for overseeing safety and health. Building managers conduct monthly inspections to identify and correct hazards, and also maintain the building's emergency action plan. Each area also has a General Safety Committee representative, who conducts inspections, often in conjunction with the Building Manager. Employees are encouraged to raise safety concerns to their supervisors or managers, to the Building Manager or GSC representative, or to call Safety & Health directly.

1.8 Program Evaluation.

As part of VPP certification, Safety & Health conducts an annual review of safety management systems. In addition, OSHA conducts a thorough on-site review every 3 years. Safety & Health also annually assesses safety programs to ensure conformance with ESH management system (from the ISO 14001 EMS model) requirements. The purpose for this assessment is to determine the effectiveness of the ESH management system program, to identify areas requiring improvement, report the results to senior management, and track corrective action.

Process Integrity, an LM AERO internal auditing organization, conducts stringent reviews of elements of the ESH management system and determines the effectiveness and adequacy of the ESH program. All elements of the system are reviewed within a 3-year cycle. The ESH management system elements include conformance with: legal and other requirements; objectives and targets; program implementation and operation; structure and responsibility; training, awareness and competence; documentation and document control; operational control; emergency preparedness and response; checking and corrective action; monitoring and measurement; nonconformance, corrective and preventive action; records; audit; and, management review. The results of this assessment are presented to LM AERO's senior management to achieve continual improvement and effectiveness.

Lockheed Martin Corporate Environmental Safety & Health also conducts regular audits of operating companies. The audits include many of the ISO/VPP elements (Training, Contractor Safety, Management Systems, Hazard Assessments, Industrial Hygiene Programs, Safety Programs, etc.) If deficiencies are found, the audit team issues findings, and the company submits a corrective action plan, which is closely tracked.

1.9 Documentation.

LM AERO's safety & health procedures are thoroughly documented in its Environmental Safety & Health Manual. The Environmental Safety & Health Manual is the primary source of company safety and health policies, procedures and rules. The Manual is readily accessible through the company's NT computer network. LM AERO maintains thorough documentation of injury and illness statistics, including injury rates by program/function, types of injuries, and root causes.

Material Safety Data. LM AERO maintains an electronic image database of every Material Safety Data Sheet (MSDS) used on-site. LM AERO provides MSDSs to employees, customers and other parties via an automated phone-fax system (a web-based system is also currently under development), which can be accessed by telephone anywhere in the U.S.

Hazardous Materials Inventory. LM AERO maintains an inventory of all hazardous materials used or stored on-site, and submits quarterly/annual inventory reports to regulatory agencies as required by state and federal regulations. The inventory includes: the identity of the material, its location by building/area, and the quantity normally kept at each location.

1.10 Government Access to Safety & Health Program Documentation.

LM AERO will make all safety and health documentation (including relevant personnel records) available for inspection or audit at the Government's request.

1.11 Safety Requirements Review.

LM AERO will, on request, participate in the review and modification of safety requirements implemented by the Government including any referenced documents therein.

2.0 WORKPLACE ANALYSIS.

2.1 Hazard Identification.

1. Comprehensive Survey. A "wall to wall" engineering assessment of the work site including facilities, equipment, processes, and materials (including waste) is covered by the company 's hazard assessment program is made up of several components. The central component is the Job Hazard Analysis (JHA) Program; however, the Facilities Checklist Program, the Workplace Surveillance Program (WSP) and the Accompanied Inspection Program (CAP) all related to the Job Hazard Analysis Program.

Under the JHA Program, Safety & Health ranks company operations by safety risk. Based on the operation's risk, it establishes an annual schedule and conducts routine job hazard analyses (JHAs). During the JHA, each operation is systematically broken down, step by step, into individual processes, and the hazards and required control measures for each process are identified. Worker and management input is incorporated into the JHA.

After the analysis, Safety & Health prepares a "Summary of ESH Requirements" (SER). The SER summarizes the major safety-related requirements (such as worker training, personal protective equipment, work practice, and administrative controls) for the operation. A copy of the SER and the JHA is sent to the operation's management, along with directions to post the documents in the area, review them with affected employees, and use them in worker training and orientations. Management is also requested to contact Safety & Health if the operations change significantly, so the JHA can be revised.

After Safety & Health performs the initial JHA, it is reviewed and updated whenever Safety & Health is notified of a significant change in the operation. This occurs through the Facilities Checklist Program, by management notification, by WSP results, or during CAP audits. Even if not notified of a change, Safety & Health periodically reviews existing JHAs and updates them as needed.

2. Change Analysis. Under the Facilities Checklist program, Safety & Health addresses modifications in facilities, equipment, processes, and materials (including waste); and related procedures for operations and maintenance. ESH reviews proposed new (or modified) processes and equipment, identifying safety issues and concerns, and ensuring they are addressed before the new or modified process begins operation.
3. Hazard Analysis. In addition to the above, Safety & Health addresses facilities, systems/subsystems, operations, processes, materials (including waste), and specific tasks or jobs under the following programs:

Under the Accompanied Inspection Program, Safety & Health inspects individual buildings, accompanied by the Building Manager, identifying safety compliance issues. Correction notices are issued for discrepancies and are tracked to closure.

Under the Workplace Surveillance Program, Safety & Health conducts industrial hygiene reviews of operations posing a significant risk of overexposure to chemicals or physical agents. Results are sent to management and conveyed to affected workers.

2.2 Inspections.

LM AERO's Safety & Health department conducts routine self-inspections under the Accompanied Inspection Program to identify worker safety compliance concerns, initiate corrective action, educate Building Managers, and evaluate company performance related to ESH compliance. Building Managers and GSC members also conduct monthly self-inspections of their areas.

Safety engineers conduct the inspections, accompanied by Building Managers and GSC members, if available. Inspections cover compliance with many aspects of industrial safety. They include confined spaces, cranes and hoists, electrical safety, emergency response, explosives safety, fall protection, life safety, lockout/tagout, machine guarding/hand tools. They also include general industrial hygiene issues (such as hazard communication, toxics, blood borne pathogens, personal protective equipment (PPE), and radiation safety) but safety engineers refer more complex health issues to industrial hygienists. Safety engineers review safety meeting records and Building Manager inspection records, and confirm that operations have received JHA results and have briefed workers.

Safety & Health issues correction notices to management to document discrepancies and ensure they are corrected. Closure of correction notices requires written responses describing the corrective action that was taken. Safety & Health tracks correction notices to closure by entering relevant information into a computerized tracking database. Safety & Health reviews open correction notices monthly. Appropriate action, such as notifying upper management, is taken on delinquent correction notices.

In addition, Building Managers conduct regular (monthly for shop areas, quarterly for office areas) inspections using a checklist provided by Safety & Health. The Building Manager is responsible for initiating corrective action for discrepancies found. Safety & Health conducts hazard recognition training for Building Managers to assist them in performing effective inspections.

General Safety Committee members also conduct regular inspections of their assigned areas. Where possible, they coordinate with Building Manager inspections to promote a team inspection approach. GSC members use an inspection checklist provided by Safety & Health, and they receive training on hazard recognition and on using each section of the checklist in monthly GSC meetings.

2.3 Employee Reports of Hazards.

LM AERO encourages employees to report hazardous conditions (e.g., close calls)

- Employees should correct hazards themselves, if appropriate and possible (i.e., unplugging an extension cord which is a tripping hazard).
- If employees cannot correct the hazard themselves, they may place a trouble call to the Maintenance Trouble Desk, if the corrective action is relatively simple (i.e., replacing a guard on a machine). When placing the trouble call, if a serious hazard exists, they should note it is "Safety-Related", which are given the highest response priority.
- Employees can report hazards or safety concerns to their immediate supervisor or manager. If this does not correct the condition or give the employee satisfaction, they can notify the General Safety Committee (see General Safety Committee section) or the Building Manager (see Building Manager Program section) either in monthly meetings or in-person. The Building Manager's name and telephone number is posted at each building, and posters identify the local GSC representative.

- Employees may phone or otherwise contact any ESH Branch employee or submit a note through the company's internal mail or electronic mail systems. Reported concerns are followed up and resolved by ESH personnel. If the caller's name was given, they are contacted to ensure the concern has been addressed. Responses to Hotline calls are documented and filed.
- Employees are also encouraged to voice safety concerns during monthly safety meetings, where the manager or supervisor can address them, or contact Safety & Health for resolution. Safety & Health periodically publishes ESH organization charts and phone numbers, so employees are familiar with the safety personnel assigned to their areas and can notify them either in-person or by phone of safety concerns.
- LM AERO encourages employees to correct hazards through the SAFTE Program. Team members identify hazards and submit workplace safety suggestions. Employees are also encouraged to report hazards to their building managers, general safety committee members, or to call Safety & Health directly. Safety hazard reporting and information telephone numbers are posted throughout the plant on ESH information boards.

3.0 MISHAP INVESTIGATION AND RECORD ANALYSIS.

3.1 Mishap Investigation.

LM AERO requires an accident report and the investigation of all OSHA recordable occupational injuries and illnesses, as well as "near misses." The supervisor or manager of the injured or ill employee conducts the initial investigation on an "Injury/Illness/Incident Investigation – Supervision Report" form. Safety & Health provides accident investigation training, available on the company's NT network, for supervisors and managers.

