



National Aeronautics and  
Space Administration

Langley Research Center  
Hampton, Virginia 23681-0001

# SOLICITATION

1-120-1150.3058

**REQUIREMENT:** FLIGHT SIMULATION SUPPORT SERVICES

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

A preproposal conference will be held at Langley Research Center on July 6, 1994. See L.25 for details.

**SOLICITATION, OFFER AND AWARD**

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)

RATING **DO-A7**

PAGE OF **159**

PAGES

2. CONTRACT NO.

3. SOLICITATION NO.

**1-120-1150.3058**

4. TYPE OF SOLICITATION  
 SEALED BID (IFB)  
 NEGOTIATED (RFP)

5. DATE ISSUED  
**6/13/94**

6. REQUISITION/PURCHASE NO.

7. ISSUED BY

CODE

National Aeronautics and Space Administration  
 Langley Research Center  
 Hampton, VA 23681-0001

8. ADDRESS OFFER TO (If other than Item 7)

NASA, Langley Research Center  
 9A Langley Boulevard, Bldg. 1195A, Room 103  
 Hampton, VA 23681-0001

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

**SOLICITATION**

9. Sealed offers in original and 12 (twelve) copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in 9A Langley Blvd., Bldg. 1195A, Rm. 103 until 4:00 PM local time 7/28/94  
 (Hour) (Date)

CAUTION - LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-10. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:

A. NAME

B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS)

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**OFFER (Must be fully completed by offeror)**

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within \_\_\_\_\_ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52-232-8)	10 CALENDAR DAYS	20 CALENDAR DAYS	30 CALENDAR DAYS	CALENDAR DAYS
	%	%	%	%
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFEROR

CODE \_\_\_\_\_ FACILITY \_\_\_\_\_

16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)

15B. TELEPHONE NO. (Include area code)

15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE

17. SIGNATURE

18. OFFER DATE

**AWARD (To be completed by Government)**

19. ACCEPTED AS TO ITEMS NUMBERED

20. AMOUNT

21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:  
 10 U.S.C. 2304(c)( )  41 U.S.C. 253(c)( )

23. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified) ITEM

24. ADMINISTERED BY (If other than Item 7) CODE

25. PAYMENT WILL BE MADE BY CODE

Financial Management Division  
 Mail Stop 175, NASA, Langley Research Center  
 Hampton, VA

26. NAME OF CONTRACTING OFFICER (Type or print)

Criticality Designator C

27. UNITED STATES OF AMERICA

(Signature of Contracting Officer)

28. AWARD DATE

IMPORTANT - Award will be made on this Form, or on Standard Form 28, or by other authorized official written notice.

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## PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

## B.1 SCOPE OF WORK

The Contractor shall, except as otherwise specified herein, furnish all personnel, facilities, services, equipment, supplies, and materials necessary for the performance of flight simulation support services as described in Section C, Description/Specifications/Work Statement.

## B.2 LEVEL-OF-EFFORT

A. In the performance of work under this contract, the Level-of-Effort (LOE) that the Contractor is obligated to provide is up to (TBD) direct labor hours as defined in Paragraph B below. NOTE: The Level-of-Effort to be determined will include the Direct Labor Hours (DLH) for the Government Estimated Staffing (GES) and may include DLH for non-GES (see Page 108, (a) Labor).

B. "Direct labor hours" are those productive hours expended by Contractor personnel in performing work under this contract that are charged as direct labor under the Contractor's established accounting policy and procedures. The term does not include sick leave, vacation, holiday leave, military leave, or any type of administrative leave but does include overtime hours and direct labor hours provided under level-of-effort subcontracts.

C. Once the direct labor hours are reached or the contract term has ended, the Contractor's obligations under the contract are fulfilled, even though the specified work may not have been completed. The Contractor is not authorized to exceed the direct labor hours specified in Paragraph A above. Any estimated cost and fee(s) adjustments for additional direct labor hours shall be based solely upon those hours being added to the direct labor hours specified in this clause.

D. The fee, if any, is based upon the furnishing of the direct labor hours, including level-of-effort subcontract hours, specified in Paragraph A above. If the Contractor provides less than 90% of the specified hours prior to expiration of the contract term, and the Government has not invoked its rights under the Termination clause of this contract to adjust the contract for such reduced effort, the Contracting Officer may unilaterally make an equitable downward adjustment to the contract fee. The downward adjustment in fee will be based upon the difference between the direct labor hours specified in Paragraph A and the amount of direct labor hours provided by the Contractor. Prior to making such an adjustment, the Contracting Officer will request the Contractor provide a written discussion of any extenuating circumstances (e.g., productivity improvements or reductions in contract scope) which contributed to the underrun. Any information provided by the Contractor will be considered by the Contracting Officer in determining the amount of the downward adjustment in fee.

## B.3 ESTIMATED COST AND FIXED FEE (NASA 18-52.216-74) (DEC 1991)

The estimated cost of this contract is \$ \_\_\_\_\_ exclusive of the fixed fee of \$ \_\_\_\_\_. The total estimated cost and fixed fee is \$ \_\_\_\_\_.

**B.4 SPECIFIED OTHER DIRECT COSTS**

The estimated cost of this contract includes the following estimates for material, equipment, subcontracts, travel, and training required for performance of the Statement of Work.

<u>Initial Period</u>	<u>First Period</u>	<u>Second Period</u>	<u>Third Period</u>	<u>Fourth Period</u>	<u>Fifth Period</u>	<u>Sixth Period</u>	<u>Seventh Period</u>	<u>Eighth Period</u>	<u>Ninth Period</u>	<u>Tenth Period</u>
\$700,000	\$700,000	\$700,000	\$700,000	\$700,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000

These costs are the Government's best estimate of what the actual cost will be. There will be no adjustment in the fee(s) of the contract should the actual cost be different from these estimates.

**B.5 CONTRACT FUNDING (NASA 18-52.232-81) (JUN 1990)**

(a) For purposes of payment of cost, exclusive of fee, in accordance with the Limitation of Funds clause, the total amount allotted by the Government to this contract is \$ . This allotment is for Flight Simulation Support Services and covers the following estimated period of performance: \_\_\_\_\_.

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

**B.6 ADMINISTRATION OF CONTRACT FUNDING (LaRC 52.232-113) (JUL 1993)**

A. The Contractor agrees that all future incremental funding shall be accomplished by Administrative Change Modification and that the funding procedure shall in no way change the Contractor's notification obligations as set forth in the "Limitation of Funds" clause.

B. In addition to the requirements of the "Limitation of Funds" clause, the Contractor shall notify the Contracting Officer in writing if, at any time, the Contractor has reason to believe that the total cost to the Government for the complete performance of this contract will be greater or substantially less than the then total estimated cost of the contract. Such notification shall give a revised estimate of the total cost for the performance of this contract.

**SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT****C.1 STATEMENT OF WORK - FLIGHT SIMULATION SUPPORT SERVICES****INTRODUCTION**

This work provides for Flight Simulation Support Services (FSSS) in support of the Flight Simulation Facilities (FSF) at Langley Research Center (LaRC). This effort includes the following services:

- Real-time simulation analysis and programming to derive and convert mathematical models of aircraft, spacecraft, their subsystems, and their operational environment (weather, air traffic control, etc.) into valid

computer programs. Design and develop graphics programs for cockpit displays and out-the-window visual systems. Design and develop computer programs for real-time input/output systems.

- Engineering, operation and maintenance services for the design, operation, maintenance and modification of the physical simulators; and for maintenance and repair of specialized computing facilities, peripheral equipment including specialized graphics systems, and the high-speed real-time data network.

## A. SCOPE AND GENERAL REQUIREMENTS

### 1. SCOPE

The Contractor shall furnish the necessary management, personnel, materials, and equipment except as otherwise specified herein to support LaRC flight simulation activities. This effort includes:

- the development, programming, verification, validation, configuration management and documentation of real-time simulation programs representing a physical system to be simulated by computer systems, associated displays and external hardware,
- the design, maintenance, modification, calibration and operation of flight simulation equipment,
- the maintenance of specialized computer facilities and peripheral equipment in the FSF, and
- the maintenance of the Advanced Real-Time Simulation System (ARTSS).

### 2. GENERAL REQUIREMENTS

a. The Contractor shall maintain expertise to perform duties as assigned. To meet new or unique LaRC requirements, Contractor personnel shall attend special orientation sessions provided by either the Contractor or the Government.

b. The Contractor shall prepare and maintain complete and comprehensive records for software programs and hardware equipment. The types of records typically include software configuration management, software program failures, equipment usage, type of activity, manpower used, steps taken for corrective actions and comments. Typical comments would include such items as number of runs, pilot's name, performance comments, intermittent troubles, corrective maintenance performed, and any unusual occurrences.

c. In the event of probable or actual equipment failure the Contractor shall immediately report to the Government specifying possible causes and estimated time for repair.

d. The Contractor shall readily ascertain the location and operating condition of all Installation Provided Government Property and other real-time simulation equipment in the FSF as assigned.

e. The Contractor shall be responsible for keeping the facility and equipment clean and neat to ensure safe, efficient facility operations. Spillage of oil, grease or other debris shall be removed prior to work shift completion. The Contractor will be responsible for proper handling/packaging of hazardous waste. Disposal of hazardous and nonhazardous waste will not be the responsibility of the Contractor.

f. The Contractor shall respond within sixty (60) minutes to service and emergency calls during nonregular shift operations. Response time is the elapsed time from notification of a malfunction to the Contractor's point of contact to agreement on a satisfactory course of action.

g. The Contractor shall shut down and secure all equipment at shift completion or as appropriate.

## B. MAJOR WORK AREAS

### 1. REAL-TIME SIMULATION ANALYSIS AND PROGRAMMING

The services shall include the simulation program development for the LaRC FSF, real-time graphics for heads-up and heads-down displays, and special purpose computers. The FSF is an integrated system of hardware and software with major elements including mainframe computers. These computers are capable of concurrently processing jobs in batch, interactive and real-time modes. In addition to the usual peripheral devices, the FSF contains on-line data acquisition and reduction links, graphics computer systems, control consoles and interface equipment for flight simulators.

The Contractor shall develop aircraft and spacecraft simulation programs using computer systems and external hardware (cockpits, visual systems, motion systems, control systems, etc.). The simulation generally involves a man-in-the-loop and represents some aspect of a proposed aircraft or spacecraft problem, such as, controls, displays, handling qualities, flight management and flight operations. Services shall include development of mathematical models of aircraft and spacecraft and their subsystems; development and evaluation of numerical algorithms; determining appropriate computational methods; development of program specifications including external hardware interface requirements; development, verification, validation and configuration management of computer programs; support of the simulation study as it is conducted by research engineers; and development of comprehensive hardware interface and software documentation.

Knowledge of the UNIX Operating System, and FORTRAN and C Languages are required to perform most of the current programming tasks on the FSF computer systems used for real-time simulation. Knowledge of personal computers and their operating systems which are used as simulation subsystems are required. When approved by the Government, higher order languages are used when they lead to

effective reduction in programming time, improvement of documentation, or provide more efficient software maintenance and portability.

The Contractor shall be responsible for the development and modification of data bases for the Evans and Sutherland (E&S) ESIG 3000 computer generated image (CGI) out-the-window visual system using an E&S data base development system. The Contractor shall be responsible for the maintenance, modification and configuration control of the Terabit Computer Engineering Eagle 1000 Graphics Computer system (also known as the Calligraphic Raster Display System, CRDS) software, as well as development of applications software for cockpit displays. The Contractor shall be responsible for system management and applications software development, including cockpit displays, for various Silicon Graphics Inc. graphics computer systems including but not limited to Onyx/Reality Engine 2 Systems and Indigo 2 Extreme Graphics Systems.

The Contractor shall be responsible for the application and system programming, configuration management and operation of the computer systems and the computer graphics systems of the Mission Oriented Terminal Area Simulation (air traffic control) Facility. Any new or additional special purpose computer systems shall be supported.

## 2. SIMULATOR ENGINEERING, OPERATIONS AND MAINTENANCE

The Contractor shall perform design, maintenance, modification, calibration and operation of flight simulation facilities and equipment. The flight simulation facilities and equipment to be serviced are research simulators rather than fixed function training simulators, and as such, are frequently reconfigured as new research applications evolve. Specific items of equipment can be expected to change as new technology becomes available. The Contractor shall respond to such changes and assume operational and maintenance responsibility for new equipment as it is implemented. The Contractor shall purchase simulation hardware and software required to maintain and upgrade the existing LaRC simulation facility. This includes test equipment, all hardware and software required to upgrade the simulators, and hardware required to replace failed equipment and maintain adequate spare parts inventories. Types of facilities and equipment to be serviced by the Contractor shall include but are not limited to:

a. Fixed base and motion base cockpits including hydraulically driven force servos to provide variable control-force-feedback to pilots and cockpit motion, hydraulic supply systems, cockpit instrumentation ranging from microammeter to synchro-driven flight instruments to electronic displays, flight director systems with integral computing circuits, actual flight hardware such as navigation systems and autothrottle systems, and specialized computing hardware including microprocessor interface to cockpit input/output devices such as control display units, voice input/output systems, and eye/head tracker systems.

b. Closed-loop video systems including black/white and color cameras, camera control units, cathode ray tube systems, high-intensity projection systems, video test signal generation equipment, video distribution amplifiers and coaxial transmission lines, fiber optic lines and equipment, and specialized video processing equipment used in display systems.

The Contractor shall respond to Government established schedules and priorities on a continuing basis for the following classifications of simulator equipment:

(1) Active Systems and Devices - Equipment systems and devices being used on a regular basis to support research studies in progress. The Contractor shall perform daily pre-operative setup and checkout sufficient to insure complete operability of equipment to within established performance limits and to be completed prior to scheduled operation time; pre-run checkout in coordination with Simulation Analysis and Programming personnel to verify readiness of the total simulator system immediately prior to research data runs; continuous monitoring and operational support during periods of operation; and immediate corrective maintenance as required to correct faults and restore equipment to operational status.

(2) Standby Systems and Devices - Operable systems and devices that can be readily returned to scheduled use. The Contractor shall perform corrective maintenance and periodic system setup and checkout to assure an acceptable state of readiness for operations.

(3) Inactive Systems and Devices - Systems and devices (subsystems or components) previously used and will probably be used in the future, but are not currently scheduled for use. The Contractor shall develop schedules to assure operability of inactive equipment for research use, advise the Government of apparent deficiencies, and perform corrective maintenance on a time-available basis.

(4) Systems and Devices Rework - Systems and devices undergoing redesign or modification for future use. The Contractor shall design and perform modifications to systems and devices to implement new applications or to upgrade performance; develop procedures, conduct tests for performance evaluation, and document results pertaining to new or modified systems; and develop and maintain operation procedure documents for new or modified systems. These modifications typically involve equipment support structure redesign, new instrument panel design, new instrument scaling network design, new meter face design for instruments, design and installation of mechanical and electrical modifications to servomechanisms and to closed-loop video systems, and cable harness design and fabrication for signal and power distribution within subsystems.

(5) New Systems or Devices - The Contractor shall design, develop and implement new simulator systems and devices that will upgrade existing simulator capabilities within the FSF.

The Contractor shall establish and perform a complete preventive maintenance equipment program (including providing spare parts) for the specialized computer facilities and peripheral equipment located in the FSF. The program shall be designed to insure operability within specified accuracy. The services shall include scheduled diagnostic testing during preoperational periods to insure subsequent minimum downtime and immediate corrective maintenance on equipment to insure minimal operational delay. All equipment maintenance shall be performed in accordance with original equipment specifications, and all replacement parts shall be equal to or better than the quality of the original



part. Parts and material inventory shall be maintained at a sufficient level to minimize downtime.