Supervisors send accident reports to Safety & Health, who provides copies to the Medical and Workers' Compensation Departments. Safety & Health reviews Supervisor reports to ensure they are complete, with special attention paid to corrective action.

In addition to the supervisor/manager investigations, the Safety & Health investigates significant occupational injuries or illnesses, primarily those with lost time. Safety & Health also investigates whenever there is a possible serious discrepancy involving safety rules (such as machine guarding, lockout/tagout, etc.). The Safety & Health staff has been trained on accident investigation and root cause analysis. Safety & Health also involves the appropriate GSC member on any accident investigation it conducts.

When notified, the Medical Department enters all occupational injuries and illnesses (whether recordable or not) into a computer database. Safety & Health also uses the database to identify injury/illness trends and potential problem areas. This is also done at the request of management. The database contains 88 fields, allowing the requester to perform many different queries. As a result of such research, the Safety & Health Division conducts surveys, corrects hazards, and initiates new training programs to respond to identified injury/illness trends.

The Safety & Health Division reports on accidents and injury/illness trends to the General Safety Committee. During the monthly General Safety Committee meeting, Safety & Health solicits input and suggestions from Committee members on injury prevention, corrective action, training needs, etc.,

3.2 Trend Analysis.

LM AERO performs trend analysis of accident investigations and other injury/illness data. Root causes are analyzed and reported to the General Safety Committee and Building Managers. LM AERO also uses trend analysis results to develop annual objectives and continuous improvement projects. LM AERO also maintains a Log of Occupational Injuries and Illnesses (OSHA 300) and posts the required summary every year.

4.0 HAZARD PREVENTION AND CONTROL.

4.1 Appropriate Controls.

4.1.1 Hazardous Operations.

Under the job hazard analysis (JHA) program, Safety & Health staff systematically reviews existing LM AERO operations posing the highest risk to worker safety, identifying hazards and required controls for each step in the process. The degree of safety risk posed and the nature of the operations (i.e., whether changes occur frequently or infrequently). JHA results are conveyed to management, and are passed on to affected workers.

Under the Facilities Checklist program, Safety & Health reviews proposed new (or modified) processes and equipment, identifying safety issues and concerns, and ensuring they are addressed before the new or modified process begins operation.

Baseline and initial safety and health surveys of new or modified processes or equipment is conducted under the Facilities Checklist program. Through this program, LM AERO ensures safety and health concerns associated with new equipment or processes are analyzed for potential hazards prior to use and ensures they are addressed before the operation begins.

A Facilities Project Assessment Checklist is generated for every Facilities project, other than office relocations. The checklist is triggered by a Facilities Request Form (Form 3166), which the Facilities Project Engineer and an ESH Branch Coordinator complete. This checklist covers ESH issues and concerns (lockout/tagout, confined spaces, fall protection, etc.) that relate to any new or modified equipment or process. ESH has trained Facilities Project Coordinators on basic ESH requirements and hazards related to construction activities, and so they may adequately identify ESH issues/concerns and refer them to appropriate ESH staff.

Very few, if any, jobs with significant safety and health concerns occur without Facilities involvement and a Facilities Request Form 3166. Rarely, manufacturing engineers (MEs) may install a piece of equipment without Facilities involvement. MEs have been briefed on the need to involve ESH if any project involving potential safety and health issues does arise.

Based on the checklist, Safety & Health ensures that applicable safety requirements are met, including installation of exhaust ventilation systems, use of fall protection systems, use of personal protective equipment, and implementation of PSM requirements. Where operations pose significant safety and health concerns, the Safety & Health Manager routes the checklist to the JHA Coordinator for an initial job hazard analysis and inclusion in the JHA program.

The Facilities Branch uses qualified and knowledgeable Architectural and Engineering (A&E) firms to ensure equipment and facilities are designed to meet environmental, safety & health requirements. Safety & Health staff is consulted at the beginning and at other stages of construction to ensure these requirements are addressed.

During the construction phase of the project, the Facilities Branch interfaces with ESH to resolve any potential problems or concerns. Once the project is completed, ESH usually performs a final inspection (a "safety check") before the equipment or process begins operation. On machinery requiring guarding, Safety staff inspects the equipment after installation and places an inspection sticker on approved equipment.

Workplace Surveillance Program

The company addresses IH concerns through the Workplace Surveillance Program (WSP). LM AERO industrial hygienists administer the Workplace Surveillance Program (WSP). Industrial Hygienists identify LM AERO operations posing potential health risks to employees, establish an annual review schedule, perform reviews (and conduct monitoring, where needed) of air contaminants and other hazards (e.g., noise, radiation), and perform re-evaluations.

Based upon this review, Safety & Health identifies the need for engineering controls, personal protective equipment and other workplace controls. Safety & Health periodically updates the workplace surveillance schedule to ensure that high-risk operations and changes to existing processes are evaluated. Quarterly, Safety & Health reviews WSP results to identify changes in operations requiring job hazard analyses (JHAs) to be revised.

Industrial hygiene sample analysis is performed at an American Industrial Hygiene Association (AIHA) accredited laboratory. After evaluating monitoring results, Safety & Health provides the results to department management, and ensures the results are passed on to affected employees and, if appropriate, to others performing similar operations. Safety & Health enters monitoring data.

4.1.2 Written Procedures.

Lockheed Martin Aeronautics Company written procedures governing hazard prevention and control are available on request.

4.1.3 Protective Equipment.

Respiratory Protection Program

Based on monitoring results or knowledge of the process, LM AERO industrial hygienists determine when respiratory protection is needed and identify the appropriate respirators to be worn. In general, LM AERO's policy is that respirators must be worn if employee exposure is greater than 50% of the OSHA PEL or ACGIH TLV, whichever is lower, and engineering controls are not feasible. Respirators can also be worn in the interim, while engineering controls are being implemented. Disposable respirators may be worn at exposure levels below the 50% exposure level. LM AERO has a special policy on disposable respirators. Employees are allowed to wear disposable respirators for nuisance situations only (i.e., exposure less than 50% of the PEL/TLV). Employees requesting to use disposable respirators receive a one-time written information sheet, which is documented. No medical evaluations are required.

Employees required to wear respirators are medically evaluated annually by the Medical Dept. Employees currently receive fit-tests during the biennial (every 2 years) training, which is specific for the respirator worn (Note: this will be changed to annual training per the new respirator standard.). The Technical Training Department provides training and maintains the training records in a computerized tracking system. Safety & Health audits respirator training classes annually to ensure the accuracy of the information covered.

Other Personal Protective Equipment

Other than respirators and hearing protection, LM AERO also provides appropriate personal protective equipment (PPE) such as safety shoes, gloves, eye protection, and protective clothing.

Safety engineers and industrial hygienists conduct job hazard analyses to identify hazards and appropriate control measures, including the use of appropriate PPE. Safety & Health also publishes general guidelines on PPE use, and area supervision determines which jobs or employees require the use of PPE. Supervisors instruct workers on how to properly use PPE. PPE use is also covered periodically in safety meetings.

PPE is obtained through tool cribs. Only PPE approved by Safety & Health may be purchased. Safety & Health approves every request and funds PPE purchases.

4.2 Maintaining Facilities Documentation

LM AERO facilities baseline documentation will be provided and tasks implemented as required by NASA.

4.3 Preventive Maintenance.

LM AERO assures the routine maintenance of critical workplace equipment through its "STAR" system, a computerized preventive maintenance management system. This system is controlled and operated by the Planned Maintenance Organization in the Facilities Engineering Branch, which oversees all preventive maintenance (PM) functions.

The STAR program generates PM orders, tracks the PM activities, and provides management with status reports on various aspects of PM operations (manpower forecasts, PM history, performance criteria, etc.). This system contains interactive relational databases used to perform a variety of functions.

Equipment selected for PM inspection must meet established compliance criteria. These criteria are based on requirements from state, federal, or local agencies, the Environmental, Safety & Health Branch, Air Force contracts, LM AERO's insurance underwriters, operating departments, or the Facilities Branch.

The system issues PM worksheets every Monday to the responsible Maintenance employee for the week's PM activities. When the Maintenance worker completes the work, he returns the completed worksheet to the PM Administration for closure. PM work that cannot be completed must be justified (i.e., security access denial, inability to locate, etc.). A letter is then sent the manager of the affected area, requesting that the condition be corrected and to notify the Planned Maintenance Organization so the PM can be completed. Records are maintained by the Planned Maintenance Organization per retention schedule requirements.

4.4 Medical Program.

LM AERO's Medical and Safety & Health Departments are part of the Environmental Safety & Health organization, greatly facilitating communication between the two departments and helps to ensure close cooperation between the medical, industrial hygiene, toxicology and safety engineering functions.

The Medical Department consists of one full-time occupational physician, a medical coordinator/administrator, three full-time nurses and one part-time contract nurse. All the nurses are either registered (R.N.) or licensed (L.N.) and CPR/First Aid certified. All medical staff receives annual bloodborne pathogen training.

Only Medical personnel and specific trades (i.e., electricians working on high voltage equipment) are required to receive CPR/First Aid training. On a voluntary basis, First Aid and CPR training is offered to Building Managers and GSC members. Also, Human Resources offers the same training to all employees on company time and free of charge. All Building Managers and Plant Protection gates are issued basic first-aid kits, with bandages and antiseptic.

Medical hours are from 7:00 – 4:00, Monday through Friday. During the day shift, workers with minor cuts and abrasions may access basic first aid kits (kept by Building Managers and Plant Protection) or they may go to Medical for attention. For more extensive injuries, requiring medical attention but not life-threatening, injured workers are instructed to go to Medical. For life-threatening situations, employees are directed to call Central Dispatch and request paramedics.

During off-shifts, Building Managers and Plant Protection have basic first aid kits for minor injuries. For more extensive injuries requiring medical attention, management is instructed to call LM AERO's Central Dispatcher, who will either call an ambulance or the paramedics, as appropriate. The response time of either is less than 10 minutes.

The Medical Department performs new employee physical exam. They also perform medical certification exams (spirometry for respirator use, audiograms for the hearing conservation program, etc.). While the emphasis is on occupational injuries and illnesses, it also treats, on a limited basis, non-occupational injuries and illnesses. The Medical Department also prescribes and coordinates on-site physical therapy services for occupationally injured workers.

The Medical Department maintains the injury/injury database for OSHA recordkeeping requirements. Monthly, members of the Medical Department and the Safety & Health Manager meet with Workers' Compensation in a Case Review meeting. The meeting's purpose is to review the facts of potential occupational cases, make decisions about the occupational nature of cases, and ensure rationale and documentation exists for both workers compensation and OSHA recordkeeping determinations.

5.0 EMERGENCY RESPONSE.

Building Emergency Action Plans:

Each building manager prepares a Building Emergency Action Plans (BEAPs) for the buildings for which he is responsible. Building managers review their BEAPs every six months and update them as necessary. The Building Manager Program Coordinator (an ESH staff person) also reviews BEAPS annually.

BEAPs cover emergency communication within buildings, authority for specific evacuation tasks, and measures to protect personnel and equipment. The BEAP specifies a Building Emergency Monitor or his alternates for each building, who are responsible for accounting for building occupants. BEAP procedures are covered annually in monthly safety meetings.

Based on the complexity of the building and other factors, Building Managers also specify in BEAPs whether and how often building evacuation drills are required. Building managers document the effectiveness of these drills on evaluation forms.

Contingency Plan:

LM AERO's Environmental Safety & Health (ESH) staff maintains the company's Contingency Plan, which describes the actions required for responding to chemical spills and other emergencies. The Contingency Plan is required under RCRA (the Resource Conservation & Recovery Act).

Employees working with chemicals are trained on how to safely use such chemicals, including how to clean up incidental (small) spills in the workplace. Employees are not expected to handle unfamiliar chemicals, or to perform spill clean-up or response functions for which they have not been trained. For larger spills, they summon help by calling the Emergency Dispatcher. Depending on the situation, the Dispatcher can contact the Hazardous Materials & Waste (HM&W) group, or they may summon L.A. County Fire Department assistance.

Employees receive instruction on handling chemical spills and other emergencies through safety meeting topics. Also, in the annual Security Re-briefing, employees receive yearly refresher information on this topic, and the Security Branch tracks completion of this training.

Emergency Response Plan:

The majority of chemical spills encountered at LM AERO facilities are incidental in nature and do not require additional outside intervention. However, there may be certain conditions that pose a significant enough threat to employee health and safety or to the environment where additional resources, such as from local fire agencies or hazardous waste contractors, may be required. In addition, LM AERO's HM&W group responds to reported chemical spills or releases on plant property. Under HAZWOPER, they perform only "First Responder – Operations Level" duties. They evaluate whether such incidents can be readily managed with available equipment, personnel, and resources and take only defensive action, outside the actual zone of the emergency. Only after the emergency is over and the situation stabilized, are they involved in spill clean-up. These actions are outlined in the LM AERO Emergency Response Plan (ERP).

Self-Contained Breathing Apparatus (SCBAs) used by the HM&W are for non-emergency use only. They are used during spill clean-up, or in other non-emergency situations requiring the respiratory protection factor appropriate to SCBAs.

Disaster/Crisis Management:

The LM AERO Security Department administers and coordinates the LM AERO Crisis Management Manual. This document provides LM AERO management with procedures for preparing for, responding to, and recovering from a catastrophic emergency or disaster involving LM AERO personnel or facilities. Pertinent emergency actions are included in the LM AERO telephone directory, including emergency preparedness and evacuation instructions for fires, chemical accidents, power failure, or other incidents.

Other Plans:

In addition to the above, LM AERO maintains other regulatory-related documents related to emergencies, such as the LM AERO Business Plan, and the LM AERO Spill Prevention Control and Countermeasures (SPCC) Plan.

LM AERO submits prepares and submits its Business Plan to the local fire department for use in their emergency response and planning. The Plan includes inventories of hazardous chemicals, maps showing LM AERO hazardous materials locations, and describes chemical management procedures. It also includes diagrams of plant electrical, domestic water, chilled water, fire protection, natural gas and compressed air, and high pressure steam systems.

The SPCC Plan establishes procedures and responsibilities for preventing and, if they occur, effectively dealing with spills of oil and petroleum products that could pollute the soil, groundwater, and surface water.

6.0 SAFETY AND HEALTH TRAINING.

New Employee Orientations:

Formalized safety and health training for new employees starts on the first day of employment. As part of the hiring process, new or recalled hourly employees, as well as appropriate salaried employees, receive an orientation from Human Resources covering safety and health programs. The orientation covers the company's Injury & Illness Prevention Program, Hazard Communication Program, Back Safety information, etc.

Once new-hires are assigned to their departments, or when existing employees are transferred and report to their new departments, supervisors or managers provides them with a department-specific safety orientations. The orientation must include specific topics, including departmental safe work practices, emergency information, which are documented on an "Employee Orientation Checklist." Supervision is responsible for ensuring that crewmembers follow safety and health rules for each job that the employee performs.

Monthly Safety Meetings:

Every supervisor and manager is required to conduct monthly safety meetings for their employees. Safety & Health provides supervisors assistance and guidance on conducting monthly safety meetings. At the beginning of the year, Safety & Health publishes an annual package of safety meeting schedules and lesson plans for each supervisor/manager.

In the package, there is a 12-month schedule that is divided into tracks (i.e., Production/Maintenance, Engineering/Office, and Laboratory). The topics in each track are geared to the type of operations and hazards that might be found by workers in the track.

Several mandatory Hazard Communication topics are included every year, as well as a topics on Building Emergency Action Plans, personal protective equipment, safe lifting/back safety, etc.

Skills Training (CERTS):

The Skills Training Committee, made up of Technical Training, Safety & Health, Production, and QA representatives meets monthly and oversees course content, training, requirements, and conditions of training courses performed by the Technical Training Organization ("CERTS" classes).

The Technical Training Department, with support from Safety & Health, provides CERTS safety training. Based on their employees' tasks and responsibilities, management specifies the training and certification requirements of each employee for which they are responsible. Safety & Health also conducts surveys and job hazard analyses, which assists the management in determining training requirements. Training maintains safety training records pertaining to certification, notifies affected management when employees are due for re-training, and schedules training classes. With certain high hazard skills, Supervisors must be certified on the same safety classes as their crews.

Safety & Health assists Technical Training in developing and updating training classes. It establishes an annual audit schedule and periodically audits safety-related CERTS classes conducted by Technical Training. After the audit, Safety & Health provides constructive input to the instructor on course content, delivery, and overall effectiveness. Also, whenever Safety & Health is aware of a change in regulations affecting training, changes are made through the Skills Committee, to ensure training course information is kept up to date and accurate.

Other Training

Training is also an integral part of LM AERO's Back Injury Prevention Program and Ergonomics programs. Newly hired employees receive back injury training during new employee orientations. Employees who wear back support belts must attend a training class on belt use and back injury prevention.

Flight Critical Systems Research (FCSR)

Exhibit E IT Security Implementation Plan

**Submitted To:
NASA Langley Research Center
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NASA Langley Research Center
Hampton, VA 23681-2199**

June 29, 2006

**Prime Contractor:
LOCKHEED MARTIN CORPORATION
LOCKHEED MARTIN AERONAUTICS COMPANY**

IT SECURITY IMPLEMENTATION PLAN

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Lockheed Martin Aeronautics Company IT Security Implementation Plan

Lockheed Martin Aeronautics Company's (LM AERO) IT Security Implementation Plan, provided in the form of relevant sections extracted from our Corporate Policies (CPS) and Procedures (IPM) documents, attempts to answer the question about "how we protect both Information Technology and Sensitive Information or data". While lengthy, the documentation provided below provides a visible sample of the controls that are in place within Lockheed Martin to achieve that objective. These extracts are directly taken from these Policies and Procedures and are covered by applicable Copyright protection.

These extracts from the parent documents cover the following topics in order of presentation:

1. Protection of Sensitive Information
2. Computing and Information Resources
3. User Identification and Password Controls
4. Remote Access and Dial-Up Authentication
5. External Connections to Lockheed Martin Information and Computing Resources
6. Device Management, Account/UserID Administration Controls
7. Protection from Virus and Other Malicious Code/Logic
8. Administration of Vulnerability Alert Directives

CPS-710: Protection of Sensitive Information.

Revision: 4

Effective: May 1, 2006

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Current policies and procedures are on the Lockheed Martin Intranet

1.0 Policy

1.1 Lockheed Martin Corporation, in the course of its business activities, generates and acquires title to, or otherwise takes custody of, large amounts of Sensitive Information that are valuable assets either of Lockheed Martin, its collaborators, suppliers, partners, and/or customers. It is Lockheed Martin policy to properly identify, effectively manage, and diligently protect all such Sensitive Information.