The Terabit Eagle 1000 Graphics Systems, the Mission Oriented Terminal Area Simulation Facility Systems, the Simulation Intercommunication System and other peripheral equipment such as time history recorders, position plotters and eye/head tracker devices shall be serviced and maintained on-site on a noninterference basis, and shall receive complete maintenance as cited above. The Contractor shall perform daily preoperational services, and emergency maintenance during operational use.

For the Advanced Real-Time Simulation System (ARTSS), the Contractor shall perform daily preoperational checkout, operational support during periods of operation, and immediate corrective maintenance as required to correct faults and restore the equipment to operational status. The Contractor shall provide and maintain a spare parts inventory for the ARTSS equipment. This equipment is located at various sites throughout Langley Research Center.

#### SECTION D - PACKAGING AND MARKING

##### D.1 REPORTS AND DOCUMENTATION PACKAGING AND MARKING

All reports and other documentation required to be delivered under this contract shall be packaged/packed for mailing/shipment in such a manner as to insure safe arrival at destination. Marking of reports and other documentation shall be as set forth in Exhibit A, Contract Documentation Requirements.

#### SECTION E - INSPECTION AND ACCEPTANCE

##### E.1 INSPECTION OF SERVICES - COST-REIMBURSEMENT (FAR 52.246-5) (APR 1984)

- (a) Definition. "Services," as used in this clause, includes services performed, workmanship, and material furnished or used in performing services.
- (b) The Contractor shall provide and maintain an inspection system acceptable to the Government covering the services under this contract. Complete records of all inspection work performed by the Contractor shall be maintained and made available to the Government during contract performance and for as long afterwards as the contract requires.
- (c) The Government has the right to inspect and test all services called for by the contract, to the extent practicable at all places and times during the term of the contract. The Government shall perform inspections and tests in a manner that will not unduly delay the work.
- (d) If any of the services performed do not conform with contract requirements, the Government may require the Contractor to perform the services again in conformity with contract requirements, for no additional fee. When the defects in services cannot be corrected by reperformance, the Government may (1) require the Contractor to take necessary action to ensure that future performance conforms to contract requirements and (2) reduce any fee payable under the contract to reflect the reduced value of the services performed.
- (e) If the Contractor fails to promptly perform the services again or take the action necessary to ensure future performance in conformity with contract

requirements, the Government may (1) by contract or otherwise, perform the services and reduce any fee payable by an amount that is equitable under the circumstances or (2) terminate the contract for default.

E.2 INSPECTION OF SUPPLIES - COST-REIMBURSEMENT (FAR 52.246-3)  
(APR 1984)

(a) Definitions. "Contractor's managerial personnel," as used in this clause, means any of the Contractor's directors, officers, managers, superintendents, or equivalent representatives who have supervision or direction of--

(1) All or substantially all of the Contractor's business;

(2) All or substantially all of the Contractor's operation at a plant or separate location at which the contract is being performed; or

(3) A separate and complete major industrial operation connected with performing this contract.

"Supplies," as used in this clause, includes but is not limited to raw materials, components, intermediate assemblies, end products, lots of supplies, and, when the contract does not include the Warranty of Data clause, data.

(b) The Contractor shall provide and maintain an inspection system acceptable to the Government covering the supplies, fabricating methods, and special tooling under this contract. Complete records of all inspection work performed by the Contractor shall be maintained and made available to the Government during contract performance and for as long afterwards as the contract requires.

(c) The Government has the right to inspect and test the contract supplies, to the extent practicable at all places and times, including the period of manufacture, and in any event before acceptance. The Government may also inspect the plant or plants of the Contractor or any subcontractor engaged in the contract performance. The Government shall perform inspections and tests in a manner that will not unduly delay the work.

(d) If the Government performs inspection or test on the premises of the Contractor or a subcontractor, the Contractor shall furnish and shall require subcontractors to furnish all reasonable facilities and assistance for the safe and convenient performance of these duties.

(e) Unless otherwise specified in the contract, the Government shall accept supplies as promptly as practicable after delivery, and supplies shall be deemed accepted 60 days after delivery, unless accepted earlier.

(f) At any time during contract performance, but no later than 6 months (or such other time as may be specified in the contract) after acceptance of the supplies to be delivered under the contract, the Government may require the Contractor to replace or correct any supplies that are nonconforming at time of delivery. Supplies are nonconforming when they are defective in material or workmanship or are otherwise not in conformity with contract requirements. Except as otherwise provided in paragraph (h) below, the cost of replacement or correction shall be included in allowable cost, determined as provided in the Allowable Cost and Payment clause, but no additional fee shall be paid. The Contractor shall not tender for acceptance supplies required to be replaced or corrected without disclosing the former requirement for replacement or correction, and, when required, shall disclose the corrective action taken.

(g) (1) If the Contractor fails to proceed with reasonable promptness to perform required replacement or correction, the Government may--

(i) By contract or otherwise, perform the replacement or correction and charge to the Contractor any increased cost or make an equitable reduction in any fixed fee paid or payable under the contract;

(ii) Require delivery of undelivered supplies at an equitable reduction in any fixed fee paid or payable under the contract; or

(iii) Terminate the contract for default.

(2) Failure to agree on the amount of increased cost to be charged to the Contractor or to the reduction in the fixed fee shall be a dispute.

(h) Notwithstanding paragraphs (f) and (g) above, the Government may at any time require the Contractor to correct or replace, without cost to the Government, nonconforming supplies, if the nonconformances are due to (1) fraud, lack of good faith, or willful misconduct on the part of the Contractor's managerial personnel or (2) the conduct of one or more of the Contractor's employees selected or retained by the Contractor after any of the Contractor's managerial personnel has reasonable grounds to believe that the employee is habitually careless or unqualified.

(i) This clause applies in the same manner to corrected or replacement supplies as to supplies originally delivered.

(j) The Contractor shall have no obligation or liability under this contract to replace supplies that were nonconforming at the time of delivery, except as provided in this clause or as may be otherwise provided in the contract.

(k) Except as otherwise specified in the contract, the Contractor's obligation to correct or replace Government-furnished property shall be governed by the clause pertaining to Government property.

### E.3 FINAL INSPECTION AND ACCEPTANCE (LARC 52.246-94) (OCT 1992)

Final inspection and acceptance of all items specified for delivery under this contract shall be accomplished by the Contracting Officer or his duly authorized representative at destination.

## SECTION F - DELIVERIES OR PERFORMANCE

### F.1 PERIOD OF PERFORMANCE (NASA 18-52.212-74) (DEC 1988)

The period of performance of this contract shall be 12 months from the effective date of the contract.

### F.2 PLACE(S) OF PERFORMANCE (LARC 52.212-98) (OCT 1992)

The place(s) of performance shall be:

NASA, Langley Research Center, Hampton, Virginia; and other sites as may be designated by work orders.

### F.3 STOP-WORK ORDER (FAR 52.212-13) (AUG 1989) ALTERNATE I (APR 1984)

(a) The Contracting Officer may, at any time, by written order to the Contractor, require the Contractor to stop all, or any part, of the work called for by this contract for a period of 90 days after the order is delivered to the Contractor, and for any further period to which the parties may agree. The order shall be

specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Within a period of 90 days after a stop-work order is delivered to the Contractor, or within any extension of that period to which the parties shall have agreed, the Contracting Officer shall

either -

(1) Cancel the stop-work order; or

(2) Terminate the work covered by the order as provided in the Termination clause of this contract.

(b) If a stop-work order issued under this clause is canceled or the period of the order or any extension thereof expires, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule, the estimated cost, the fee, or a combination thereof, and in any other terms of the contract that may be affected, and the contract shall be modified, in writing, accordingly, if -

(1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and

(2) The Contractor asserts its right to the adjustment within 30 days after the end of the period of work stoppage; provided, that, if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon the claim submitted at any time before final payment under this contract.

(c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.

(d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

#### SECTION G - CONTRACT ADMINISTRATION DATA

##### G.1 LIST OF INSTALLATION-PROVIDED PROPERTY AND SERVICES (NASA 18-52.245-77) (MAR 1989)

In accordance with the Installation Provided Government Property clause of this contract, the Contractor is authorized use of the types of property and services listed below, to the extent they are available, while on-site at the NASA installation.

(a) Office space, work area space, and utilities. The Contractor shall use Government telephones for official purposes only.

(b) General- and special-purpose equipment, including office furniture.

(1) Equipment to be made available to the Contractor for use in performance of this contract on-site and at such other locations as approved by the Contracting Officer is listed in Exhibit D. The Government retains accountability for this property under the Installation-Provided Government Property clause, regardless of its authorized location.

(2) If the Contractor acquires property as a direct cost under this contract, this property also shall become accountable to the Government upon its entry into the NASA Equipment Management System (NEMS) in accordance with the property-reporting requirements of this contract.

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

- (c) Publications and blank forms stocked by the installation.
- (d) Safety and fire protection for Contractor personnel and facilities.
- (e) Medical treatment of a first-aid nature for Contractor personnel injuries or illnesses sustained during on-site duty.
- (f) Cafeteria privileges for Contractor employees during normal operating hours.
- (g) Building maintenance for facilities occupied by Contractor personnel.
- (h) Moving and hauling for office moves, movement of large equipment, and delivery of supplies. Moving services shall be provided on-site, as approved by the Contracting Officer.
- (i) Access to LaRC's library facilities.
- (j) On-center mail deliver service.
- (k) Fabrication services.
- (l) The responsibilities of the Contractor as contemplated by paragraph (a) of the Installation-Provided Government Property clause are defined in the following property management directives and installation supplements to these Directives:
  - (1) NHB 4200.1, NASA Equipment Management Manual.
  - (2) NHB 4200.2, NASA Equipment Management System (NEMS) User's Guide for Property Custodians.
  - (3) NHB 4300.1, NASA Personal Property Disposal Manual.
  - (4) NHB 4100.1, NASA Materials Inventory Management Manual.

G.2 SUBMISSION OF VOUCHERS FOR PAYMENT (NASA 18-52.216-87) (DEC 1988)

(a) Public vouchers for payment of cost shall include a reference to this contract NAS1- and be forwarded to:

TBD

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

(b) The Contractor shall prepare vouchers as follows:

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

(2) Seven copies of SF 1034A, SF 1035A, or equivalent Contractor's attachment.

(3) The Contractor shall mark SF 1034A copies 1, 2, 3, 4, and such other copies as may be directed by the Contracting Officer by insertion in the memorandum block the names and addresses as follows:

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

(c) Public vouchers for payment of fee shall be prepared similarly and be forwarded to:

Contracting Officer, MS 126  
 NASA LaRC  
 Hampton, VA 23681-0001

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

(d) 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 PAYMENT OF FIXED FEE (NASA 18-52.216-75) (DEC 1988)

The fixed fee shall be paid in monthly installments based upon the percentage of completion of work as determined by the Contracting Officer.

G.4 DESIGNATION OF NEW TECHNOLOGY REPRESENTATIVE AND PATENT REPRESENTATIVE (NASA 18-52.227-72) (APR 1984)

(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:

<u>Title</u>	<u>Office Code</u>	<u>Address (including zip code)</u>
New Technology Representative	200	NASA, Langley Research Center Hampton, VA 23681-0001
Patent Representative	143	NASA, Langley Research Center Hampton, VA 23681-0001

(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 18-27.375-3 of the NASA FAR Supplement.

#### G.5 CONTRACT CLOSEOUT (LARC 52.242-90) (JUN 1988)

A. Reassignment--After receipt, inspection, and acceptance by the Government of all required articles and/or services, and resolution of any pending issues raised during the Period of Performance, this contract will be reassigned to the NASA Langley Research Center Contracting Officer for Contract Closeout. All transactions subsequent to the physical completion of the contract should, therefore, be addressed to the said Contracting Officer at NASA Langley Research Center, Mail Stop 126, who may be reached by telephone at (804) 864-2462.

B. "Quick Closeout"--Paragraph (f) of the Allowable Cost and Payment clause of this contract addresses the "Quick Closeout Procedure" delineated by Subpart 42.7 of the Federal Acquisition Regulation (FAR). It should be understood that the said procedure applies to the settlement of indirect costs for a specific contract in advance of the determination of final indirect cost rates when the amount of unsettled indirect cost to be allocated to the contract is relatively insignificant. Therefore, the "Quick Closeout" procedure does not preclude the provisions of paragraph (d) of the Allowable Cost and Payment clause nor does it constitute a waiver of final audit of the Contractor's Completion Voucher.

C. Completion Voucher Submittal--Notwithstanding the provisions of the Allowable Cost and Payment clause, as soon as practicable after settlement of the Contractor's indirect cost rates applicable to performance of the contract, the Contractor shall submit a Completion Voucher as required by the aforesaid clause. The Completion Voucher shall be supported by a cumulative claim and reconciliation statement and executed NASA Forms 778, Contractor's Release, and 780, Contractor's Assignment of Refunds, Rebates, Credits, and Other Amounts. Unless directed otherwise by the Contracting Officer for Contract Closeout, the Contractor shall forward the said Completion Voucher directly to the cognizant Government Agency to which audit functions under the contract have been delegated.

### SECTION H - SPECIAL CONTRACT REQUIREMENTS

#### H.1 OPTIONS

##### A. Priced Options/Extended Term

Pursuant to the Section I clause entitled "Option to Extend the Term of the Contract (MAR 1989)," the Contractor hereby grants to the Government options

to extend the term of the contract for one additional period of 12 months, and one additional period of 24 months. Such options are to be exercisable by issuance of a unilateral modification no later than 30 calendar days prior to the expiration of the contract. Upon exercise of such option(s) by the Government, the following items will be increased by the amount specified below for each option period.

<u>Item</u>	<u>First Option Period</u>	<u>Second Option Period</u>	<u>Third Option Period</u>	<u>Fourth Option Period</u>
Period of Performance (Ref. F.1)	12 months	12 months	12 months	12 months
Level of Effort (Ref. B.2)	TBD hours	TBD hours	TBD hours	TBD hours
Estimated Cost (Ref. B.3)	\$	\$	\$	\$
Estimated Fee (Ref. B.3)	\$	\$	\$	\$

#### B. Priced Option - Additional Level of Effort

1. The Contractor hereby grants to the Government options to increase the contract level of effort by the amounts specified below for each period. The Government's options may be exercised once or multiple times in minimum increments of 1,875 hours of effort. Such options are to be exercisable by issuance of a unilateral modification. The Government shall give the Contractor 30 days preliminary written notice(s) for the exercise of any increment(s) of this option. Preliminary notice shall not commit the Government to exercise the option.

	<u>Level of Effort (Ref. B.2)</u>
Initial Contract Period	18,750 hours
First Option Period	18,750 hours
Second Option Period	18,750 hours
Third Option Period	18,750 hours



Fourth  
Option  
Period

18,750 hours

2. When any increment of the above option is exercised, the contract cost and fee set forth in B.3 will be increased using the appropriate rates set forth below for the period in which the option is exercised:

	<u>Rate Per Hour</u>	
	<u>Cost</u>	<u>Fee</u>
Initial Contract Period	\$	\$
First Option Period	\$	\$
Second Option Period	\$	\$
Third Contract Period	\$	\$
Fourth Contract Period	\$	\$

### C. Priced Options for Extended Services

#### 1. Basic Requirement

Pursuant to FAR 37.111 and to the Section I clause entitled "Option to Extend the Term of the Contract (MAR 1989)," the Contractor hereby grants to the Government Options to extend the term of the contract for six additional one month periods. Such options are to be exercisable by issuance of a unilateral modification prior to the expiration of the contract. Upon exercise of such option(s) by the Government, the following items will be increased by the amount specified below for each option period.