1.2 In fulfilling this policy, Lockheed Martin will comply with the Sensitive Information protection requirements of the United States and foreign governments, except to the extent inconsistent with U.S. law. If there is a real or apparent inconsistency between the requirements of U.S. and foreign law, the matter will be resolved by the corporate Vice President & Associate General Counsel-International.

2.0 Applicability

This policy applies to all elements of Lockheed Martin Corporation, as defined in CPS-010, Policies and Procedures. The corporate Vice President & Associate General Counsel-Intellectual Property & Technology Law will ensure that entities controlled but not wholly owned by the Corporation (normally an ownership interest in excess of 50%) have adopted appropriate controls and are taking the steps necessary to meet the intent of this policy.

3.0 Scope

3.1 This policy covers:

- Export Controlled Information
- Lockheed Martin Proprietary Information, and
- Third Party Proprietary Information.

3.2 This policy does not cover:

- Attorney-Client and/or Attorney Work Product Privileged Information, which will be protected as directed by cognizant Lockheed Martin Legal Counsel
- Protected Information (information that is required to be protected under a court order; referred to as a "Protective Order"), which will be protected as directed by cognizant Lockheed Martin Legal Counsel, or

- Classified Information (except for Classified Information that is also Sensitive), which will be protected in accordance with the applicable rules, regulations, and security classification guidance promulgated by the U.S. government, including the National Industrial Security Program Operating Manual (NISPOM) or, when applicable, by a foreign government. Information that is Classified and Sensitive will be protected in accordance with the NISPOM and this policy. In the event of a conflict between the two, the NISPOM will govern.

4.0 Definitions

4.1 Information - Data in written, pictorial, electronic, audio, oral, or other form.

4.2 Proprietary Information - Information that the owner desires to protect from unauthorized disclosure to Third Parties that can provide the owner with a business, technological, or economic advantage over its competitors, or which, if known or used by Third Parties or if used by the owner's employees or agents in an unauthorized manner, might be detrimental to the owner's interests. For example, if Lockheed Martin might lose existing or future business if certain information is disclosed to competitors, the information probably is Lockheed Martin Proprietary Information. Proprietary Information may include, but is not limited to:

- existing and contemplated business, marketing and financial business information such as business plans and methods, marketing information, cost estimates, forecasts, financial data, cost or pricing data, bid and proposal information, customer identification, sources of supply, contemplated product lines, proposed business alliances, and information about customers and competitors
- existing and contemplated technical information and documentation pertaining to technology, know how, equipment, machines, devices and systems, computer hardware and software, compositions, formulas, products, processes, methods, designs, specifications, mask works, testing or evaluation procedures, manufacturing processes, production techniques, research and development activities, inventions, discoveries, and improvements, and
- human resources and personnel information.

4.3 Proprietary Information Agreement (PIA) (also referred to as a Non-Disclosure Agreement or NDA) - A written agreement between Lockheed Martin and a Third Party that establishes the requirements for protecting Proprietary Information. The agreement may be in the form of a PIA, NDA, equivalent provisions within the body of a contract, or similar arrangement.

4.4 Sensitive Information - For the purposes of this policy, information in any or all of these categories: Export Controlled Information, Lockheed Martin Proprietary Information, and Third Party Proprietary Information.

4.5 Third Party - An individual or entity other than Lockheed Martin, such as a supplier, contractor, partner, customer, or competitor.

8.0 Transmitting Sensitive Information

Definitions

8.1 Encryption - The transformation of information to produce a seemingly random information stream in order to prevent reduction of the information into clear text.

8.2 Extranet - A protected and controlled environment outside a company's Intranet that provides a secure environment for communication between the company and external entity(ies).

8.3 File Transfer Protocol (FTP) - The high level common procedure or protocol for transferring from one machine to another, commonly used for downloading and uploading files.

8.4 Firewall - A collection of hardware, software, and administrative processes used to ensure a secure network. A Firewall uses technical control mechanisms to filter and block traffic, acting as a barrier to unauthorized network traffic and containing designated traffic within a specific network environment.

8.5 Internet - An interconnected system of networks that connects computers around the world.

8.6 Intranet - The collection of all company networks (excluding Extranets and reverse proxies) that are interconnected via a backbone network and protected by company-owned, managed, and controlled Firewalls.

8.7 Lockheed Martin Intranet (LMI) - The collection of all Lockheed Martin networks (excluding Extranets and reverse proxies) that are interconnected via the corporate backbone network and protected by Lockheed Martin-owned, managed, and controlled Firewalls. The LMI also provides secure Internet access for the Corporation.

8.8 Public Folder - A folder created for the purpose of sharing information with others. The owner of a Public Folder can set privileges so that only a select group of users have access to the folder, or make the folder available to everyone on the network who uses the same mail client.

8.9 Remote Access - A mechanism that connects an electronic device that is not at a Lockheed Martin site to the LMI.

8.10 Shared/Mapped Drive or File System - A repository of information (such as a Public Folder, web site, file, or directory) that can be accessed by more than one user.

8.11 Transmittal - A means of interacting or interoperating with information from point to point, including but not limited to:

- sending an e-mail message or a fax
- making a phone call

- communicating through any form of electronic messaging, such as chat rooms, bulletin boards, blogs, or wikis
- posting information on a web site
- placing information on a Shared/Mapped Drive or File System
- extracting and submitting information remotely (such as by dial-up or high speed connection)
- participating in a teleconference or videoconference
- mailing information
- making a presentation, or
- making an electronic transmission through an exchange such as Exostar.

8.12 Two Factor User Authentication - A means of confirming the identity of a user attempting to access a host by validating two of three factors associated with the user. The factors include:

- something the user has, such as a security token or smart card
- something the user knows, such as a Personal Identification Number, and
- something the user is, such as a fingerprint or retina scan image.

8.13 Virtual Private Network (VPN) - Technology that can provide a combination of tunneling, Encryption, authentication, and access control technologies and services to supply secure traffic activity over a network.

8.14 Web Page - Information within a single World Wide Web address.

8.15 Wireless Communication - Transmitting or receiving data by a means other than a physical connection (such as a wire or optical fiber). Examples of Wireless Communications are cellular, radio, infrared, microwave, and satellite transmissions. Examples of Wireless Communication devices are personal digital assistants (PDAs) and BlackBerry devices.

GENERAL TRANSMITTAL INSTRUCTIONS

Verifications that must be made before Sensitive Information is Transmitted

8.16 Lockheed Martin policies and procedures and the laws of the U.S. and foreign governments impose specific requirements upon the disclosure of Sensitive Information. Failure to comply with these requirements is a violation of policies and procedures and may lead to a violation of law. Accordingly, before transmitting Sensitive Information, the sender must verify that:

- any required legends, labels, or other markings have been applied. If the information falls into more than one Sensitive Information category, all applicable legends, labels, or other markings must be applied
- the intended recipient is authorized to receive the Sensitive Information, and
- the selected Transmittal method is secure and complies with this policy and the laws of the recipient country.

8.17 If these verifications cannot be made, or if a method of Transmittal is not covered in this policy or local procedures, the sender should consult the cognizant Export Compliance Coordinator, Lockheed Martin Legal Counsel, and/or the cognizant SIP Strategy Representative for instructions.

Encryption

8.18 Encryption is required for some Transmittals, as discussed in this section. Encryption products must be selected from the list of products approved by the Corporate Information Security Office (CISO) and listed on the Security Products web site. Encryption must be used when required unless:

- approved Encryption products/devices are not available. The sender must transmit the Sensitive Information by another appropriate means
- the foreign country does not permit Encryption. See the Encryption Regulations web site for current information
- appropriate officials of the U.S. government approve otherwise in connection with a government contract or proposal
- a deviation is authorized by cognizant Lockheed Martin Legal Counsel after consultation with CISO, and (where Export Controlled Information is involved) the cognizant Export Compliance Coordinator, or
- a waiver is authorized by CISO in accordance with IPM-005, Waiver Requests.

Access Lists

8.19 When unique user IDs and passwords are required, elements will develop lists of persons authorized to access the Sensitive Information. Elements will review those access lists periodically and update them if needed.

E-mail Message

8.22 Encrypt the message if it contains Sensitive Information and will be transmitted outside the LMI.

Extranet

8.23 Follow the CISO-approved conventions associated with the Extranet. See IPM-012, External Connections to Lockheed Martin Information and Computing Resources, for instructions.

File Transfer

8.25 Encrypt the transfer if one or both points of transfer is outside the LMI.

Internet Web Pages

8.26 Sensitive Information on Internet Web Pages that are accessible by the public must be protected in accordance with IPM-007.

Intranet Web Pages

8.27 Protect the Sensitive Information with the appropriate access controls (unique user ID and password at a minimum). Merely placing Sensitive Information on the Intranet Web Pages does not provide the required level of protection.

Remote Access

8.30 Access must be through a CISO-approved network security system that provides for Two Factor User Authentication and an encrypted link.

8.31 If the Transmittal is not fully encrypted, the user must not access any Sensitive Information. See IPM-006, Remote Access and Dial-up Authentication, for additional instructions.

Shared/Mapped Drive or File System

8.32 Protect the Sensitive Information by unique user ID and password at a minimum, or share the information with authorized Internet Protocol (IP) addresses only. Merely placing the information on the drive or file system does not provide the required level of protection. Senders also should apply file or directory permissions to control access to files containing Sensitive Information.