<u>Item</u>	<u>Fifth Option Period</u>	<u>Sixth Option Period</u>	<u>Seventh Option Period</u>	<u>Eighth Option Period</u>	<u>Ninth Option Period</u>	<u>Tenth Option Period</u>
Period of Performance (Ref. F.1)	1 month	1 month	1 month	1 month	1 month	1 month
Level of Effort (Ref. B.2)	TBD hours	TBD hours	TBD hours	TBD hours	TBD hours	TBD hours
Estimated Cost (Ref. B.3)	\$	\$	\$	\$	\$	\$

## Fixed Fee

(Ref. B.3)	\$	\$	\$	\$	\$	\$
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## H.2 RIGHTS TO PROPOSAL DATA (TECHNICAL) (FAR 52.227-23) (JUN 1987)

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

## H.3 KEY PERSONNEL AND FACILITIES (NASA 18-52.235-71) (MAR 1989)

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

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

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

TBD

## H.4 PROCUREMENT AUTHORITY (201-39.5202-3) (OCT 90 FIRMR)

This acquisition is being conducted under a specific acquisition delegation of GSA's exclusive procurement authority for FIP resources. The specific GSA DPA case number is KMA-92-0354.

H.5 CONTRACTOR EMPLOYEE'S SECURITY CLEARANCE (LaRC 52.204-90)  
(OCT 1992)

By virtue of their particular work assignment, certain Contractor employees, may be required to have a security clearance granted in accordance with DOD 5220.22M, "Department of Defense Industrial Security Manual for the Safeguarding of Classified Information (ISM)". Clearances will be issued by the Department of Defense (DOD). Within 10 working days after an employee is identified by the Government and/or the Contractor as requiring a SECRET or higher clearance, the Contractor shall submit to the Contracting Officer evidence of the submittal of a request for clearance to DOD for such employee. If the clearance for an employee has not been issued by DOD within 120 calendar days of the submittal of the request for clearance to DOD, the Contractor may be required to remove the employee from the contract.

#### H.6 SECURITY PROGRAM/FOREIGN NATIONAL EMPLOYEE INVESTIGATIVE REQUIREMENTS (LaRC 52.204-91) (NOV 1991)

Prior to reporting to Langley Research Center (LaRC) to perform under a contract or grant, each Foreign National shall have approval for access to LaRC facilities from NASA Headquarters, International Relations Division (Code XID). A copy of the access authorization request shall be provided to the LaRC Chief of Security. Additionally, an investigation by the Government shall be completed on each Foreign National contractor prior to reporting to LaRC to perform under a contract or grant. A properly executed "Name Check Request" (NASA Form 531) and a completed "applicant" fingerprint card shall be submitted to the LaRC Security Office, Mail Stop 182, for each Foreign National contractor at least 75 days prior to the estimated entry on duty date. The NF 531 and fingerprint card may be obtained from the LaRC Security Office. If the access approval is obtained from NASA Headquarters prior to completion of the investigation, and the Contracting Officer requires a Foreign National to work on LaRC, an escort request may be considered by the LaRC Chief of Security.

#### H.7 OBSERVATION OF REGULATIONS AND IDENTIFICATION OF CONTRACTOR'S EMPLOYEES (LaRC 52.212-104) (MAR 1992)

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.

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 Contract 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 4:30 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 after employee termination or contract completion, badges shall be returned to the NASA Contract Badge and Pass Office.

#### H.8 INCORPORATION OF SECTION K OF THE PROPOSAL BY REFERENCE (LaRC 52.215-107) (MAR 1989)

Pursuant to FAR 15.406-1(b), the completed Section K of the proposal dated is hereby incorporated herein by reference.

#### H.9 VIRGINIA AND LOCAL SALES TAXES (LaRC 52.229-92) (APR 1992)

To perform this contract, the Contractor must be knowledgeable of relevant state and local taxes when making purchases of tangible personal property. The Contractor shall refrain from paying nonapplicable taxes or taxes where an exemption exists, but shall pay applicable taxes that are reimbursable pursuant to FAR 31.205-41, Taxes. Even though title to property purchased under this contract may pass to the Government and the price is reimbursable under contract cost principles, such transactions do not in themselves provide tax immunity to the

Contractor. Therefore, within 30 days after the effective date of this contract, the Contractor shall request from the Virginia State Tax Commission a ruling on any tax exemptions that may be applicable to purchases made under this contract. The Contractor shall provide all facts relevant to the situation and shall pursue an interpretation of the law that is most favorable to both the Contractor and the Government.

**H.10 WAGE DETERMINATIONS AND FRINGE BENEFITS--ALTERNATE I**  
(LaRC 52.237-90) (NOV 1990)

The following Registers of Wage Determinations and Fringe Benefits list the wage rate and fringe benefits for designated labor classifications which shall be the minimum paid under this contract. See Exhibit B for a copy of these Wage Determinations.

<u>Number</u>	<u>Revision</u>	<u>Effective Date</u>
87-0211	14	10/28/93
87-0215	15	10/28/93

These determinations constitute the "attachment" as referred to in paragraph (a), Compensation, of the Section I clause entitled "Service Contract Act of 1965, As Amended."

**H.11 AUTOMATED INFORMATION SECURITY (AIS) PROGRAM/EMPLOYEE NATIONAL AGENCY CHECK (NAC) AND USER AGREEMENT EXECUTION (LaRC 52.239-90)**  
(MAY 1991)

A. Work to be performed under this contract requires access to ADP equipment and processing areas. Therefore, the Contractor shall comply with the requirements of NASA's Automated Information Security Program. This program is separate and distinct from security programs for safeguarding classified information. Prior to performing any work in restricted-access computer rooms or accessing NASA ADPE (either remotely or on-site at LaRC), all Contractor employees must have a favorable NAC completed. The Contractor shall submit a properly executed NASA Form 531 (NF 531), Name Check Request, to the LaRC Security Officer, Mail Stop 182, for each Contractor employee who will work in restricted access computer rooms and/or access NASA ADPE. In addition, each such employee is required to be fingerprinted at the LaRC Badge and Pass Office, Building 1228, or by any authorized agency or department utilizing Fingerprint Card FD-258. Approximately 75 days are required to complete the NAC after receipt of the NF 531 and FD-258. The NAC is not required if an employee has a Secret or higher clearance. When it is necessary for an employee to perform any work in restricted access computer rooms prior to completion of the NAC, the employee may be escorted while at the site by an individual who has a favorable NAC or a higher level of investigation favorably adjudicated, or a Secret or higher clearance, or as otherwise approved by the Security Officer. Employees may access NASA ADP equipment prior to completion of the NAC only as approved by the LaRC Security Officer on a case-by-case basis.

B. The Contractor shall insure that all Contractor personnel execute a user agreement, Form No. ACD N-865, Responsibilities of Users of the NASA/LaRC Central

Scientific Computer Complex, and any other forms that may be required by the Government prior to having access to NASA ADP resources. Unauthorized access to and/or use of LaRC computing systems is a violation of law and punishable under the provisions of 18 USC 1029, 18 USC 1030, and other applicable statutes. For compliance with Center Computer security policy, the Contractor shall promptly notify the Contracting Officer's Technical Representative (COTR) when an authorized user employee no longer requires computer access.

H.12 STATEMENT OF EQUIVALENT RATES FOR FEDERAL HIRES (FAR 52.222-42)  
(MAY 1989)

In compliance with the Service Contract Act of 1965, as amended, and the regulations of the Secretary of Labor (29 CFR Part 4), this clause identifies the classes of service employees expected to be employed under the contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 U.S.C. 5341 or 5332.

THIS STATEMENT IS FOR INFORMATION ONLY: IT IS NOT A WAGE DETERMINATION

<u>Employee Class</u>	<u>Monetary Wage</u>
Senior Simulator Systems Specialist	\$15.15
Senior Computer Systems Specialist	\$15.15
Simulator Systems Specialist	\$13.76
Electronics Technician	\$13.76

FRINGE BENEFITS

- Annual Leave - Receives 13 days paid leave for service up to 3 years; 20 days for 3 to 15 years service; and 26 days for 15 years service or over.
- Sick Leave - Receives 13 days paid leave per year.
- Holidays - Receives 10 paid holidays per year.
- Health Insurance - Government pays up to 60% of health insurance.
- Group Life Insurance - Government pays two-thirds of life insurance rate premiums.
- Retirement - The Government provides three retirement plans identified as the Civil Service Retirement System (CSRS), the Federal Employees Retirement System (FERS), and the CSRS Offset. Under the CSRS, the Government contributes 7% of the employees' base pay towards the retirement benefit and 1.45% towards Medicare. Under the FERS, the Government contributes 12.9% of the employees' base pay towards a basic benefit plan, 6.2% to Social Security, 1.45% towards Medicare, and 1% (plus matching contributions of up to 4% of basic pay, depending on employees' contributions) to a thrift savings plan. Under the CSRS Offset, the Government

contributes 0.8% of the employees' base pay towards the retirement benefit, 6.2% to Social Security, and 1.45% towards Medicare.

Part-time Federal employees receive pro rata annual leave, sick leave, holiday leave, health insurance, and group life insurance benefits based on the number of hours worked.

H.13 ADVANCE APPROVAL FOR RELEASE OF TECHNICAL INFORMATION  
(LaRC 52.227-92) (OCT 1993)

The Contractor shall not release technical information based on or containing data first produced in the performance of this contract and describing the work performed under this contract unless prior written approval is given by NASA. The Contractor shall submit technical information regarding the contract effort, such as journal articles, meeting papers, and technical documents, to the Contracting Officer Technical Representative (COTR) for review and concurrence with subsequent approval by the cognizant NASA Headquarters Program Office prior to establishing claim to copyright, publication, presentation, or release to others. The Contractor may proceed upon receipt of written concurrence by the COTR as though approval also had been received from the cognizant NASA Headquarters Program Office, unless directed otherwise in the COTR concurrence letter.

H.14 RADIATION REQUIREMENTS

The Contractor shall ensure that the requirements set forth in Exhibit G, Warning-Radiation, are complied with at all times. The Contractor shall take all necessary measures to effect this compliance, including employee training and implementation of an appropriate radiation-monitoring program.

H.15 CONTRACT SECURITY CLASSIFICATION SPECIFICATION

The Contractor shall comply with the security requirements of the attached Contract Security Classification Specification, DD Form 254, as set forth in Exhibit C.

H.16 SUBCONTRACTING PLAN\*

The approved Contractor plan for subcontracting with small business and small disadvantaged business concerns is attached hereto as Exhibit E and is hereby made a part of this contract.

H.17 CONSENT TO SUBCONTRACT\*\*

Notwithstanding the provisions of FAR 52.244-2, Subcontracts (Cost Reimbursement and Letter Contracts) (JUL 1985) Alternate I (APR 1985), the

\*Not applicable to Small Business.

\*\*If the Contractor has an approved purchasing system, this clause may be deleted.

Contractor shall obtain the Contracting Officer's consent before award of a subcontract exceeding \$25,000.

## PART II - CONTRACT CLAUSES

### SECTION I - CONTRACT CLAUSES

#### I.1 LISTING OF CLAUSES INCORPORATED BY REFERENCE:

NOTICE: The following solicitation provisions and/or contract clauses pertinent to this section are hereby incorporated by reference.

#### FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

<u>CLAUSE NUMBER</u>	<u>TITLE AND DATE</u>
52.202-1	Definitions (SEP 1991)
52.203-1	Officials Not to Benefit (APR 1984)
52.203-3	Gratuities (APR 1984)
52.203-5	Covenant Against Contingent Fees (APR 1984)
52.203-6	Restrictions on Subcontractor Sales to the Government (JUL 1985)
52.203-7	Anti-Kickback Procedures (OCT 1988)
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity (SEP 1990)
52.204-2	Security Requirements (APR 1984)
52.209-6	Protecting the Government's Interest when Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (NOV 1992)
52.210-5	New Material (APR 1984)
52.212-8	Defense Priority and Allocation Requirements (SEP 1990)
52.215-1	Examination of Records by Comptroller General (FEB 1993)
52.215-2	Audit - Negotiation (FEB 1993)
52.215-22	Price Reduction for Defective Cost or Pricing Data (JAN 1991)
52.215-24	Subcontractor Cost or Pricing Data (DEC 1991)
52.215-26	Integrity of Unit Prices (APR 1991)
52.215-27	Termination of Defined Benefit Pension Plans (SEP 1989)
52.215-31	Waiver of Facilities Capital Cost of Money (SEP 1987)
52.215-33	Order of Precedence (JAN 1986)
52.215-39	Reversion or Adjustment of Plans for Postretirement Benefits Other Than Pensions (JUL 1991)
52.216-7	Allowable Cost and Payment (JUL 1991)
52.216-8	Fixed Fee (APR 1984)
52.219-8	Utilization of Small Business Concerns and Small Disadvantaged Business Concerns (FEB 1990)
52.219-9	Small Business and Small Disadvantaged Business Subcontracting Plan (JAN 1991)
52.219-13	Utilization of Women-Owned Small Businesses (AUG 1986)
52.219-16	Liquidated Damages - Small Business Subcontracting Plan (AUG 1989)
52.220-3	Utilization of Labor Surplus Area Concerns (APR 1984)
52.220-4	Labor Surplus Area Subcontracting Program (APR 1984)

52.222-1 Notice to the Government of Labor Disputes (APR 1984)  
52.222-3 Convict Labor (APR 1984)  
52.222-26 Equal Opportunity (APR 1984)  
52.222-28 Equal Opportunity Preaward Clearance of Subcontracts  
(APR 1984)  
52.222-35 Affirmative Action for Special Disabled and Vietnam Era  
Veterans (APR 1984)  
52.222-36 Affirmative Action for Handicapped Workers (APR 1984)  
52.222-37 Employment Reports on Special Disabled Veterans and  
Veterans of the Vietnam Era (JAN 1988)  
52.223-2 Clean Air and Water (APR 1984)  
52.223-3 Hazardous Material Identification and Material Safety  
Data (NOV 1991) Alternate I (NOV 1991)  
52.225-11 Restrictions on Certain Foreign Purchases (APR 1991)  
52.227-1 Authorization and Consent (APR 1984)  
52.227-2 Notice and Assistance Regarding Patent and Copyright  
Infringement (APR 1984)  
52.227-14 Rights in Data - General (JUN 1987) -- as modified by NASA  
FAR Supplement 18-52.227-14  
52.228-7 Insurance - Liability to Third Persons (APR 1984)  
52.230-2 Cost Accounting Standards (AUG 1992)  
52.230-3 Disclosure and Consistency of Cost Accounting Practices  
(AUG 1992)  
52.230-5 Administration of Cost Accounting Standards (AUG 1992)  
52.232-9 Limitation on Withholding of Payments (APR 1984)  
52.232-17 Interest (JAN 1991)  
52.232-22 Limitation of Funds (APR 1984)--as modified by NASA FAR  
Supplement 18-32.705-2  
52.232-23 Assignment of Claims (JAN 1986)  
52.232-28 Electronic Funds Transfer Payment Methods (APR 1989)--as  
modified by NASA FAR Supplement 18-32.908  
52.233-1 Disputes (DEC 1991) Alternate I (DEC 1991)  
52.233-3 Protest After Award (AUG 1989) Alternate I (JUN 1985)  
52.237-2 Protection of Government Buildings, Equipment and Vegetation  
(APR 1984)  
52.237-3 Continuity of Services (JAN 1991)  
52.242-1 Notice of Intent to Disallow Costs (APR 1984)  
52.243-2 Changes - Cost-Reimbursement (AUG 1987) Alternate II  
(APR 1984)  
52.244-2 Subcontracts (Cost-Reimbursement and Letter Contracts)  
(JUL 1985) Alternate I (APR 1985)  
52.244-5 Competition in Subcontracting (APR 1984)  
52.245-5 Government Property (Cost-Reimbursement, Time-and-Material,  
or Labor-Hour Contracts) (JAN 1986)  
52.246-25 Limitation of Liability - Services (APR 1984)  
52.249-6 Termination (Cost-Reimbursement) (MAY 1986)  
52.249-14 Excusable Delays (APR 1984)  
52.251-1 Government Supply Sources (APR 1984)  
52.253-1 Computer Generated Forms (JAN 1991)



## NASA FAR SUPPLEMENT (48 CFR CHAPTER 18) CLAUSES

<u>CLAUSE NUMBER</u>	<u>TITLE AND DATE</u>
18-52.204-70	Report on NASA Subcontracts (NOV 1992)
18-52.204-71	NASA Contractor Financial Management Reporting (DEC 1988)
18-52.219-74	Use of Rural Area Small Businesses (SEP 1990)
18-52.219-75	Small Business and Small Disadvantaged Business Subcontracting Reporting (SEP 1992)
18-52.223-70	Safety and Health (SEP 1993)
18-52.237-70	Emergency Evacuation Procedures (DEC 1988)
18-52.242-72	Observance of Legal Holidays (AUG 1992)
18-52.245-70	Acquisition of Centrally Reportable Equipment (MAR 1989)
18-52.245-71	Installation-Provided Government Property (MAR 1989) Alternate I (MAR 1989)

## I.2 CLAUSES IN FULL TEXT

The clauses listed below follow in full text: -

52.252-2	Clauses Incorporated by Reference (JUN 1988)
52.203-9	Requirement for Certificate of Procurement Integrity - Modification (NOV 1990)
52.203-12	Limitation on Payments to Influence Certain Federal Transactions (JAN 1990)
52.217-9	Option to Extend the Term of the Contract (MAR 1989)
52.222-2	Payment for Overtime Premiums (JUL 1990)
52.222-41	Service Contract Act of 1965, as Amended (MAY 1989)
52.223-6	Drug-Free Workplace (JUL 1990)
52.225-3	Buy American Act - Supplies (JAN 1994)
52.232-25	Prompt Payment (SEP 1992)
52.242-13	Bankruptcy (APR 1991)
52.252-6	Authorized Deviations in Clauses (APR 1984)
18-52.204-75	Security Classification Requirements (SEP 1989)
18-52.204-78	Security Plan for Unclassified Federal Computer Systems (SEP 1993)
18-52.208-81	Restrictions on Printing and Duplicating (AUG 1993)
18-52.209-71	Limitation of Future Contracting (DEC 1988)
18-52.219-76	NASA Small Disadvantaged Business Goal (JUL 1991)
18-52.228-75	Minimum Insurance Coverage (OCT 1988)
18-52.242-70	Technical Direction (SEP 1993)
18-52.245-73	Financial Reporting of Government-Owned/Contractor-Held Property (MAR 1989)

## I.3 CLAUSES INCORPORATED BY REFERENCE (FAR 52.252-2) (JUN 1988)

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.

I.4 REQUIREMENT FOR CERTIFICATE OF PROCUREMENT INTEGRITY--MODIFICATION (FAR 52.203-9) (NOV 1990)

- (a) Definitions. The definitions set forth in FAR 3.104-4 are hereby incorporated in this clause.
- (b) The Contractor agrees that it will execute the certification set forth in paragraph (c) of this clause when requested by the contracting officer in connection with the execution of any modification of this contract.
- (c) Certification. As required in paragraph (b) of this clause, the officer or employee responsible for the modification proposal shall execute the following certification:

CERTIFICATE OF PROCUREMENT INTEGRITY--MODIFICATION (NOV 1990)

(1) I, \_\_\_\_\_, [Name of certifier]

am the officer or employee responsible for the preparation of this modification proposal and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certification, I have no information concerning a violation or possible violation of subsections 27(a), (b), (d), or (f) of the Office of Federal Procurement Policy Act, as amended\* (41 U.S.C. 423), (hereinafter referred to as "the Act"), as implemented in the FAR, occurring during the conduct of this procurement

(contract and modification number).

(2) As required by subsection 27(e)(1)(B) of the Act, I further certify that, to the best of my knowledge and belief, each officer, employee, agent, representative, and consultant of \_\_\_\_\_

[Name of Offeror]

who has participated personally and substantially in the preparation or submission of this proposal has certified that he or she is familiar with, and will comply with, the requirements of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a violation or possible violation of subsections 27(a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.

(3) Violations or possible violations: (Continue on plain bond paper if necessary and label Certificate of Procurement Integrity--Modification (Continuation Sheet), ENTER NONE IF NONE EXIST) \_\_\_\_\_

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[Signature of the officer or employee responsible for the modification proposal and date]

[Typed name of the officer or employee responsible for the modification proposal]

\*Subsections 27(a), (b), and (d) are effective on December 1, 1990.  
Subsection 27(f) is effective on June 1, 1991.

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER TITLE 18, UNITED STATES CODE, SECTION 1001.

(End of certification)

(d) In making the certification in paragraph (2) of the certificate, the officer or employee of the competing Contractor responsible for the offer or bid, may rely upon a one-time certification from each individual required to submit a certification to the competing Contractor, supplemented by periodic training. These certifications shall be obtained at the earliest possible date after an individual required to certify begins employment or association with the Contractor. If a Contractor decides to rely on a certification executed prior to suspension of Section 27 (i.e., prior to December 1, 1989), the Contractor shall ensure that an individual who has so certified is notified that Section 27 has been reinstated. These certifications shall be maintained by the Contractor for a period of 6 years from the date a certifying employee's employment with the company ends or, for an agency, representative, or consultant, 6 years from the date such individual ceases to act on behalf of the Contractor.

(e) The certification required by paragraph (c) of this clause is a material representation of fact upon which reliance will be placed in executing this modification.

#### I.5 LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (FAR 52.203-12) (JAN 1990)

##### (a) Definitions.

"Agency," as used in this clause, means executive agency as defined in 2.101.

"Covered Federal action," as used in this clause, means any of the following Federal actions:

- (1) The awarding of any Federal contract.
- (2) The making of any Federal grant.
- (3) The making of any Federal loan.
- (4) The entering into of any cooperative agreement.
- (5) The extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

"Indian tribe" and "tribal organization," as used in this clause, have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and include Alaskan Natives.

"Influencing or attempting to influence," as used in this clause, means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government," as used in this clause, means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, including a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Officer or employee of an agency," as used in this clause, includes the following individuals who are employed by an agency:

(1) An individual who is appointed to a position in the Government under title 5, United States Code, including a position under a temporary appointment.

(2) A member of the uniformed services, as defined in subsection 101(3), title 37, United States Code.

(3) A special Government employee, as defined in section 202, title 18, United States Code.

(4) An individual who is a member of a Federal advisory committee, as defined by the Federal Advisory Committee Act, title 5, United States Code appendix 2.

"Person," as used in this clause, means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit, or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation," as used in this clause, means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment," as used in this clause, means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient," as used in this clause, includes the Contractor and all subcontractors. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed," as used in this clause, means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State," as used in this clause, means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and multi-State, regional, or interstate entity having governmental duties and powers.

## (b) Prohibitions.

(1) Section 1352 of title 31, United States Code, among other things, prohibits a recipient of a Federal contract, grant, loan, or cooperative agreement from using appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.

(2) The Act also requires Contractors to furnish a disclosure if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

(3) The prohibitions of the Act do not apply under the following conditions:

(i) Agency and legislative liaison by own employees.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of a payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action if the payment is for agency and legislative liaison activities not directly related to a covered Federal action.

(B) For purposes of subdivision (b)(3)(i)(A) of this clause, providing any information specifically requested by an agency or Congress is permitted at any time.

(C) The following agency and legislative liaison activities are permitted at any time where they are not related to a specific solicitation for any covered Federal action:

(1) Discussing with an agency the qualities and characteristics (including individual demonstrations) of the person's products or services, conditions or terms of sale, and service capabilities.

(2) Technical discussions and other activities regarding the application or adaptation of the person's products or services for an agency's use.

(D) The following agency and legislative liaison activities are permitted where they are prior to formal solicitation of any covered Federal action -

(1) Providing any information not specifically requested but necessary for an agency to make an informed decision about initiation of a covered Federal action;

(2) Technical discussions regarding the preparation of an unsolicited proposal prior to its official submission; and

(3) Capability presentations by persons seeking awards from an agency pursuant to the provisions of the Small Business Act, as amended by Pub. L. 95-507, and subsequent amendments.

(E) Only those services expressly authorized by subdivision (b)(3)(i)(A) of this clause are permitted under this clause.

(ii) Professional and technical services.

(A) The prohibition on the use of appropriated funds, in subparagraph (b)(1) of this clause, does not apply in the case of -

(1) A payment of reasonable compensation made to an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action, if payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action.

(2) Any reasonable payment to a person, other than an officer or employee of a person requesting or receiving a covered Federal action or an extension, continuation, renewal, amendment, or modification of a covered Federal action if the payment is for professional or technical services rendered directly in the preparation, submission, or negotiation of any bid, proposal, or application for that Federal action or for meeting requirements imposed by or pursuant to law as a condition for receiving that Federal action. Persons other than officers or employees of a person requesting or receiving a covered Federal action include consultants and trade associations.

(B) For purposes of subdivision (b)(3)(ii)(A) of this clause, "professional and technical services" shall be limited to advice and analysis directly applying any professional or technical discipline. For example, drafting of a legal document accompanying a bid or proposal by a lawyer is allowable. Similarly, technical advice provided by an engineer on the performance or operational capability of a piece of equipment rendered directly in the negotiation of a contract is allowable. However, communications with the intent to influence made by a professional (such as a licensed lawyer) or a technical person (such as a licensed accountant) are not allowable under this section unless they provide advice and analysis directly applying their professional or technical expertise and unless the advice or analysis is rendered directly and solely in the preparation, submission or negotiation of a covered Federal action. Thus, for example, communications with the intent to influence made by a lawyer that do not provide legal advice or analysis directly and solely related to the legal aspects of his or her client's proposal, but generally advocate one proposal over another are not allowable under this section because the lawyer is not providing professional legal services. Similarly, communications with the intent to influence made by an engineer providing an engineering analysis prior to the preparation or submission of a bid or proposal are not allowable under this section since the engineer is providing technical services but not directly in the preparation, submission or negotiation of a covered Federal action.

(C) Requirements imposed by or pursuant to law as a condition for receiving a covered Federal award include those required by law or regulation and any other requirements in the actual award documents.

(D) Only those services expressly authorized by subdivisions (b)(3)(ii)(A)(1) and (2) of this clause are permitted under this clause.

(E) The reporting requirements of FAR 3.803(a) shall not apply with respect to payments of reasonable compensation made to regularly employed officers or employees of a person.

(iii) Disclosure.

(A) The Contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to

make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(B) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes -

(1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(C) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(D) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(iv) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(v) Penalties.

(A) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(B) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(vi) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any of the provisions.

#### I.6 OPTION TO EXTEND THE TERM OF THE CONTRACT (FAR 52.217-9) (MAR 1989)

(a) The Government may extend the term of this contract by written notice to the Contractor within the time specified in the schedule.

(b) If the Government exercises this option, the extended contract shall be considered to include this option provision.

(c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed five years and six months.

**I.7 PAYMENT FOR OVERTIME PREMIUMS (FAR 52.222-2) (JUL 1990)**

(a) The use of overtime is authorized under this contract if the overtime premium cost does not exceed NONE or the overtime premium is paid for work -

(1) Necessary to cope with emergencies such as those resulting from accidents, natural disasters, breakdowns of production equipment, or occasional production bottlenecks of a sporadic nature;

(2) By indirect-labor employees such as those performing duties in connection with administration, protection, transportation, maintenance, standby plant protection, operation of utilities, or accounting;

(3) To perform tests, industrial processes, laboratory procedures, loading or unloading of transportation conveyances, and operations in flight or afloat that are continuous in nature and cannot reasonably be interrupted or completed otherwise; or

(4) That will result in lower overall costs to the Government.

(b) Any request for estimated overtime premiums that exceeds the amount specified above shall include all estimated overtime for contract completion and shall -

(1) Identify the work unit; e.g., department or section in which the requested overtime will be used, together with present workload, staffing, and other data of the affected unit sufficient to permit the Contracting Officer to evaluate the necessity for the overtime;

(2) Demonstrate the effect that denial of the request will have on the contract delivery or performance schedule;

(3) Identify the extent to which approval of overtime would affect the performance or payments in connection with other Government contracts, together with identification of each affected contract; and

(4) Provide reasons why the required work cannot be performed by using multishift operations or by employing additional personnel.

**I.8 SERVICE CONTRACT ACT OF 1965, AS AMENDED (FAR 52.222-41) (MAY 1989)**

(a) **Definitions.** "Act," as used in this clause, means the Service Contract Act of 1965, as amended (41 U.S.C. 351, et seq.).

"Contractor," as used in this clause or in any subcontract, shall be deemed to refer to the subcontractor, except in the term "Government Prime Contractor."

"Service employee," as used in this clause, means any person engaged in the performance of this contract other than any person employed in a bona fide executive, administrative, or professional capacity, as these terms are defined in Part 541 of Title 29, Code of Federal Regulations, as revised. It includes all such persons regardless of any contractual relationship that may be alleged to exist between a Contractor or subcontractor and such persons.

(b) **Applicability.** This contract is subject to the following provisions and to all other applicable provisions of the Act and regulations of the Secretary of Labor (29 CFR Part 4). This clause does not apply to contracts or subcontracts administratively exempted by the Secretary of Labor or exempted by 41 U.S.C. 356, as interpreted in Subpart C of 29 CFR Part 4.

(c) **Compensation.**

(1) Each service employee employed in the performance of this contract by the Contractor or any subcontractor shall be paid not less than the minimum monetary wages and shall be furnished fringe benefits in accordance with the wages



and fringe benefits determined by the Secretary of Labor, or authorized representative, as specified in any wage determination attached to this contract.

(2) (i) If a wage determination is attached to this contract, the Contractor shall classify any class of service employee which is not listed therein and which is to be employed under this contract (i.e., the work to be performed is not performed by any classification listed in the wage determination) so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed class of employees shall be paid the monetary wages and furnished the fringe benefits as are determined pursuant to the procedures in this paragraph (c).

(ii) This conforming procedure shall be initiated by the Contractor prior to the performance of contract work by the unlisted class of employee. The Contractor shall submit Standard Form (SF) 1444, Request For Authorization of Additional Classification and Rate, to the Contracting Officer no later than 30 days after the unlisted class of employee performs any contract work. The Contracting Officer shall review the proposed classification and rate and promptly submit the completed SF 1444 (which must include information regarding the agreement or disagreement of the employees' authorized representatives or the employees themselves together with the agency recommendation), and all pertinent information to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor. The Wage and Hour Division will approve, modify, or disapprove the action or render a final determination in the event of disagreement within 30 days of receipt or will notify the Contracting Officer within 30 days of receipt that additional time is necessary.

(iii) The final determination of the conformance action by the Wage and Hour Division shall be transmitted to the Contracting Officer who shall promptly notify the Contractor of the action taken. Each affected employee shall be furnished by the Contractor with a written copy of such determination or it shall be posted as a part of the wage determination.