Telephone/Teleconference/Videoconference

8.33 Encryption is recommended. If Encryption is not available, the sender must exercise good judgment when discussing Sensitive Information, because non-terrestrial transmissions (such as by satellite or microwave) are susceptible to interception by unauthorized individuals.

Wireless Communication

8.36 Encrypt the communication.

CPS-037: Computing and Information Resources

Revision No: 4

Effective: March 5, 2002

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1.0 Policy

Lockheed Martin considers its computing and information resources (including computers, e-mail system, Internet and intranet access and software) to be corporate assets having strategic value. As such, these resources require innovative management and appropriate controls. Accordingly, the Corporation will provide information systems and services that facilitate the flow of high quality business information among organizational elements, while containing development and operating costs and protecting the Corporation's information assets.

2.0 Information Systems and Services

2.1 The Chief Information Officer will establish and maintain an architecture that provides for the secure and efficient transmittal, reception, storage, and disposition of the Corporation's business information. The Chief Information Officer will work with corporate, business area, and business unit management to develop an annual Information Technology Strategic Plan (ITSP) that defines the strategic objectives underpinning the architecture, and an Information Technology Architecture Framework (ITAF) that governs the arrangement, interaction, and interdependence of the elements of Lockheed Martin's information systems. The Chief Information Officer will publish the Corporate Information Protection Manual and Corporate Information Resources Manual to implement the approved architecture.

2.2 The Chief Information Officer will establish the following corporate councils to participate in developing, communicating, recommending changes to, and as appropriate overseeing the implementation of, the ITSP, ITAF, policies, and procedures. The Chief Information Officer will chair, or designate an individual to chair, each council. Membership will include management-level representation from the office of the Chief Information Officer, Enterprise Information Systems, corporate staff, business areas, and business units:

Corporate Councils Primary Responsibilities

Enterprise Architecture Board:

Determine and recommend enterprise information technology strategies for the approval of the CIO. Provide technical leadership in identifying, evaluating, recommending technology strategies, architectures, standards and products through the Information Architecture Board (IAB).

Lockheed Martin Information Protection Council

Establish and oversee the implementation of uniform measures for protecting Lockheed Martin's computing and information resources.

Management of Electronic Information Council

Review information technology matters affecting the corporate interest and recommend the formulation of policies, procedures, or other direction as appropriate.

2.3 The Chief Information Officer, through Enterprise Information Systems, will provide information systems and services within the context of the ITSP, ITAF, policies, and procedures, including, but not limited to:

- standard software and hardware products
- implementation of security measures including physical safeguards; access authentication, authorization, monitoring, logging and administration; data encryption; virus/malicious code prevention/detection; data back-up; and disaster recovery planning
- management of Sensitive Information in electronic form, as required by CPS-710, Protection of Sensitive Information
- management of electronic records in accordance with CPS-527, Records Management
- telephone, voice mail, video-conferencing, electronic mail, World Wide Web, and other information transmittal services
- applications development, hosting, and maintenance
- data center services
- procurement and contracting services
- technical consulting and business process re-engineering services
- training related to these systems and services.

2.4 Management will define systems and services requirements, and provide planning and other data necessary to enable the Chief Information Officer and Enterprise Information Systems to define and execute their responsibilities. Management will support the development and implementation of information systems that serve multiple Lockheed Martin elements, and will withdraw funding from and eliminate redundant systems.

IPM-004: User Identification and Password Controls

12 May 2006 | Revision 6

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Current policies and procedures are on the Lockheed Martin Intranet

PURPOSE

To define the requirements for constructing user identifications (User IDs) for employees, non-employees, shared, multiple, and group/custodial accounts, and to define the controls for information and computing resource password(s).

IMPLEMENTATION

This procedure is applicable to all business units of Lockheed Martin Corporation and implements the requirements of Corporate Policy Statement CPS-037, Computing, Telecommunications and Information Resources and CPS-710, Protection of Sensitive Information. Employees are responsible for compliance with CPS-037, CPS-710 and this procedure.

DEFINITIONS

Foreign Person - Any natural person who is not a lawful permanent resident of the United States as defined by 8 USC 1101(a)(20) or who is not a protected individual as defined by 8 USC 1324b(a)(3). It 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 United States, as well as international organizations, foreign governments and any agency or subdivision of foreign governments (e.g., diplomatic missions).

Non-Employee - An individual who is not a Lockheed Martin employee such as a customer, subcontractor, contractor or supplier.

UserID - A string of alphanumeric characters used to uniquely identify an individual or groups of individuals requiring access to Lockheed Martin computing and information resources.

US Citizen - All natural persons born or naturalized in the United States, and subject to the jurisdiction thereof, and all legal entities created under the law of the United States or any State thereof.

Permanent Resident - A person who is lawfully accorded the privilege of permanently residing in the United States as an immigrant in accordance with the immigration laws, such status not having changed.

Privileged Passwords/Accounts - Passwords/accounts that permit access to specific accounts/applications, system files, or allow system level changes to data/information files not normally granted to general users.

Unprivileged Passwords/Accounts - Passwords/accounts that permit global access to unrestricted applications for the general user or global access to specific accounts/applications shared by system administrators.

IPM-006: Remote Access and Dial-Up Authentication

3 July 2002 | Revision 4

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Current policies and procedures are on the Lockheed Martin Intranet

PURPOSE

To define the controls for connecting to the Lockheed Martin Intranet (LMI) from an off-site location via such mechanisms as a modem over a public switched telephone network or broadband technology such as cable modem, Digital Subscriber Line (DSL), Integrated Services Digital Network (ISDN) or DirectPC Satellite.

IMPLEMENTATION

This procedure is applicable to all business units of Lockheed Martin Corporation and implements the requirements of Corporate Policy Statement CPS-037, Computing, Telecommunications and Information Resources, and CPS-710, Protection of Sensitive Information. Employees are responsible for compliance with CPS-037, CPS-710 and this procedure.

DEFINITIONS

Authentication - A process whereby a computing system confirms the identity of a user by means of access validation and password verification scheme.

Authentication Server - A secure server that is trusted to provide access authorization to a protected system.

Broadband or Always On Technology - Any type of transmission technique that carries several data channels over a common wire. Broadband refers to telecommunication in which a wide band of frequencies is available to transmit information.

Cable Modem - A device that enables high speed connectivity from a local cable television line to a computer.

Channel Encryption - The process of encrypting all transmissions on a communications channel. May relate to Internet Protocol (IP) Virtual Private network (VPN), voice, video or other analog/digital transmission means.

Digital Subscriber Line (DSL) - A form of broadband transmission for home users and small businesses providing high speed access to the Internet over standard copper lines.

Dial-Up - The use of telephone services to access a corporation's network.

Modem - A device for translating digital signals into analog signals and vice-versa.

Remote Access - Any mechanism that provides connectivity of an electronic device not at a Lockheed Martin site to the Lockheed Martin Intranet (LMI).

Token device - A hand-held hardware or software token, such as a SecurID card that generates a password providing one piece of two-factor authentication.

Two-Factor Authentication - An authentication method that requires two of three accepted factors in order to confirm the identity of a user attempting to access a host. The factors are based on:

- a. Something you have, such as a hand-held SecurID card, that provides challenge/response or time synchronous token codes.
- b. Something you know, such as a Personal Identification Number (PIN).

- c. Something you are, such as a retina scan image or fingerprint.

Virtual Private Network (VPN) - Technology that can provide a combination of tunneling, encryption, authentication and access control technologies and services to supply secure traffic activity over a network such as a corporation's intranet.

GENERAL

1. Dial-up security for establishing a data communication link has long been subject to risk and compromise of the target host computing system. Early implementations attempted to provide some degree of security by incorporating a method called "Dial-back;" in essence programming the host computing system to call a pre-defined number, only after the authorized user entered a static password. As telephone systems matured, and the shortcomings of analog telephone lines became better known, dial-back as a security mechanism diminished greatly.

The following risks are associated with dial-back, and are well documented by the hacker/cracker community:

- a. Glare - An intruder repeatedly calls the outbound modem, in hopes of connecting to it just as it is going "off-hook" in hopes of making a data connection when it is dialing back an authorized user.
- b. Spoofing - An authorized user, re-routing a user's calls to the hacker's telephone line through some form of call-forwarding, a common feature of today's telephone systems.
- c. Static Password Identification - Using the same password again and again for authenticating a user, which subjects the authentication to "replay" attacks by replaying the password against the system to gain access.

2. The Corporate Information Security Office (CISO) does not support the use of dial-back as a means of establishing a remote access connection.

3. Dual connectivity, such as establishing an outbound modem call while simultaneously connected to the LMI from a remote location, is prohibited.

4. Appropriate protection mechanisms shall be used to authenticate the user's identity. Remote access requires a dynamic, higher level of authentication of the user and the Corporate Information Security Office-approved encryption standards to be used based on sensitivity of information, classes of data/information, and the degree of risk to the LMI.

5. Account/User-ID sponsoring or applicable management is responsible for ensuring immediate retrieval of the token card and termination of the remote access associated with the token card upon change in job function or termination of the individual who is assigned the token card. The token cards are to be returned to the authorizing entity.