(iv) (A) The process of establishing wage and fringe benefit rates that bear a reasonable relationship to those listed in a wage determination cannot be reduced to any single formula. The approach used may vary from wage determination to wage determination depending on the circumstances. Standard wage and salary administration practices which rank various job classifications by pay grade pursuant to point schemes or other job factors may, for example, be relied upon. Guidance may also be obtained from the way different jobs are rated under Federal pay systems (Federal Wage Board Pay System and the General Schedule) or from other wage determinations issued in the same locality. Basic to the establishment of any conformable wage rate(s) is the concept that a pay relationship should be maintained between job classifications based on the skill required and the duties performed.

(B) In the case of a contract modification, an exercise of an option, or extension of an existing contract, or in any other case where a Contractor succeeds a contract under which the classification in question was previously conformed pursuant to paragraph (c) of this clause, a new conformed wage rate and fringe benefits may be assigned to the conformed classification by indexing (i.e., adjusting) the previous conformed rate and fringe benefits by an amount equal to the average (mean) percentage increase (or decrease, where appropriate) between the wages and fringe benefits specified for all classifications to be used on the contract which are listed in the current wage

determination, and those specified for the corresponding classifications in the previously applicable wage determination. Where conforming actions are accomplished in accordance with this paragraph prior to the performance of contract work by the unlisted class of employees, the Contractor shall advise the Contracting Officer of the action taken but the other procedures in subdivision (c)(ii) of this clause need not be followed.

(C) No employee engaged in performing work on this contract shall in any event be paid less than the currently applicable minimum wage specified under section 6(a)(1) of the Fair Labor Standards Act of 1938, as amended.

(v) The wage rate and fringe benefits finally determined under this subparagraph (c)(2) of this clause shall be paid to all employees performing in the classification from the first day on which contract work is performed by them in the classification. Failure to pay the unlisted employees the compensation agreed upon by the interested parties and/or finally determined by the Wage and Hour Division retroactive to the date such class of employees commenced contract work shall be a violation of the Act and this contract.

(vi) Upon discovery of failure to comply with subparagraph (c)(2) of this clause, the Wage and Hour Division shall make a final determination of conformed classification, wage rate, and/or fringe benefits which shall be retroactive to the date such class or classes of employees commenced contract work.

(3) **Adjustment of Compensation.** If the term of this contract is more than 1 year, the minimum monetary wages and fringe benefits required to be paid or furnished thereunder to service employees under this contract shall be subject to adjustment after 1 year and not less often than once every 2 years, under wage determinations issued by the Wage and Hour Division.

(d) **Obligation to Furnish Fringe Benefits.** The Contractor or subcontractor may discharge the obligation to furnish fringe benefits specified in the attachment or determined under subparagraph (c)(2) of this clause by furnishing equivalent combinations of bona fide fringe benefits, or by making equivalent or differential cash payments, only in accordance with Subpart D of 29 CFR Part 4.

(e) **Minimum Wage.** In the absence of a minimum wage attachment for this contract, neither the Contractor nor any subcontractor under this contract shall pay any person performing work under this contract (regardless of whether the person is a service employee) less than the minimum wage specified by section 6(a)(1) of the Fair Labor Standards Act of 1938. Nothing in this clause shall relieve the Contractor or any subcontractor of any other obligation under law or contract for the payment of a higher wage to any employee.

(f) **Successor Contracts.** If this contract succeeds a contract subject to the Act under which substantially the same services were furnished in the same locality and service employees were paid wages and fringe benefits provided for in a collective bargaining agreement, in the absence of the minimum wage attachment for this contract setting forth such collectively bargained wage rates and fringe benefits, neither the Contractor nor any subcontractor under this contract shall pay any service employee performing any of the contract work (regardless of whether or not such employee was employed under the predecessor contract), less than the wages and fringe benefits provided for in such collective bargaining agreement, to which such employee would have been entitled if employed under the predecessor contract, including accrued wages and fringe benefits and any prospective increases in wages and fringe benefits provided for under such agreement. No Contractor or subcontractor under this contract may be relieved of

the foregoing obligation unless the limitations of 29 CFR 4.1b(b) apply or unless the Secretary of Labor or the Secretary's authorized representative finds, after a hearing as provided in 29 CFR 4.10 that the wages and/or fringe benefits provided for in such agreement are substantially at variance with those which prevail for services of a character similar in the locality, or determines, as provided in 29 CFR 4.11, that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations. Where it is found in accordance with the review procedures provided in 29 CFR 4.10 and/or 4.11 and Parts 6 and 8 that some or all of the wages and/or fringe benefits contained in a predecessor Contractor's collective bargaining agreement are substantially at variance with those which prevail for services of a character similar in the locality, and/or that the collective bargaining agreement applicable to service employees employed under the predecessor contract was not entered into as a result of arm's length negotiations, the Department will issue a new or revised wage determination setting forth the applicable wage rates and fringe benefits. Such determination shall be made part of the contract or subcontract, in accordance with the decision of the Administrator, the Administrative Law Judge, or the Board of Service Contract Appeals, as the case may be, irrespective of whether such issuance occurs prior to or after the award of a contract or subcontract (53 Comp. Gen. 401 (1973)). In the case of a wage determination issued solely as a result of a finding of substantial variance, such determination shall be effective as of the date of the final administrative decision.

(g) **Notification to Employees.** The Contractor and any subcontractor under this contract shall notify each service employee commencing work on this contract of the minimum monetary wage and any fringe benefits required to be paid pursuant to this contract, or shall post the wage determination attached to this contract. The poster provided by the Department of Labor (Publication WH 1313) shall be posted in a prominent and accessible place at the worksite. Failure to comply with this requirement is a violation of Section 2(a)(4) of the Act and of this contract.

(h) **Safe and Sanitary Working Conditions.** The Contractor or subcontractor shall not permit any part of the services called for by this contract to be performed in buildings or surroundings or under working conditions provided by or under the control or supervision of the Contractor or subcontractor which are unsanitary, hazardous, or dangerous to the health or safety of the service employees. The Contractor or subcontractor shall comply with the safety and health standards applied under 29 CFR Part 1925.

(i) **Records.** (1) The Contractor and each subcontractor performing work subject to the Act shall make and maintain for 3 years from the completion of the work, and make them available for inspection and transcription by authorized representatives of the Wage and Hour Division, Employment Standards Administration, a record of the following:

- (i) For each employee subject to the Act -
  - (A) Name and address and social security number;
  - (B) Correct work classification or classifications, rate or rates of monetary wages paid and fringe benefits provided, rate or rates of payments in lieu of fringe benefits, and total daily and weekly compensation;
  - (C) Daily and weekly hours worked by each employee; and
  - (D) Any deductions, rebates, or refunds from the total daily or weekly compensation of each employee.

(ii) For those classes of service employees not included in any wage determination attached to this contract, wage rates or fringe benefits determined by the interested parties or by the Administrator or authorized representative, under the terms of paragraph (c) of this clause. A copy of the report required by subdivision (c)(2)(ii) of this clause will fulfill this requirement.

(iii) Any list of the predecessor Contractor's employees which had been furnished to the Contractor as prescribed by paragraph (n) of this clause.

(2) The Contractor shall also make available a copy of this contract for inspection or transcription by authorized representatives of the Wage and Hour Division.

(3) Failure to make and maintain or to make available these records for inspection and transcription shall be a violation of the regulations and this contract, and in the case of failure to produce these records, the Contracting Officer, upon direction of the Department of Labor and notification to the Contractor, shall take action to cause suspension of any further payment or advance of funds until such violation ceases.

(4) The Contractor shall permit authorized representatives of the Wage and Hour Division to conduct interviews with employees at the worksite during normal working hours.

(j) **Pay Periods.** The Contractor shall unconditionally pay to each employee subject to the Act all wages due free and clear and without subsequent deduction (except as otherwise provided by law or Regulations, 29 CFR Part 4), rebate, or kickback on any account. These payments shall be made no later than one pay period following the end of the regular pay period in which the wages were earned or accrued. A pay period under this Act may not be of any duration longer than semi-monthly.

(k) **Withholding of Payment and Termination of Contract.** The Contracting Officer shall withhold or cause to be withheld from the Government Prime Contractor under this or any other Government contract with the Prime Contractor such sums as an appropriate official of the Department of Labor requests or such sums as the Contracting Officer decides may be necessary to pay underpaid employees employed by the Contractor or subcontractor. In the event of failure to pay any employees subject to the Act all or part of the wages or fringe benefits due under the Act, the Contracting Officer may, after authorization or by direction of the Department of Labor and written notification to the Contractor, take action to cause suspension of any further payment or advance of funds until such violations have ceased. Additionally, any failure to comply with the requirements of this clause may be grounds for termination of the right to proceed with the contract work. In such event, the Government may enter into other contracts or arrangements for completion of the work, charging the Contractor in default with any additional cost.

(l) **Subcontracts.** The Contractor agrees to insert this clause in all subcontracts subject to the Act.

(m) **Collective Bargaining Agreements Applicable to Service Employees.** If wages to be paid or fringe benefits to be furnished any service employees employed by the Government Prime Contractor or any subcontractor under the contract are provided for in a collective bargaining agreement which is or will be effective during any period in which the contract is being performed, the Government Prime Contractor shall report this fact to the Contracting Officer, together with full information as to the application and accrual of such wages and fringe benefits, including any prospective increases, to service employees engaged in work on the

contract, and a copy of the collective bargaining agreement. Such report shall be made upon commencing performance of the contract, in the case of collective bargaining agreements effective at such time, and in the case of such agreements or provisions or amendments thereof effective at a later time during the period of contract performance such agreements shall be reported promptly after negotiation thereof.

(n) **Seniority List.** Not less than 10 days prior to completion of any contract being performed at a Federal facility where service employees may be retained in the performance of the succeeding contract and subject to a wage determination which contains vacation or other benefit provisions based upon length of service with a Contractor (predecessor) or successor (29 CFR Part 4.173), the incumbent Prime Contractor shall furnish the Contracting Officer a certified list of the names of all service employees on the Contractor's or subcontractor's payroll during the last month of contract performance. Such list shall also contain anniversary dates of employment on the contract either with the current or predecessor Contractors of each such service employee. The Contracting Officer shall turn over such list to the successor Contractor at the commencement of the succeeding contract.

(o) **Rulings and Interpretations.** Rulings and interpretations of the Act are contained in Regulations, 29 CFR Part 4.

(p) **Contractor's Certification.**

(1) By entering into this contract, the Contractor (and officials thereof) certifies that neither it (nor he or she) nor any person or firm who has substantial interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of the sanctions imposed under section 5 of the Act.

(2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract under section 5 of the Act.

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(q) **Variations, Tolerances, and Exemptions Involving Employment.**

Notwithstanding any of the provisions in paragraphs (b) through (o) of this clause, the following employees may be employed in accordance with the following variations, tolerances, and exemptions, which the Secretary of Labor, pursuant to section 4(b) of the Act prior to its amendment by Public L. 92-473, found to be necessary and proper in the public interest or to avoid serious impairment of the conduct of Government business.

(1) Apprentices, student-learners, and workers whose earning capacity is impaired by age, physical or mental deficiency, or injury may be employed at wages lower than the minimum wages otherwise required by section 2(a)(1) or 2(b)(1) of the Act without diminishing any fringe benefits or cash payments in lieu thereof required under section 2(a)(2) of the Act, in accordance with the conditions and procedures prescribed for the employment of apprentices, student-learners, handicapped persons, and handicapped clients of sheltered workshops under Section 14 of the Fair Labor Standards Act of 1938, in the regulations issued by the Administrator (29 CFR Parts 520, 521, 524, and 525).

(2) The Administrator will issue certificates under the Act for the employment of apprentices, student-learners, handicapped persons, or handicapped clients of sheltered workshops not subject to the Fair Labor Standards Act of 1938, or subject to different minimum rates of pay under the two acts, authorizing appropriate rates of minimum wages (but without changing requirements concerning fringe benefits or supplementary cash payments in lieu thereof), applying

procedures prescribed by the applicable regulations issued under the Fair Labor Standards Act of 1938 (29 CFR Parts 520, 521, 524, and 525).

(3) The Administrator will also withdraw, annul, or cancel such certificates in accordance with the regulations in 29 CFR Parts 525 and 528.

(r) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed and individually registered in a bona fide apprenticeship program registered with a State Apprenticeship Agency which is recognized by the U.S. Department of Labor, or if no such recognized agency exists in a State, under a program registered with the Bureau of Apprenticeship and Training, Employment and Training Administration, U.S. Department of Labor. Any employee who is not registered as an apprentice in an approved program shall be paid the wage rate and fringe benefits contained in the applicable wage determination for the journeyman classification of work actually performed. The wage rates paid apprentices shall not be less than the wage rate for their level of progress set forth in the registered program, expressed as the appropriate percentage of the journeyman's rate contained in the applicable wage determination. The allowable ratio of apprentices to journeymen employed on the contract work in any craft classification shall not be greater than the ratio permitted to the Contractor as to his entire work force under the registered program.

(s) **Tips.** An employee engaged in an occupation in which the employee customarily and regularly receives more than \$30 a month in tips may have the amount of tips credited by the employer against the minimum wage required by section 2(a)(1) or section 2(b)(1) of the Act, in accordance with section 3(m) of the Fair Labor Standards Act and Regulations 29 CFR Part 531. However, that the amount of credit shall not exceed \$1.34 per hour beginning January 1, 1981. To use this provision -

(1) The employer must inform tipped employees about this tip credit allowance before the credit is utilized;

(2) The employees must be allowed to retain all tips (individually or through a pooling arrangement and regardless of whether the employer elects to take a credit for tips received);

(3) The employer must be able to show by records that the employee receives at least the applicable Service Contract Act minimum wage through the combination of direct wages and tip credit; and

(4) The use of such tip credit must have been permitted under any predecessor collective bargaining agreement applicable by virtue of section 4(c) of the Act.

(t) **Disputes Concerning Labor Standards.** The U.S. Department of Labor has set forth in 29 CFR Parts 4, 6, and 8 procedures for resolving disputes concerning labor standards requirements. Such disputes shall be resolved in accordance with those procedures and not the Disputes clause of this contract. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

#### I.9 DRUG-FREE WORKPLACE (FAR 52.223-6) (JUL 1990)

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

"Controlled substance" means a controlled substance in Schedules I through V of Section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than a minimal impact or involvement in contract performance.

"Individual" means an offeror/Contractor that has no more than one employee including the offeror/Contractor.

(b) The Contractor, if other than an individual, shall - within 30 calendar days after award (unless a longer period is agreed to in writing for contracts of 30 calendar days or more performance duration); or as soon as possible for contracts of less than 30 calendar days performance duration -

(1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about -

- (i) The dangers of drug abuse in the workplace;
- (ii) The Contractor's policy of maintaining a drug-free workplace;
- (iii) Any available drug counseling, rehabilitation, and employee assistance programs; and
- (iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this clause;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this clause that, as a condition of continued employment on this contract, the employee will -

- (i) Abide by the terms of the statement; and
- (ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 days after such conviction.

(5) Notify the Contracting Officer in writing within 10 calendar days after receiving notice under subdivision (b)(4)(ii) of this clause, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;

(6) Within 30 calendar days after receiving notice under subdivision (b)(4)(ii) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

- (i) Taking appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this clause.

(c) The Contractor, if an individual, agrees by award of the contract or acceptance of a purchase order, not to engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in the performance of this contract.

(d) In addition to other remedies available to the Government, the Contractor's failure to comply with the requirements of paragraphs (b) or (c) of this clause may, pursuant to FAR 23.506, render the Contractor subject to suspension of contract payments, termination of the contract for default, and suspension or debarment.

#### I.10 BUY AMERICAN ACT - SUPPLIES (FAR 52.225-3) (JAN 1994)

(a) The Buy American Act (41 U.S.C. 10) provides that the Government give preference to domestic end products.

"Components," as used in this clause, means those articles, materials, and supplies incorporated directly into the end products.

"Domestic end product," as used in this clause, means (1) an unmanufactured end product mined or produced in the United States, or (2) an end product manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind as the products referred to in subparagraphs (b)(2) or (3) of this clause shall be treated as domestic. Scrap generated, collected, and prepared for processing in the United States is considered domestic. "End products," as used in this clause, means those articles, materials, and supplies to be acquired for public use under this contract.

(b) The Contractor shall deliver only domestic end products, except those -

(1) For use outside the United States;

(2) That the Government determines are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality;

(3) For which the agency determines that domestic preference would be inconsistent with the public interest; or

(4) For which the agency determines the cost to be unreasonable (see Section 25.105 of the Federal Acquisition Regulation).

#### I.11 PROMPT PAYMENT (FAR 52.232-25) (SEP 1992)

Notwithstanding any other payment clause in this contract, the Government will make invoice payments and contract financing payments under the terms and conditions specified in this clause. Payment shall be considered as being made on the day a check is dated or an electronic funds transfer is made. Definitions of pertinent terms are set forth in 32.902. All days referred to in this clause are calendar days, unless otherwise specified. The term "foreign vendor" means an incorporated concern not incorporated in the United States, or an unincorporated concern having its principal place of business outside the United States.



(a) Invoice Payments.

(1) For purposes of this clause, "invoice payment" means a Government disbursement of monies to a Contractor under a contract or other authorization for supplies or services accepted by the Government. This includes payments for partial deliveries that have been accepted by the Government and final cost or fee payments where amounts owed have been settled between the Government and the Contractor.

(2) Except as indicated in subparagraph (a)(3) and paragraph (c) of this clause, the due date for making invoice payments by the designated payment office shall be the later of the following two events:

(i) The 30th day after the designated billing office has received a proper invoice from the Contractor.

(ii) The 30th day after Government acceptance of supplies delivered or services performed by the Contractor. On a final invoice where the payment amount is subject to contract settlement actions, acceptance shall be deemed to have occurred on the effective date of the contract settlement. However, if the designated billing office fails to annotate the invoice with the actual date of receipt, the invoice payment due date shall be deemed to be the 30th day after the date the Contractor's invoice is dated, provided a proper invoice is received and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(3) The due date on contracts for meat, meat food products, or fish; contracts for perishable agricultural commodities, contracts for dairy products, edible fats or oils, and food products prepared from edible fats or oils, and contracts not requiring submission of an invoice shall be as follows:

(i) The due date for meat and meat food products, as defined in Section 2(a)(3) of the Packers and Stockyard Act of 1921 (7 U.S.C. 182(3)) and further defined in Pub. L. 98-181 to include any edible fresh or frozen poultry meat, any perishable poultry meat food product, fresh eggs, and any perishable egg product, will be as close as possible to, but not later than, the 7th day after product delivery.

(ii) The due date for fresh or frozen fish, as defined in Section 204(3) of the Fish and Seafood Promotion Act of 1986 (16 U.S.C. 4003(3)), will be as close as possible to, but not later than, the seventh day after product delivery.

(iii) The due date for perishable agricultural commodities, as defined in section 1(4) of the Perishable Agricultural commodities Act of 1930 (7 U.S.C. 499a(44)), will be as close as possible to, but not later than, the 10th day after product delivery, unless another date is specified in the contract.

(iv) The due date for dairy products, as defined in section 111(e) of the Dairy Production Stabilization Act of 1983 (7 U.S.C. 4502(e)), edible fats or oils, and food products prepared from edible fats or oils, will be as close as possible to, but not later than, the 10th day after the date on which a proper invoice has been received.

(v) If the contract does not require submission of an invoice for payment (e.g., period lease payments), the due date will be as specified in the contract.

(4) An invoice is the Contractor's bill or written request for payment under the contract for supplies delivered or services performed. An invoice shall be prepared and submitted to the designated billing office specified in the contract. A proper invoice must include the items listed in subdivisions (a)(4)(i) through (a)(4)(viii) of this clause. If the invoice does not comply with these

requirements, then the Contractor will be notified of the defect within 7 days after receipt of the invoice at the designated billing office (3 days for meat, meat food products, or fish, and 5 days for perishable agricultural commodities, edible fats or oils, and food products prepared from edible fats or oils. Untimely notification will be taken into account in the computation of any interest penalty owed the Contractor in the manner described in subparagraph (a)(6) of this clause.

- (i) Name and address of the Contractor.
- (ii) Invoice date.
- (iii) Contract number or other authorization for supplies delivered or services performed (including order number and contract line item number).
- (iv) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed.
- (v) Shipping and payment terms (e.g., shipment number and date of shipment, prompt payment discount terms). Bill of lading number and weight of shipment will be shown for shipments on Government bills of lading.
- (vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).
- (vii) Name (where practicable), title, phone number and mailing address of person to be notified in event of a defective invoice.
- (viii) Any other information or documentation required by other requirements of the contract (such as evidence of shipment).

(5) An interest penalty shall be paid automatically by the Government, without request from the Contractor, if payment is not made by the due date and the conditions listed in subdivisions (a)(5)(i) through (a)(5)(iii) of this clause are met, if applicable. An interest penalty shall not be paid on contracts awarded to foreign vendors outside the United States for work performed outside the United States.

- (i) A proper invoice was received by the designated billing office.
- (ii) A receiving report or other Government documentation authorizing payment was processed and there was no disagreement over quantity, quality, or Contractor compliance with any contract term or condition.
- (iii) In the case of a final invoice for any balance of funds due the Contractor for supplies delivered or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(6) The interest penalty shall be at the rate established by the Secretary of the Treasury under Section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) that is in effect on the day after the due date, except where the interest penalty is prescribed by other governmental authority.

This rate is referred to as the "Renegotiation Board Interest Rate," and it is published in the Federal Register semiannually on or about January 1 and July 1. The interest penalty shall accrue daily on the invoice payment amount approved by the Government and be compounded in 30-day increments inclusive from the first day after the due date through the payment date. That is, interest accrued at the end of any 30-day period will be added to the approved invoice payment amount and be subject to interest penalties if not paid in the succeeding 30-day period. If the designated billing office failed to notify the Contractor of a defective invoice within the periods prescribed in paragraph (a)(4) of this clause, then the due date on the corrected invoice will be adjusted by subtracting the number of days taken beyond the prescribed notification of defects period.

Any interest penalty owed the Contractor will be based on this adjusted due date. Adjustments will be made by the designated payment office for errors in calculating interest penalties, if requested by the Contractor.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance shall be deemed to have occurred constructively on the 7th day (unless otherwise specified in this contract) after the Contractor delivered the supplies or performed the services in accordance with the terms and conditions of the contract, unless there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. In the event that actual acceptance occurs within the constructive acceptance period, the determination of an interest penalty shall be based on the actual date of acceptance.

The constructive acceptance requirement does not, however, compel Government officials to accept supplies or services, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The following periods of time will not be included in the determination of an interest penalty:

(A) The period taken to notify the Contractor of defects in invoices submitted to the Government, but this may not exceed 7 days (3 days for meat, meat food products, or fish, and 5 days for perishable agricultural commodities, dairy products, edible fats or oils, and food products prepared from edible fats or oils).

(B) The period between the defects notice and resubmission of the corrected invoice by the Contractor.

(iii) Interest penalties will not continue to accrue after the filing of a claim for such penalties under the clause at 52.233-1, Disputes, or for more than 1 year. Interest penalties of less than \$1.00 need not be paid.

(iv) Interest penalties are not required on payment delays due to disagreement between the Government and Contractor over the payment amount or other issues involving contract compliance or on amounts temporarily withheld or retained in accordance with the terms of the contract. Claims involving disputes, and any interest that may be payable, will be resolved in accordance with the clause at 52.233-1, Disputes.

(7) An interest penalty shall also be paid automatically by the designated payment office, without request from the Contractor, if a discount for prompt payment is taken improperly. The interest penalty will be calculated as described in subparagraph (a)(6) of this clause on the amount of discount taken for the period beginning with the first day after the end of the discount period through the date when the Contractor is paid.

(8) If this contract was awarded on or after October 1, 1989, a penalty amount, calculated in accordance with regulations issued by the Office of Management and Budget, shall be paid in addition to the interest penalty amount if the Contractor -

- (i) Is owed an interest penalty;
- (ii) Is not paid the interest penalty within 10 days after the date the invoice amount is paid; and
- (iii) Makes a written demand, not later than 40 days after the date the invoice amount is paid, that the agency pay such a penalty.

(b) Contract Financing Payments.

(1) For purposes of this clause, "contract financing payment" means a Government disbursement of monies to a Contractor under a contract clause or other authorization prior to acceptance of supplies or services by the Government.

Contract financing payments include advance payments, progress payments based on cost under the clause at 52.232-16, Progress Payments, progress payments based on a percentage or stage of completion (32.102(e)(1)) other than those made under the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, or the clause at 52.232-10, Payments Under Fixed-Price Architect-Engineer Contracts, and interim payments on cost type contracts.

(2) For contracts that provide for contract financing, requests for payment shall be submitted to the designated billing office as specified in this contract or as directed by the Contracting Officer. Contract financing payments shall be made on the 30th day after receipt of a proper contract financing request by the designated billing office. In the event that an audit or other review of a specific financing request is required to ensure compliance with the terms and conditions of the contract, the designated payment office is not compelled to make payment by the due date specified.

(3) For advance payments, loans, or other arrangements that do not involve recurrent submissions of contract financing requests, payment shall be made in accordance with the corresponding contract terms or as directed by the Contracting Officer.

(4) Contract financing payments shall not be assessed an interest penalty for payment delays.

(c) If this contract contains the clause at 52.213-1, Fast Payment Procedure, payments will be made within 15 days after the date of receipt of the invoice.

#### I.12 BANKRUPTCY (FAR 52.242-13) (APR 1991)

In the event the Contractor enters into proceedings relating to bankruptcy, whether voluntary or involuntary, the Contractor agrees to furnish, by certified mail, written notification of the bankruptcy to the Contracting Officer responsible for administering the contract. This notification shall be furnished within five days of the initiation of the proceedings relating to bankruptcy filing. This notification shall include the date on which the bankruptcy petition was filed, the identity of the court in which the bankruptcy petition was filed, and a listing of Government contract numbers and contracting offices for all Government contracts against which final payment has not been made. This obligation remains in effect until final payment under this contract.

#### I.13 AUTHORIZED DEVIATIONS IN CLAUSES (FAR 52.252-6) (APR 1984)

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

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

#### I.14 SECURITY CLASSIFICATION REQUIREMENTS (NASA 18-52.204-75) (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. See Federal Acquisition Regulation clause 52.204-2 in this contract and DD Form 254, Contract Security Classification Specification, Exhibit C.

I.15 SECURITY PLAN FOR UNCLASSIFIED FEDERAL COMPUTER SYSTEMS  
(NASA 18-52.204-78) (SEP 1993)

In addition to complying with any functional and technical security requirements set forth in the schedule and the clauses of this contract, the Contractor shall comply with the Security Plan For Unclassified Federal Computer Systems submitted pursuant to provision 18-52.204-77, Submission of Security Plan For Unclassified Federal Computer Systems, as approved by the Contracting Officer.

I.16 RESTRICTIONS ON PRINTING AND DUPLICATING (NASA 18-52.208-81)  
(AUG 1993)

(a) The Contractor shall reproduce any documentation required by this contract in accordance with the provisions of the Government Printing and Binding Regulations, No. 26, S. Pub 101-9, U.S. Government Printing Office, Washington DC, 20402, published by the Joint Committee on Printing, U.S. Congress.

(b) The Contractor shall not perform, or procure from any commercial source, any printing in connection with the performance of work under this contract. The term "printing" includes the processes of composition, platemaking, presswork, silk screen processes, binding, microform, and the end items of such processes and equipment.

(c) "Duplicating/copying" is not considered to be printing. It is material produced by duplicating equipment employing the lithographic process and automatic copy-processing or copier-duplicating machines employing electrostatic, thermal, or other copying processes not requiring the use of negatives or metal plates. The Contractor is authorized to duplicate production units provided the requirement does not exceed 5,000 production units of any one page or 25,000 units in the aggregate of multiple pages. Such plates may not exceed a maximum image size of 10-3/4 by 14-1/4 inches. A "production unit" is one sheet, size 8-1/2 x 11 inches (215 x 280mm), one side only, and one color ink.

(d) This clause does not preclude writing, editing, preparation of manuscript copy, or preparation of related illustrative material as a part of this contract, or administrative duplicating/copying (for example, necessary forms and instructional materials used by the Contractor to respond to the terms of the contract).

(e) Costs associated with printing or duplicating/copying in excess of the limits set forth above are unallowable without prior written approval of the Contracting Officer. If the Contractor has reason to believe that any activity required in fulfillment of the contract will necessitate any printing or substantial duplicating/copying, it immediately shall provide written notice to the Contracting Officer and request approval prior to proceeding with the activity. Requests will be processed by the Contracting Officer in accordance with the provisions of the Government Printing and Binding Regulations and NFS 18-8.802.

(f) The Contractor shall include in each subcontract which may involve a requirement for any printing and/or any duplicating/copying in excess of the limits specified in Paragraph (c) of this clause, a provision substantially the same as this clause, including this Paragraph (f).

I.17 LIMITATION OF FUTURE CONTRACTING (NASA 18-52.209-71) (DEC 1988)

(a) The Contracting Officer has determined that this acquisition may give rise to a potential organizational conflict of interest. Accordingly, the attention of

all prospective offerors is invited to FAR Subpart 9.5--Organizational Conflicts of Interest.

(b) The nature of this conflict is the Contractor will be required to design new simulator systems and devices which could be incorporated into a hardware supply solicitation to upgrade existing simulator capabilities. Consequently, the Contractor may be prohibited from proposing/bidding on any hardware supply efforts where the designs were prepared by the Contractor. The Contractor shall advise the Contracting Officer of any perceived conflict prior to execution of the work. Upon being so informed, or if the Contracting Officer independently identifies a potential organizational conflict, the Contracting Officer shall determine which of the following is in the best interest of the Government and so advise the Contractor:

(1) the Contractor shall perform as directed; or  
(2) the Contractor shall not perform the work and the work shall be obtained by the Government from another source.

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

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

(2) To the extent that the work under this contract requires access to proprietary, business confidential, or financial data of other companies, and as long as such data remains proprietary or confidential, the Contractor shall protect these data from unauthorized use and disclosure and agrees not to use them to compete with those other companies.

#### I.18 NASA SMALL DISADVANTAGED BUSINESS GOAL (NASA 18-52.219-76) (JUL 1991)

##### (a) Definitions.

"Historically Black Colleges and Universities," as used in this clause, means institutions determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2 and listed therein.

"Minority educational institutions," as used in this clause, means institutions meeting the criteria established in 34 CFR 607.2 by the Secretary of Education.

"Small disadvantaged business concern," as used in this clause, means a small business concern owned or controlled by individuals who are both socially and economically disadvantaged (within the meaning of section 8(a)(5) and (6) of the Small Business Act (15 U.S.C. 637 (a)(5) and (6)). For purposes of this clause, socially and economically disadvantaged individuals shall be deemed to include women.