6. The loss of a token device is to be immediately reported to Information Security Operations. Where applicable, notification should be made directly to the Enterprise Service Desk (ESD).

7. Only token cards (hard tokens) are approved as the token authentication tool. The use of soft token software requires approval of the Corporate Information Security Office prior to implementation.

8. Remote access to the LMI, including those connections initiated by Lockheed Martin networked computing and information resources, shall be controlled by means of network security systems that have been approved by the Corporate Information Security Office.

Enterprise Information Systems (EIS) has sole responsibility for the establishment and maintenance of all standard authentication servers and shall determine and/or approve any implementation of additional authentication servers as required to support remote access dial-in authentication, as well as authentication to other devices.

9. Use of EIS standard anti-virus protection software with no TCP/IP stacks (such as those that come with major operating systems like Apple or Microsoft) is required when accessing the LMI via remote connectivity.

10. VPN access shall interface with the LMI only through Corporate Information Security Office approved internet gateways maintained by EIS.

11. Approved network security systems shall include at least the following control mechanisms:

- a. Two factor user authentication
- b. Authorization and administration
- c. Audit tools that create detailed records/logs for traceability of accidental or intentional access attempts, such as CallerID records which may be used to create such record logs.
- d. VPN when remotely accessing the LMI over untrusted or public switched telephone networks.

NOTE: Server-level VPN does not require two-factor authentication. Employees using client/server level VPN are required to use two-factor authentication. Refer to IPM-012, Lockheed Martin Intranet Connections to External Networks, for complete requirements.

12. Remote access communications devices other than those approved and identified in Table 1 below may be used only if the devices provide the same functionality/capability. Nonstandard remote access communication devices require the approval of the Corporate Information Security Office.

13. Controls or use of modems when remotely accessing the LMI and when utilizing the LMI to access a remote source are established in IPM-010, Modem Usage.

14. Token devices are not required where full session encryption (channel encryption) is the remote access mechanism and corporate encryption standards are met as established in IPM-007 Transmission of Sensitive Information. Token devices are required when using VPN.

15. VPN software, as identified in IPM-007 Transmission of Sensitive Information, provides secure remote access to the LMI across the commercial Internet or other external networks via

line encryption. Additionally, VPN can provide restricted access to LMI resources via user profiles, as required.

16. Transmitting sensitive information from a remote or external source to the LMI when using a public switched telephone network, broadband technology or any untrusted networks requires the use of VPN client software in conjunction with the Corporate Information Security Office-approved remote access communications devices and token device to ensure authentication and minimization of risk to sensitive information. Where an encrypted line or encrypted software is used for all inbound and outbound transmissions, desktop VPN may not be required.

19. Connecting remotely to the LMI utilizing broadband technologies increases the risks to the computing and information resources or assets residing on the LMI and the local computing systems. It is the responsibility of the employee using remote access to inform EIS Information Security Operations of the type of connectivity being used. EIS Information Security Operations shall establish a notification process to be used by employees. The process and business unit compliance shall be in place by December 31, 2002.

20. Broadband technology requires additional protection mechanisms such as, but not limited to:

- a. No multiple active or concurrent external connections shall be established while connected to the LMI.
- b. Print and file sharing abilities must be restricted from external source accessibility.
- c. Use of a CISO approved firewall.
- d. Use of the CISO approved anti-virus software.

NOTE: Split tunneling, as defined in IPM-012, Lockheed Martin Intranet Connections to External Networks, is strictly prohibited.

TABLE 1 - REMOTE ACCESS AUTHENTICATION STANDARD

The standard for Remote Access authentication for Lockheed Martin Corporation is a combination of the Shiva family of communication products and the RSA Security, Inc. ACE Server used in conjunction with the RSA Security, Inc. SecurID user authentication card, and the standard VPN software is Nortel Extranet for encrypted tunnels/network encryption.

PRODUCT	SERVICE/CONFIGURATION
Shiva LanRover Communication Server & Access Switch	Configuration must be linked to the RSA Security, Inc. ACE Authentication Server on a per user basis
CISCO AS5xxx Series ComServers/Access Switches	Configuration must be linked to the RSA Security, Inc. ACE Authentication Server on a per user basis
RSA Security, Inc. ACE Authentication Server	Repository for the user's authorized for external access to Lockheed Martin networked computing resources
RSA Security, Inc. SecurID	Token card

IPM-012: External Connections to Lockheed Martin Information and Computing Resources

3 July 2002 | Revision 6

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Current policies and procedures are on the Lockheed Martin Intranet

PURPOSE

To define and establish the minimum requirements and controls for unclassified external connections to/from Lockheed Martin Information and Computing Resources.

IMPLEMENTATION

This procedure is applicable to all business units of Lockheed Martin Corporation and implements the requirements of Corporate Policy Statement CPS-037, Computing and Information Resources and CPS-710, Protection of Sensitive Information. Employees are responsible for compliance with CPS-037, CPS-710 and this procedure.

DEFINITIONS

Common Gateway Interface (CGI) script - A program that acts as an interface between HTML pages and other programs on a web server for the purpose of making a web site interact with data bases and other applications.

Computing Resources - Information technology, including operating systems, application software, databases, telecommunications software/hardware, and computing hardware/software, used to deliver information electronically.

External connection or external gateway - Communications connection points (entrance and exit) between a corporation's network or resources and any external environment.

External Information Server- An information and computing resource that resides outside of any approved firewall architecture/environment.

External Network - Any network or computing resource that is not completely owned, managed and controlled by Lockheed Martin Corporation.

Extranet - A protected and controlled environment that resides outside a corporation's Intranet for the purpose of providing a secure environment for communications between the corporation and an external entity.

Firewall - A collection of hardware, software, and administrative processes used to ensure a secure network. Using technical control mechanisms to filter and block traffic, it acts as a barrier to unauthorized network traffic and contains designated traffic within a specific network environment.

Foreign Person Network or International Network - A network or network connection that is located outside the United States and/or has foreign persons residing on that network. This includes foreign-owned or controlled networks within the United States that are wholly operated by U.S. persons.

Generic Routing Encapsulation (GRE) tunnel - A virtual point-to-point link between Cisco routers on an IP network created by encapsulating any protocol packet type inside an IP tunnel.

Internet Island - An isolated Local Area Network (LAN) used for unrestricted access to/from the public Internet.

Lockheed Martin Intranet (LMI) - The collection of all LM business unit networks (excluding extranets and reverse proxies) that are interconnected via the corporate backbone network and are protected by LM owned, managed and controlled firewalls. In addition to internal corporate connectivity, the LMI also provides secure access to the Internet for the corporation.

Reverse Proxy - A server that allows for securely connecting internal web servers to the Internet. A reverse proxy server is used to impersonate a web server to the outside world, receiving client requests for web content and forwarding them to the actual web server on behalf of an external user.

Router - Any device that performs a packet routing function for any network protocol, including dedicated devices and computers with multiple network interfaces.

Split Tunneling - Simultaneous access to both a local and remote network, with remote connectivity typically provided by a VPN tunnel.

Untrusted - Any network or computing resource that is not completely owned, managed and controlled by/within the Lockheed Martin Corporation firewall boundaries.

Virtual Private Network (VPN) - Technology that provides a combination of tunneling, encryption, authentication, and access control technologies to supply secure data transmissions

Virtual LAN or VLAN - A logical grouping of two or more nodes which are not necessarily on the same physical network segment but which share the same network number. This technology is used to create logically separate LANs on the same physical switch. Each port of the switch is assigned to a VLAN. VLANs may be extended beyond a single switch through the use of trunking between the switches. The trunk allows VLANs to exist on multiple switches.

GENERAL

External connections consist of any communications connection (inbound or outbound) between a Lockheed Martin computing and information resource and any non-Lockheed Martin or untrusted network or resource. To ensure confidentiality, integrity, and availability of Lockheed Martin assets, business units requiring an external connection shall use the External Connection Process to submit a request to the Corporate Information Security Office (CISO) for evaluation and approval. All external connections (including legacy connections) must have a documented CISO approval on record.

The specific requirements are presented in five sections:

Section I - Connections And Controls

Section II - Internet Connection Services

Section III - External Partner, Client Networks or Extranet Connections

Section IV - Criteria for Use of External Information Servers

Section V - Internet Islands

IPM-015: Administration of Vulnerability Alert Directives

12 May 2006 | Revision 5

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Current policies and procedures are on the Lockheed Martin Intranet

PURPOSE

To define the procedure for the administration of vulnerability alert directives.

IMPLEMENTATION

This procedure is applicable to all business units of Lockheed Martin Corporation and implements the requirements of Corporate Policy Statement CPS-037, Computing, Telecommunications and Information Resources. Employees and all other individuals with access to Lockheed Martin computing and information resources are responsible for compliance with CPS-037 and this procedure.

Business entities are responsible for developing plans for implementation of the requirements stated in this document. Those plans must include Lockheed Martin Intranet (LMI) internal and external managed, maintained, and administrated server environments. This includes all server environments connected to the LMI. Plans are to be kept locally and readily available for review upon request from the Corporate Information Security Office (CISO), the Business Entity Lockheed Martin Information Protection Council (LMIPC) Representative or designee and Lockheed Martin Corporate Internal Audit (LMCIA).