(b) The NASA Administrator is required to ensure, to the fullest extent possible, that at least 8% of the total value of prime and subcontracts awarded in support of authorized programs, including the space station by the time operational status is obtained, is made available to small business concerns or

other organizations owned or controlled by socially and economically disadvantaged individuals (including women), Historically Black Colleges and Universities, and minority educational institutions.

(c) The Contractor hereby agrees to assist NASA in achieving this goal by using its best efforts to award subcontracts to small disadvantaged business concerns, Historically Black Colleges and Universities, and minority educational institutions, as defined in this clause, to the fullest extent consistent with efficient contract performance.

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

#### I.19 MINIMUM INSURANCE COVERAGE (NASA 18-52.228-75) (OCT 1988)

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

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

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

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

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

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

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

## I.20 TECHNICAL DIRECTION (NASA 18-52.242-70) (SEP 1993)

(a) Performance of the work under this contract is subject to the written technical direction of the Contracting Officer's Technical Representative (COTR), who shall be specifically appointed by the Contracting Officer in writing in accordance with NASA FAR Supplement 18-42.270. "Technical direction" means a directive to the Contractor that approves approaches, solutions, designs, or refinements; fills in details or otherwise completes the general description of work or documentation items; shifts emphasis among work areas or tasks; or furnishes similar instruction to the Contractor. Technical direction includes requiring studies and pursuit of certain lines of inquiry regarding matters within the general tasks and requirements in Section C of this contract.

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

(1) Constitutes an assignment of additional work outside the statement of work;

(2) Constitutes a change as defined in the changes clause;

(3) In any manner causes an increase or decrease in the total estimated contract cost, the fixed fee (if any), or the time required for contract performance;

(4) Changes any of the expressed terms, conditions, or specifications of the contract; or

(5) Interferes with the Contractor's rights to perform the terms and conditions of the contract.

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

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

(1) Rescinded in its entirety; or

(2) Within the requirements of the contract and does not constitute a change under the changes clause of the contract and that the Contractor should proceed promptly its performance.

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

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



I.21 FINANCIAL REPORTING OF GOVERNMENT-OWNED/CONTRACTOR-HELD PROPERTY  
(NASA 18-52.245-73) (MAR 1989)

(a) The Contractor shall prepare and submit annually a NASA Form 1018, Report of Government-Owned/Contractor-Held Property, in accordance with 18-45.505-14 and the instructions on the form and in Section 18-45.7101 of the NASA FAR Supplement, except that the reporting of space hardware shall be required only as directed in clause 18-52.245-78, Space Hardware Reporting, if applicable.

(b) If administration of this contract has been delegated to the Department of Defense, the original and three copies of NASA Form 1018 shall be submitted through the DOD Property Administrator to the NASA office identified below. If the contract is administered by NASA, the forms shall be submitted directly to the following NASA office:

NASA, Langley Research Center  
Attn: Industrial Property Office, M/S 377  
Hampton, VA 23681-0001

(c) The annual reporting period shall be from July 1 of each year to June 30 of the following year.

(d) The Contractor agrees to insert the reporting requirement in all first-tier subcontracts, except that the requirement shall provide for the submission of the subcontractors' reports to the Contractor, not to the Government. The Contractor shall require the subcontractors' reports to be submitted in sufficient time to meet the reporting date in paragraph (c) above.

(e) The Contractor's report shall consist of a consolidation of the subcontractors' reports and the Contractor's own report.

## PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

- Exhibit A Contract Documentation Requirements, 7 pages
- Exhibit B Register of Wage Determination and Fringe Benefits, October 28, 1993, 11 pages
- Exhibit C Contract Security Classification Specification, DD Form 254, 2 pages
- Exhibit D Installation-Provided Government Property, 1 page
- Exhibit E Subcontracting Plan, 199 , pages  
(To be provided by Contractor, if large business, and will be included at time of award.)
- Exhibit F Procedures for the Preparation and Approval of Contractor Reports for Langley Research Center, Form PROC./P-72, May 1992, 4 pages
- Exhibit G Warning-Radiation Document, 1 page

The following are located after the last section of this solicitation:

- Attachment 1 Certificate of Current Cost or Pricing Data, Form PROC./P-281, May 1986, 1 page
- Attachment 2 Contract Pricing Proposal Cover Sheet, Standard Form 1411, July 1987 with instructions, 4 pages
- Attachment 3 FAR Provision 52.203-8, Requirement for Certificate of Procurement Integrity (NOV 1990) Alternate I (SEP 1990), 2 pages
- Attachment 4 Cost Proposal Forms A-C, 4 pages
- Attachment 5 Government Estimated Staffing Requirements and Minimum Position Qualifications, 6 pages
- Attachment 6 Key Personnel Minimum Requirements, 2 pages
- Attachment 7 Description of Langley Research Center's Advanced Real-Time Simulation System (ARTSS), 9 pages
- Attachment 8 Description of Typical Simulation Projects, 2 pages
- Attachment 9 Features of Hardware and Software Used to Control Simulation Programs, 3 pages
- Attachment 10 Specialized Computer Facilities and Peripheral Equipment, 4 pages

- Attachment 11 Advanced Real-Time Simulation System Equipment, 3 pages
- Attachment 12 Description of Terabit Eagle 1000 Graphics System; Silicon Graphics, Inc. Graphic Systems, 1 page
- Attachment 13 Description of Computer Generated Image Graphics Systems and Data Base Modeling System, 1 page
- Attachment 14 Description of Voice Communications System, 1 page

EXHIBIT A - CONTRACT DOCUMENTATION REQUIREMENTS

## I. DOCUMENTATION PREPARATION/SUBMISSION INSTRUCTIONS

A. Financial Management Reports--The Contractor shall comply with the Section I clause of this contract entitled "NASA Contractor Financial Management Reporting" by monthly submission of NASA Form 533M. The form shall be prepared and submitted in accordance with the instructions set forth on the reverse side of the form and NASA Handbook "Procedures for Contractor Reporting of Correlated Cost and Performance Data" (NHB 9501.2) as further definitized below.

1. Due not later than the 10th operating day following the close of the Contractor's accounting month being reported.

2. Columns 7.b. and d. shall be completed using the time-phased financial baseline plan approved as part of the Management and Operations Plan.

3. Columns 8.a. and b. shall be completed using estimates (forecasts) for the succeeding two months.

4. Minimum reporting categories:

(To Be Negotiated)

5. Each 533M shall include a narrative explanation for variances exceeding 10% percent between planned hours and dollars and actual hours and dollars for each reporting category.

6. A separate breakout of cost and manhours for individual simulation studies shall be provided as required.

B. Quarterly Financial Management Report--The Contractor shall submit a quarterly financial report detailed by categories specified in A.4 above on NASA Form 533Q at times and in accordance with the instructions contained on the reverse side of the form.

C. Management and Operations Plan--Within 45 calendar days after contract award, the Contractor shall submit for the Contracting Officer's approval a comprehensive Management and Operations Plan containing, as a minimum, the following:

1. Continuing Plan--Detailed plans for maintaining competent staffing at each organizational level. These plans shall include the methods to be employed in accommodating fluctuating workloads, for backup arrangements to accommodate personnel absences, for personnel training and for recruiting replacements and additional personnel. Include management policies which contribute to employee retention, morale, and productivity, such as career development, fringe benefits, leave, salary, employee recognition, and recognizing and correcting morale problems. Include company policies for the recruitment, hiring, training, and career development of individuals with disabilities. Also, include programs for motivating and incentivizing employees to continuously improve and increase productivity.

2. Technical Operations Plan--Plans for organizing, assigning resources, and performing each task area outlined in the Statement of Work; tracking and controlling the work; recognizing and reporting technical problems and schedule slippages and follow-up on reported problems. In addition, include a brief description of: the proposed method of controlling actual versus planned costs; procurement functions to be performed at the Contractor's facility/home office; your purchasing practices and procedures; plans for selecting, monitoring and administering any proposed subcontract effort; and plans for maintaining operational status of Contractor-furnished Items and Government-furnished Equipment.

3. Contractor's Facility--Location, general description, and interior layout of the facility, including lease and/or purchase agreements, the method planned for maintaining full operational capability of the facility.

4. Organization--An organization chart and narrative describing the proposed organization, Contractor/Government interfaces, lines of authority within the organization, and responsibilities and authority of the Key Personnel including a discussion of the proposed managerial authority, autonomy and relationship with the "home office," if applicable.

The Management and Operations Plan shall be updated as required during the contract performance by submission of revised pages for approval of the Contracting Officer.

D. Safety and Health Plan--Within 30 calendar days after the effective date of the contract, the Contractor shall submit a detailed safety and health plan showing how the Contractor intends to protect the life, health, and well being of NASA and Contractor employees as well as property and equipment. This plan, as approved by the Contracting Officer, should contain, as a minimum the following:

1. Points of Contact and Responsibility--Organizational flow chart and description of responsibilities of each employee in your organization for safety.

2. Employee Safety Training, Certification and Programs--Detailed information on type of training required, parties responsible for certification, and outline of applicable regulations. Detail company programs which emphasize personal safety and motivate employees to be safety conscious.

3. LaRC Safety Policies/Procedures--Recognition of applicable LaRC safety policies and procedures such as Langley Handbook 1710.10, LaRC Reg Tag System.

4. Accident Investigation and Reporting--Procedures for investigating and reporting accidents/incidents.

5. Health--Plans for insuring the audiograms required for performance of effort under this contract are obtained and maintained.

6. People with Disabilities--In accordance with the Americans with Disabilities Act, the plans should specify that prior to assigning a person with disabilities to this contract, the Contractor shall contact the Disability Program manager at (804) 864-7718.

7. Other Safety Considerations--Any other safety considerations unique to your operation.

E. Monthly Progress Report--The Contractor shall submit a monthly progress report detailing work progress and simulator usage. This report shall be submitted within 10 calendar days following the end of the reporting period.

F. Weekly Maintenance Malfunction Report--The Contractor shall submit a weekly written summary of equipment failures by work area within three operating days following the end of the reporting period.

G. Quarterly Accident/Injury Report--The Contractor shall submit a Quarterly Accident/Injury Report within 10 days after the end of each quarter.

H. Conformable Wage Rate Agreement--Within 15 days after the effective date of the contract, the Contractor shall submit a report confirming conformable wage rate agreement as this subject is addressed in the Section I clause entitled "Service Contract Act of 1965," for those individuals employed by the Contractor who are covered by the Service Contract Act, but are not listed in Exhibit B.

I. Report of Government-Owned/Contractor Held Property (NASA FORM 1018)--The Contractor shall submit the NASA Form 1018 no later than July 31 of each year in accordance with the Section I clause entitled "Financial Reporting of Government-owned/Contractor-held Property."

J. Documentation for Transferring Property to the Government

In accordance with the Installation-Provided Government Property clause of this contract, accountability for that property which is acquired for the Government under this contract shall be passed to the Government using the following procedure:

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

K. Subcontracting Reports--The Contractor shall submit Standard Form 294, Subcontracting Report for Individual Contracts, Standard Form 295, Summary Subcontractor Report, and NASA Form 667, Report on NASA Subcontracts, in accordance with the instructions on the reverse of the form. In addition to other instructions on the reverse of the SF 294, the Contractor is required to report awards to Women-Owned (W-O) business, Historically Black Colleges and Universities

(HBCUs) and other Minority Educational Institutions (MEIs). This information shall be detailed in Block 18 as follows:

Subcontract awards to small W-0 businesses this report period: \$

Subcontract awards to HBCUs and/or MEIs this reporting period: \$

The total subcontract dollars to W-0 businesses, HBCUs, and MEIs shall be included in Blocks 15A and 16.

In addition to the instructions on the reverse of the SF 295, the Contractor is required to comply with Clause 18-52.219-75, Small and Small Disadvantaged Subcontracting Reporting.

Pursuant to the contract clause entitled "Small Business and Small Disadvantaged Subcontracting Plan" (FAR 52.219-9 and 19.704(a)(5)), you are required to submit a letter progress report on a monthly basis. The "Monthly Progress Report for Socioeconomic Goals" shall be limited to the monthly data only (excluding cumulative data from beginning of Subcontract Plan) as required for Lines 15A, 15B, 15C, and 16 of the Standard Form 294. (See the sample in Section J, List of Attachments.) Letter progress reports may be signed by the Contract Administrator or equivalent organizational level, and each report is due by the 10th calendar day of the month following the close of the reporting period.

L. Skill Mix and Wage Report--Within 30 calendar days after the effective date of this contract, the Contractor shall furnish to the Government a skill mix and wage report that includes company position titles and current hourly rates. Unless new or additional, any company job titles that differ from the Government job titles specified in the RFP shall be cross-referenced to the Government job titles.

Within 30 calendar days after the end of each contract year, the Contractor shall furnish to the Government a follow-up report that includes the foregoing information plus the percentage (if any) each labor rate has escalated since the last report, an explanation by position of those escalations which exceed percent since the last report, and the amount of cash awards or bonuses (if any).

M. Technical Reports--When directed, the Contractor shall prepare formal technical reports conforming to the standards set forth in NASA Langley Form PROC./P-72, Procedures for the Preparation and Approval of Contractor Reports for Langley Research Center, Exhibit F.

NOTE: Approval copies shall be submitted to the COTR and notice of acceptance will be from the COTR in lieu of the Contracting Officer as specified in the PROC./P-72.

N. Federal Contractor Veterans Employment Report--In compliance with Clause 52.222-37, Employment Reports on Special 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.

O. Evidence of Insurance--The Contractor shall submit evidence of the insurance coverage, required by the NASA Clause 18-52.228-75 in Section I entitled "Minimum Insurance Coverage" (i.e., a Certificate of Insurance or other confirmation), to the Contracting Officer prior to performing under this contract. In the event the Government exercises its options to extend the term of the contract, the Contractor shall also present such evidence to the Contracting Officer prior to commencement of performance under the extension.

P. Virginia and Local Sales Taxes--In accordance with Section H.9, you are required to submit a copy of the letter sent to the Virginia Tax Commission and a copy of the subsequent response.