DEFINITIONS

Hot Fix or Bug Fixes/Patches - A rapidly developed, specific vendor-provided fix for a product which may be for a critical, general product function or information security purpose. Testing for hot fixes is usually less rigorous than for other mature sets of vendor maintenance that have been issued over a period of time and accumulated in broader coverage update groupings such as service packs, security roll up packages, cumulative maintenance, or patch sets.

Patch Cluster - A bundled set of version specific operating system fixes for one-step installation that often includes information security fixes.

Security Roll-up Packages - A collection of security specific bug fixes and/or enhancements accumulated since the last service pack or initial release of a product. It usually has undergone rigorous testing as a collective group.

Service Packs - A cumulative, large collection of: bug fixes; product enhancements; and security improvements that have undergone rigorous testing as a collective group for a given product. It is cumulative in that it contains all the previous service packs since the product's introduction. Service packs allow the administrator to stay current in aggregate maintenance as of the release of the current service pack.

System Administrator - Individual(s) with privileged access and responsibility to configure, maintain or manage device(s), or service on a device(s), including workstations, servers, and network devices such as hubs, switches, routers, and firewalls. This includes individual users running any special device service, operating system and/or application software not typically run by an end user, such as Internet Information Server (IIS), a web server, File Transfer Protocol (FTP) server and Telnet services on a desktop machine.

It is noted that for end-users who have no special services running and whose work stations are managed with an automated software distribution 'push' process, the system administrator managing the software distribution for the site the end user is serviced by, is responsible to apply alerts, updates, and corrective actions. System administrator functions often include the administration of and responsibility for information protection controls.

Vulnerability Alert Directive (VAD) – Communications / Notifications distributed by the Vulnerability Alert Review (VAR) team which are information security related change requirements to the enterprise infrastructure. These include, but are not limited to; Vulnerability Alert Notices received from external entities such as vendor provided patches for operating systems and applications.

Vulnerability Alert Notices (VAN) - Advisories concerning malicious or defective software. These Vulnerability Alert Notices are prepared for the computing community by organizations such as Computer Emergency Response Team (CERT), the Computer Incident Advisory Capability (CIAC), and other external organizations as required and appropriate.

Vulnerability / Vulnerabilities - A weakness in an information system or network, system design or implementation, including a lack of an information technology process, which could be exploited by a threat.

Vulnerability Risk Ratings - Ratings that define the level of risk and cycle time allotted for minimizing the risk. They are as follows:

- a. **Crisis** - active exploits, clear and present danger across the Corporation – time required to minimize the risk is 24 hrs from notification.
- b. **Imminent Threat** – known exploits, potential for high damage across the Corporation – time required to minimize the risk is 5 calendar days from notification.
- c. **High** - no/few known exploits; high potential for damage – time required to minimize the risk is 30 business days from notification.
- d. **Medium** - no known exploits; little potential for damage – time required to minimize the risk is not to exceed 6 months from notification. Objective of ensuring resolution to all medium risk Vulnerability Alert Directives.
- e. **Low** - no known exploits; little potential for damage – discretionary deployment.

GENERAL

1. The Enterprise Virus Management (EVM) Team, as designated by the Corporate Information Security Office (CISO), is the only approved source to identify and issue alerts related to viruses and malicious code/logic in accordance with IPM-022, Protection from Virus and Other Malicious Code/Logic.

2. CISO has designated a Vulnerability Alert Review (VAR) Team to identify and issue Vulnerability Alert Directives (VAD) related to information security roll-up packages, hot fixes/patches, patch clusters and service packs. The VAR team is the only approved source for the identification, analysis and distribution of Vulnerability Alert Directives for implementation

across Lockheed Martin business entities. Use of any other non-CISO and VAR team approved product and/or process is considered non-compliant and may be subject to remediation activity.

3. The VAR Team is responsible for:
 - a. monitoring Vulnerability Alert Notices (VAN) for applicability, relevancy, priority, assessing risk and distributing to the computing environment.
 - b. disseminating Vulnerability Alert Directives by:
 - i. posting on the VAR web site and/or by sending descriptive abstracts of vulnerability alert notices via electronic mail to an established distribution list.
 - ii. including vulnerability ratings, applicability, relevancy, recommended remediation and subject matter expert contact information where applicable.
 - iii. noting CISO direction to distribute the VAD.

4. Business Entities must:
 - a. establish and maintain a Standard Operating Instruction (SOI) / Standard Operating Procedure (SOP) for their business entity. Enterprise Information Systems (EIS) is responsible for developing and implementing a recommended SOI/SOP model.
 - b. use the VAR system and process.
 - c. register and maintain the list of all their servers within the VAR database. Where a business unit has a tool/process in place, that tool/process may continue to be used when the VAR standard interface is provided as part of the centralized system, with the provision that the BU provides a weekly data feed to VAR when the ability is available.
 - d. update the VAR database as patches are installed or alerts are dispersed. Updates, as patches are installed, need to follow the Vulnerability Ratings cycle time.
 - e. document exceptions (see below for list of exceptions) as part of their local Configuration Management or change control process and enter the data in the VAR system for the affected computing resources.
 - f. confirm internal customer maintenance windows are of sufficient duration and frequency to ensure compliance to the requirements established in IPM-015.

5. Recipients of Vulnerability Alert Directives (VAD) must determine applicability to their environment and ensure action is taken within the remediation time periods associated with the vulnerability risk ratings. Failure to implement corrective actions, perform VAR updates and apply patches during the remediation time period may result in CISO notifying senior management of the applicable business unit to take corrective action. The recommendation may include, but is not limited to, disciplinary action and/or removal of the system from the Lockheed Martin Intranet (LMI) until the situation has been rectified. Special business unit circumstances must be considered on a case by case basis and should be submitted to CISO for concurrence.

6. Business entity management or designee is required to ensure that system administrators and other individuals responsible for monitoring and/or maintaining Lockheed Martin networked computing and information resources sign up on the applicable distribution list located on the Lockheed Martin Security Alerts website in order to ensure receipt of security alert mailings.

IPM-016: Device Management, Account/UserID Administration Controls

12 May 2006 | Revision 5

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Current policies and procedures are on the Lockheed Martin Intranet

PURPOSE

To define the responsibilities for account administration controls for accessing networked computing resources.

IMPLEMENTATION

This procedure is applicable to all business units of Lockheed Martin Corporation and implements the requirements of Corporate Policy Statement CPS-037, Computing, Telecommunications and Information Resources and CPS-710, Protection of Sensitive Information. Employees are responsible for compliance with CPS-037, CPS-710 and this procedure.

DEFINITIONS

Device or network device - Any device that performs infrastructure network functions, such as switching, routing or access controlling. Network devices can include bridges, hubs, switches, routers, firewalls, gateways, or remote access devices.

Device management - Any organization with responsibility to manage and maintain devices or network devices.

Networked computing resources - Any computing system or technology connected to a corporation's Intranet.

GENERAL

1. Control of access to Lockheed Martin's computing and information resources is enabled by computer -based hardware and software information protection systems combined with control procedures for managers, device managers, information security administrators, system administrators, and users.
2. Information security administrators and/or system administrators with information security administration job functions must initiate their system access through a logon ID that provides an audit trail to their individual ID, when technically feasible.
3. All users shall receive documented management authorization prior to obtaining access to Lockheed Martin controlled computing and information resources. The documentation must be retrievable upon request for all active accounts. Where the original documentation is not available, the business unit shall establish alternative means of ensuring account/access validation and accuracy. Access justification will be based on business needs and will be established with the minimum privileges necessary to complete the task.
4. User access and account privileges for Lockheed Martin networked computing resources are based on citizenship, job function, need-to-know, employment status and management

approval. This includes access and account privileges for external auditing organizations, US citizens, permanent residents, and non-U.S. persons whether employee or non-employee and any additional documentation required by program, contract or the responsible business unit. Access is only to be granted for the time frame required to perform the job requirements and is restricted to only what is required to perform the job function. Accounts for non-employees shall have an expiration date not to exceed one year or the life of the contract, whichever is less. Refer to IPM-004, User Identification and Password Controls for further requirements.

5. It is recommended that a National Agency Check (NAC) be on file for each system administrator/ information security administrator. It is required where identified as part of a contract requirement.

6. Systems administrators and/or information security administrators with privileged account capabilities shall only perform those tasks authorized by their job function and based on need-to-know. When performing job related functions that require accessing an individual's information/data:

a. If in regards to an investigation, prior permission and valid authorization from cognizant management or the Corporate Information Security Office (CISO) is mandatory.

b. For normal maintenance purposes, prior permission and valid authorization shall be obtained from the owner of the information/data before proceeding. If the owner is not available, permission from the owner's manager is mandatory.

7. System administrators/information security administrators shall be responsible for establishing account administration controls including, but not limited to, the following:

a. In accordance with IPM-017, Security Risk Assessments, perform risk assessments on all devices for resource criticality to determine logging and monitoring requirements.

b. Utilization of a password forcing tool, where technically feasible, or implementation of manual password controls, that meet the requirements stated in IPM-004, User Identification and Password Controls.

c. Access/privilege requirements, which have been approved by the information/data owner (if applicable), the requester, and applicable management.

d. Implementation (using access control software and/or hardware), where technically feasible, of audit logs which track/list successful violation attempts and unsuccessful violation- attempts (accidental and/or intentional) of access controls/account privileges, file system modifications, changes in privileges, and objects accessed (such as files or programs) by date and time and be traceable to the requesting UserID. Audit logs shall be archived for a minimum of six months to support potential retrieval requests or requirements. Only authorized individuals shall have access to the audit logs. Review IPM-025, Assessment and Intrusion Detection Tools, Monitoring and Response for additional requirements. It is recommended that audit log reviews be performed on a daily basis.

- e. Periodic account reviews must be conducted on all accounts at least every 90 days to ensure inactive accounts are identified. These accounts will be revoked/disabled within 10 working days of identification.
- f. In those situations where an account is accessed no more than once per year the review cycle for inactivity is every two (2) years.
- g. Where feasible, in order to provide identification and notification, it is recommended a list of those accounts that have not recorded any activity for a continuous six month period be provided to the appropriate manager and/or owner of the account(s). Notification is not required in order to proceed with removal of the account. Additionally, if no request has been submitted, by applicable management or the owner of the account(s), to re-activate the account prior to the end of the 6 months of revoke/disable status than the account shall be removed.
- h. Revocation of account/access privileges within 10 working days of acknowledged receipt of the applicable information covering, but not limited to, such situations as:
 - 1. Terminations from the company.
 - 2. Violations of Corporate Information Protection Manual procedures as determined through an investigation and as requested by applicable management or responsible investigative authority.
 - 3. Prolonged absences for individuals who do not have management approval to work from off site locations.
 - 4. Task or job function for which the access was granted.
- i. If an individual violates the requirements stated in the Corporate Information Protection Manual (CIPM), as determined through an investigation, the system administrator/information protection administrator shall, upon notification from the applicable authorized organization and/or business unit authorized investigator as defined in IPM-025, Assessment and Intrusion Detection Tools, Monitoring and Response , immediately disable the account but not delete or archive the information until instructed to do so by the applicable investigative authority or management.
- j. Coordination on inter/intra-company transfers is required with the releasing/receiving business unit or organization to transfer or remove (as appropriate for risk mitigation) account/access privileges based on job function. Documentation of approval to transfer or remove (as appropriate for risk mitigation) account/privileges, including associated information/data must be retained by requesting party.
- k. Document additional requirements for non-employees requesting access to Lockheed Martin networked computing resources including establishment of the expiration date in the account profile not to exceed one year or the life of the contract, whichever is less. Coordinate with cognizant management or user's sponsor for renewal of the account. Where required, document any additional requirements related to foreign persons.
- l. Document additional requirements for employees when applicable or requested by approving entity.
- m. Immediate revocation or disablement of account/access privileges in emergency situations as requested by management or business unit authorized investigator.
- n. Ensure, where technically feasible, session time-outs (auto-log off) occur after a period of logon/session inactivity. This inactivity period shall not exceed 30 minutes.

o. Ensure, where technically feasible, information protection administrators and/or system administrators with information protection administration job functions initiate their system access through a logon ID that provides an audit trail to their individual ID.

8. System administrators/information security administrators shall ensure that token card accounts such as those used with remote access are revoked within one (1) business day from notification.

9. Abuse or misuse of account privileges is subject to disciplinary action and loss of access/account privileges.

10. System administrator/information security administrator management is responsible for insuring administrators are aware of their responsibilities and the requirements stated in the CIPM.

11. It is the ultimate responsibility of the system administrator/information security administrator to implement the required controls to protect the integrity of the information residing on the network or computing device under that individual's purview.

IPM-022: Protection from Virus and Other Malicious Code/Logic

12 May 2006 | Revision 5

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Current policies and procedures are on the Lockheed Martin Intranet

PURPOSE

To define the requirements for protection against viruses and other types of malicious code/logic.

IMPLEMENTATION

This procedure is applicable to all Business Units of Lockheed Martin Corporation and implements the requirements of Corporate Policy Statement CPS-037, Computing, Telecommunications and Information Resources. Employees are responsible for their personal compliance with CPS-037, and this procedure, and for compliance by all non-employee personnel assigned to them who have approved access to the Lockheed Martin Intranet.

DEFINITIONS

Malicious Code/Logic - Also known as malware. Software or firmware that is introduced into a computing system with the intention to perform harmful activity. Its purpose is to cause harm or gain unauthorized access through exploitation of flaws in operating systems, associated software, and/or unsecured configurations. Examples of malicious code/logic are Trojan Horses, Worms, Logic Bombs, Viruses, and other programmed threat methods. Malicious code, also known as malware, is any Internet

delivered auto-executable program designed to access unauthorized files on the user's hard drive.

Trojan Horse - A seemingly useful computer program that appears to have a useful or innocent function but contains concealed instructions which when activated perform an illicit or malicious action (as destroying data files). A Trojan Horse can also be defined as the concealed instructions of such a program.

Worm - A malicious stand-alone computer program that can proliferate to other computing systems or networks. These may appear harmless; however, at a minimum they utilize otherwise idle resources to perform operations in the background, or spread to other computing systems using up needed computing power and overloading a system.

Logic Bomb - The simplest form of malware that performs a harmful activity. A logic bomb, which can be downloaded along with a corrupted software, shareware or freeware program, may destroy information/data, violate system security, or erase the hard disk. It is not the same as a virus because a logic bomb does not propagate. It is set to execute at a certain command, input sequence or change in a file, whereas the action of a virus is ongoing. A virus may contain a logic bomb as part of its payload.

Payload - The result of triggering malicious code such as a virus. The result can be something simple, such as a message or graphic appearing on the screen. However, it could also be something more complicated and damaging such as contamination or deletion of data. The payload of most viruses is replication.

Virus - A program that reproduces itself via parasitic attachment to another program, from which it continues the process of replication and spreads. The effects of a virus range from

displaying seemingly harmless error messages to crashing computers and destroying information and/or configuration/system files.

Malware - Malicious Software.

GENERAL

1. Viruses and other malicious code/logic (specified as viruses throughout the rest of this document) may cause damage to information/data and affect productivity. Viruses may be received through multiple sources, including but not limited to:

- a. E-mail attachments
- b. On-line services (e.g. web pages)
- c. Offerings of freeware or shareware
- d. Internet or Intranet transmissions
- e. Wireless transmissions
- f. Network shares
- g. Removable media/diskettes

2. Business Units are responsible for installing (where technically feasible) and maintaining software protection on every (company managed, maintained, and/or leased) desktop, laptop, server, external gateway, and other device that processes data/information and may pass viruses.

3. Corporate Information Security Office (CISO) or designee shall approve all alert notices prior to distribution in accordance with IPM-015, Administration of Alert Security Notices. Information regarding viruses, worms, malicious code/logic, hoaxes and other threats to Lockheed Martin computing resources is available from either the CISO or Enterprise Virus Management (EVM) website.

4. CISO or designee will continue to evaluate virus prevention software products and will maintain an approved anti-virus software product list on the EVM website.

5. CISO is responsible for strategic directions and associated requirements for protection from viruses and has determined that the products shown below shall be the standard for the Lockheed Martin Corporation:

Table 1 - Anti-Virus Product Standard

PRODUCT	SERVICE PROVIDED
SOPHOS	Anti-virus/malicious code/logic software for external SMTP email gateways.
Network Associates Incorporated (NAI)	McAfee Anti-virus software for computing devices

6. CISO or designee is responsible for determining the type of filtering (e.g. blocking specified file types, software applications) to be activated on Lockheed Martin gateways for preventing transmission of malicious code.

7. Enterprise Operations and/or gateway personnel shall immediately (within one half hour of notification) install filter(s) if requested by CISO or designee. Justification shall be provided by CISO as part of the crisis management procedure in IPM-025, Audit and Intrusion Detection Tools, Monitoring, and Response.
8. Business Areas are required to identify Site Anti-Virus Enterprise Support (SAVES) primary and secondary points of contact (POC) for each Business Unit. Locations with 50 or more employees shall have a resident SAVES POC. Business Area and Business Unit SAVES POCs shall register by following the instructions located on the EVM website.
9. Business Units shall be responsible for installation, configuration, and operation of approved antivirus software and shall ensure internal procedures are generated/followed for use and training, including a process for updating software versions, engine versions and virus DAT/signature files. Where technically feasible and cost effective, Business Units shall implement automatic updating of the software, engine, and virus definition files. If a manual distribution mechanism is used, updates must be installed within 24 hours of notification to the SAVES contact that new files have been posted on the EVM website. Information on the configuration of anti-virus software is located on the EVM website.
10. Business Units shall ensure processes are implemented for maintaining backup copies of critical data/information, and/or access to clean originals for use in recovery due to damage caused by infection in accordance with IPM-013, Disaster Recovery Risk Assessments and IPM-009, Disaster Recovery Planning.
11. Employees are responsible for ensuring that virus scanning software is properly installed and correctly operating on all computing resources (including privately owned and company owned computers) that they use to access the Lockheed Martin Intranet (LMI). Additionally, employees are not to disable or interfere with the operation of anti-virus software on these computing resources without authorization from the SAVES POC or designee.
12. It is required that a complete scan be performed on the hard drive(s) at least once a week. Additionally, it is required that DAT/signature files on computing resources be updated at least every 7 days (the recommendation is to check for updates daily) and that the virus scan engine upgrades be scheduled at least once a month. Should it become necessary during a virus crisis, Business Units are to update files immediately upon notification by CISO or designee.
13. If employees have questions about virus software, they should contact their SAVES POC. If the SAVES POC is unknown, the employee should contact their Business Unit support group or an EVM Contact for information on their SAVES POC.