## 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 \_\_\_\_  
Contract NAS1-  
Hampton, VA 23681-0001

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

A--Contract Specialist, Mail Stop 126

B--Contracting Officer Technical Representative, Mail Stop

C--New Technology Representative, Mail Stop 200

D--Cost Accounting, Mail Stop 135

E--Safety Manager, Mail Stop 429

F--Programs and Resources Division, Mail Stop 104

G--Patent Counsel, Mail Stop 143

H--Industrial Property Office, Mail Stop 377

I--Management Resources Office, Mail Stop 105

J--According to instructions on form

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



<u>DOCUMENT</u>	<u>LETTER CODE AND DISTRIBUTION</u>
Financial Management Report (NASA Forms 533M and 533Q)	A-1, B-2, D-2, F-1, G-1
Management and Operations Plan and Revisions	A-2, B-5
Safety and Health Plan	A-1, B-1, E-1
Monthly Progress Report	A-1, B-3
Weekly Maintenance Malfunction Report	B-3
Quarterly Accident/Injury Report	A-1, B-1, E-1
Conformable Wage Rate Agreement	A-1, B-1, F-1
Technical Report (Approval Copies)	B-5
Technical Report (Approved)	B-1
Report of Government-Owned/Contractor Held Property (NASA Form 1018)	A-1, B-1, I-4
Subcontracting Report for Individual Contracts (Standard Form 294)	A-1
Summary Subcontractor Report (Standard Form 295)	A-1, I
Skill Mix and Wage Report	A-1
Federal Contractor Veterans Employment Report (VETS-100)	I-1
Evidence of Insurance	A-1
Virginia and Local Sales Tax Correspondence	A-1

D. When the Contract Administrator (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 Administrator. 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**

**REGISTER OF WAGE DETERMINATION AND FRINGE BENEFITS**

U.S. DEPARTMENT OF LABOR  
 EMPLOYMENT STANDARDS ADMINISTRATION  
 WAGE AND HOUR DIVISION  
 WASHINGTON, D.C. 20210

REGISTER OF WAGE DETERMINATIONS UNDER  
 THE SERVICE CONTRACT ACT  
 By direction of the Secretary of Labor

*Alan L. Moss*  
 Division of Determinations  
 Wage Determinations

Alan L. Moss  
 Director

Class of Service Employees

State: North Carolina, Virginia

Area: 5/

Wage Determination No.: 87-0211 (Rev. 14) Date: 10/28/1993

LOCALITY	Fringe Benefit Payments				
	Minimum Hourly Wage	Health & Welfare	Vacation	Holiday	Other

AUTOMATIC DATA PROCESSING OCCUPATIONS

1. Computer Data Librarian \$ 8.26
2. Computer Operator I \$ 8.26
3. Computer Operator II \$ 9.58
4. Computer Operator III \$ 11.83
5. Computer Operator IV \$ 13.70
6. Computer Operator V \$ 14.56
7. Computer Programmer I 1/ \$ 11.02
8. Computer Programmer II 1/ \$ 13.62
9. Computer Programmer III 1/ \$ 16.20
10. Computer Programmer IV 1/ \$ 19.39
11. Computer Systems Analyst I 1/ \$ 17.62
12. Computer Systems Analyst II 1/ \$ 20.28
13. Computer Systems Analyst III 1/ \$ 23.23
14. Peripheral Equipment Operator \$ 8.26

INFORMATION AND ARTS OCCUPATIONS

1. Audiovisual Librarian \$ 14.56
2. Exhibits Specialist I \$ 13.06
3. Exhibits Specialist II \$ 15.87
4. Exhibits Specialist III \$ 17.63
5. Exhibits Specialist I \$ 13.06

U.S. DEPARTMENT OF LABOR  
EMPLOYMENT STANDARDS ADMINISTRATION  
WAGE AND HOUR DIVISION  
WASHINGTON, D.C. 20210

REGISTER OF WAGE DETERMINATIONS UNDER  
THE SERVICE CONTRACT ACT  
By direction of the Secretary of Labor

*Alan L. Moss*

Alan L. Moss  
Director  
Division of  
Wage Determinations

Class of Service Employees

- 6. Illustrator II
- 7. Illustrator III
- 8. Library Technician
- 9. Photographer I
- 10. Photographer II
- 11. Photographer III
- 12. Photographer IV
- 13. Photographer V

TECHNICAL OCCUPATIONS

- 1. Archeological Technician
- 2. Cartographic Technician
- 3. Civil Engineering Technician
- 4. Drafter I
- 5. Drafter II
- 6. Drafter III
- 7. Drafter IV
- 8. Embalmer
- 9. Engineering Technician I
- 10. Engineering Technician II
- 11. Engineering Technician III
- 12. Engineering Technician IV
- 13. Engineering Technician V

- \$ 15.87
- \$ 15.87
- \$ 15.87
- \$ 9.24
- \$ 10.40
- \$ 13.06
- \$ 15.87
- \$ 17.63
- \$ 10.36
- \$ 11.63
- \$ 13.02
- \$ 16.12
- \$ 19.72

- \$ 15.87
- \$ 17.63
- \$ 11.02
- \$ 10.40
- \$ 13.06
- \$ 15.87
- \$ 17.63
- \$ 21.32

LOCALITY	State: North Carolina, Virginia			
	Area: 5/			
Wage Determination No.: 87-0211 (Rev. 14) Date: 10/28/1993				
Minimum Hourly Wage	Fringe Benefit Payments			
	Health & Welfare	Vacation	Holiday	Other

U.S. DEPARTMENT OF LABOR  
 EMPLOYMENT STANDARDS ADMINISTRATION  
 WAGE AND HOUR DIVISION  
 WASHINGTON, D.C. 20210

REGISTER OF WAGE DETERMINATIONS UNDER  
 THE SERVICE CONTRACT ACT  
 By direction of the Secretary of Labor

*Alan L. Moss*

Alan L. Moss  
 Director  
 Division of  
 Wage Determinations

Class of Service Employees

- 14. Engineering Technician VI
- 15. Environmental Technician
- 16. Laboratory Technician
- 17. Mathematical Technician
- 18. Mortician
- 19. Photooptics Technician
- 20. Technical Writer

\$ 23.86  
 \$ 15.87  
 \$ 11.83  
 \$ 15.87  
 \$ 17.63  
 \$ 15.87  
 \$ 19.39

\$ 17.63

- 1. Instructor

Fringe benefits applicable to all classes of service employees engaged in contract performance:

- 1/ Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See 29 CFR 4.156)
- 2/ HEALTH & WELFARE: Life, accident, and health insurance plans, sick leave, pension plans, civic and personal leave, severance pay, and savings and thrift plans: Employer contributions costing an average of \$2.39 per hour computed on the basis of all hours worked by service employees employed on the contract.

State: North Carolina, Virginia  
 Area: 5/  
 Wage Determination No.: 87-0211 (Rev. 14) Date: 10/28/1993

Minimum Hourly Wage	Fringe Benefit Payments			
	Health & Welfare	Vacation	Holiday	Other

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 Director Division of  
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Class of Service Employees

LOCALITY	State: North Carolina, Virginia		
	Area: 5/		
Wage Determination No.: 87-0211 (Rev. 14) Date: 10/28/1993			
Minimum Hourly Wage	Fringe Benefit Payments		
	Health & Welfare	Vacation	Holiday

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks for 10 years; 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present (successor) contractor, wherever employed, and with predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 4.173)

HOLIDAYS: 10 paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays other day off with pay in accordance with a plan communicated to the employees involved.)

NORTH CAROLINA:  
 Eden, Chowan, Currituck, Gates, Pasquotank, Perquimans

VIRGINIA:  
 Chesapeake, Gloucester, Hampton, Isle of Wight, James City, Mathews, Newport News, Norfolk, Portsmouth, Southampton, Suffolk, Surry, Virginia Beach, Williamsburg, York

NOTE: The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such unlisted classes of employees shall be paid the monetary wages and furnished the fringe benefits are determined. Such conforming procedures shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. A written report of the proposed conforming action, including information regarding the agreement or disagreement of the authorized representative of the employees involved or, where there is no authorized representative, the employees themselves, shall be submitted by the contractor to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work. The contracting officer shall review the proposed action and promptly submit a report of the action, together with the agencies' recommendation and all pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6 (b)(2) of Regulations 29 R 4)

IFORM ALLOWANCE: If employees are required to wear uniforms in the performance of this contract either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of an arbitrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.80 a week (or 76 cents a day); and effective April 1, 1991, the note shall be \$4.25 per week (or \$.85 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

WAGE DETERMINATION 87-0211 (Rev. 14)

DATE 10/28/1993

Page 6 of 6

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NOTE: The duties of employees under job titles listed are those described in the Service Contract Act Directory of Occupations, Fourth Edition, January 1993, unless otherwise indicated. See also 29 CFR Part 4 Section 4.152.



U.S. DEPARTMENT OF LABOR  
 EMPLOYMENT STANDARDS ADMINISTRATION  
 WAGE AND HOUR DIVISION  
 WASHINGTON, D.C. 20210

REGISTER OF WAGE DETERMINATIONS UNDER  
 THE SERVICE CONTRACT ACT  
 By direction of the Secretary of Labor

*Alan L. Moss*

Alan L. Moss Director  
 Division of Wage Determinations

LOCALITY	State: North Carolina, Virginia			
	Area: 4/			

Wage Determination No.: 87-0215 (Rev. 15) Date: 10/28/1993

Minimum Hourly Wage	Fringe Benefit Payments			
	Health & Welfare	Vacation	Holiday	Other

ADMINISTRATIVE SUPPORT AND CLERICAL OCCUPATIONSN

1. Accounting Clerk I
2. Accounting Clerk II
3. Accounting Clerk III
4. Accounting Clerk IV
5. Court Reporter
6. Dispatcher, Motor Vehicle
7. Document Preparation Clerk
8. Duplicating Machine Operator
9. File Clerk I
10. File Clerk II
11. File Clerk III
12. Film/Tape Librarian
13. Housing Referral Assistant
14. Key Entry Operator I
15. Key Entry Operator II
16. Mail Clerk
17. Messenger
18. Order Clerk I
19. Order Clerk II
20. Order Filler
21. Payroll Clerk
22. Production Control Clerk

- \$ 6.75
- \$ 8.52
- \$ 9.95
- \$ 10.75
- \$ 9.81
- \$ 8.03
- \$ 8.08
- \$ 8.08
- \$ 6.69
- \$ 7.01
- \$ 8.54
- \$ 8.46
- \$ 10.42
- \$ 7.32
- \$ 9.24
- \$ 8.08
- \$ 6.78
- \$ 7.32
- \$ 9.59
- \$ 8.46
- \$ 9.95
- \$ 10.42

U.S. DEPARTMENT OF LABOR  
 EMPLOYMENT STANDARDS ADMINISTRATION  
 WAGE AND HOUR DIVISION  
 WASHINGTON, D.C. 20210

REGISTER OF WAGE DETERMINATIONS UNDER  
 THE SERVICE CONTRACT ACT  
 By direction of the Secretary of Labor

*Alan L. Moss*

Alan L. Moss Director  
 Division of Wage Determinations

LOCALITY: \_\_\_\_\_  
 State: North Carolina, Virginia  
 Area: 4/

Wage Determination No.: 87-0215 (Rev. 15) Date: 10/28/1993

Minimum Hourly Wage	Fringe Benefit Payments			
	Health & Welfare	Vacation	Holiday	Other

- 23. Rental Clerk \$ 8.46
- 24. Scheduler, Maintenance \$ 8.46
- 25. Secretary I \$ 8.46
- 26. Secretary II \$ 9.81
- 27. Secretary III \$ 10.42
- 28. Secretary IV \$ 11.41
- 29. Secretary V \$ 11.96
- 30. Service Order Dispatcher \$ 8.46
- 31. Stenographer I \$ 8.78
- 32. Stenographer II \$ 9.86
- 33. Supply Technician \$ 10.00
- 34. Survey Worker (Interviewer) \$ 9.81
- 35. Switchboard Operator- Receptionist \$ 8.08
- 36. Typist I \$ 7.42
- 37. Typist II \$ 8.92
- 38. Word Processor I \$ 8.73
- 39. Word Processor II \$ 9.80
- 40. Word Processor III \$ 10.97

Fringe benefits applicable to all classes of service employees engaged in contract performance:

1/ 2/ 3/

NOTE: The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming procedures shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. A written report of the proposed conforming action, including information regarding the agreement or disagreement of the authorized representative of the employees involved or, where there is no authorized representative, the employees themselves, shall be submitted by the contractor to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work. The contracting officer shall review the proposed action and promptly submit a report of the action, together with the agencies' recommendation and all pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6 (b) (2) of Regulations 29 CFR 4)

**UNIFORM ALLOWANCE:** If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.80 a week (or 76 cents a day); and effective April 1, 1991, the note shall be \$4.25 per week (or \$.85 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

U.S. DEPARTMENT OF LABOR  
 EMPLOYMENT STANDARDS ADMINISTRATION  
 WAGE AND HOUR DIVISION  
 WASHINGTON, D.C. 20210

REGISTER OF WAGE DETERMINATIONS UNDER  
 THE SERVICE CONTRACT ACT  
 By direction of the Secretary of Labor



Alan L. Moss  
 Director  
 Division of  
 Wage Determinations

Class of Service Employees

LOCALITY

State: North Carolina, Virginia

Area: 4/

Wage Determination No.: 87-0215 (Rev. 15) Date: 10/28/1993

Minimum Hourly Wage	Fringe Benefit Payments			
	Health & Welfare	Vacation	Holiday	Other

1/ HEALTH & WELFARE: Life, accident, and health insurance plans, sick leave, pension plans, civic and personal leave, severance pay, and savings and thrift plans: Employer contributions costing an average of \$2.39 per hour computed on the basis of all hours worked by service employees employed on the contract.

2/ VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 10 years; 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present (successor) contractor, wherever employed, and with predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 4.173)

3/ HOLIDAYS: 10 paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.)

4/ NORTH CAROLINA:  
 Camden, Chowan, Currituck, Gates, Pasquotank, Perquimans

VIRGINIA:  
 Chesapeake, Gloucester, Hampton, Isle of Wight, James City, Mathews, Newport News, Norfolk, Poquoson, Portsmouth, Southampton, Suffolk, Surry, Virginia Beach, Williamsburg, York

TERMINATION 87-0215 (Rev. 15)

DATE 10/28/1993

Page 3 of 4

The duties of employees under job titles listed are those described in the Service Contract  
History of Occupations, Fourth Edition, January 1993, unless otherwise indicated. See also  
Part 4 Section 4.152.

EXHIBIT C  
CONTRACT SECURITY CLASSIFICATION SPECIFICATION

<b>DEPARTMENT OF DEFENSE</b> <b>CONTRACT SECURITY CLASSIFICATION SPECIFICATION</b> <i>(The requirements of the DoD Industrial Security Manual apply to all security aspects of this effort.)</i>	<b>1. CLEARANCE AND SAFEGUARDING</b> a. FACILITY CLEARANCE REQUIRED <b>SECRET</b> b. LEVEL OF SAFEGUARDING REQUIRED <b>NONE</b>
--	---

<b>2. THIS SPECIFICATION IS FOR:</b> <i>(X and complete as applicable)</i> a. PRIME CONTRACT NUMBER  b. SUBCONTRACT NUMBER  c. SOLICITATION OR OTHER NUMBER X      1-120-1150.3058      Due Date (YYYYDD)      2-1-95	<b>3. THIS SPECIFICATION IS:</b> <i>(X and complete as applicable)</i> a. ORIGINAL (Complete date in all cases)      Due Date (YYYYDD) b. REVISED (Supersedes all previous specs)      Revision No.      Due Date (YYYYDD) c. FINAL (Complete item 3 in all cases)      Due Date (YYYYDD)
---	--

4. IS THIS A FOLLOW-ON CONTRACT?     YES     NO    If Yes, complete the following:  
 Classified material received or generated under \_\_\_\_\_ (Preceding Contract Number) is transferred to the follow-on contract.

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 \_\_\_\_\_

<b>6. CONTRACTOR</b> <i>(Exclude Commercial and Government Entity (CAGE) Code)</i> a. NAME, ADDRESS, AND ZIP CODE N/A	b. CAGE CODE N/A	c. Cognizant Security Office (Name, Address, and Zip Code) N/A
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<b>7. SUBCONTRACTOR</b> a. NAME, ADDRESS, AND ZIP CODE N/A	b. CAGE CODE N/A	c. Cognizant Security Office (Name, Address, and Zip Code) N/A
--	---------------------	---

<b>8. ACTUAL PERFORMANCE</b> a. LOCATION NASA Langly Research Center Hampton Va. 23665-5225	b. CAGE CODE N/A	c. Cognizant Security Office (Name, Address, and Zip Code) Defense Investigative Service 2461 Eisenhower Ave. Alexandria, Va 22331
--	---------------------	---

**9. GENERAL IDENTIFICATION OF THIS PROCUREMENT**  
 FLIGHT SIMULATION SUPPORT SERVICES

10. THIS CONTRACT WILL REQUIRE ACCESS	YES	NC	11. IN PERFORMING THIS CONTRACT, THE CONTRACTOR WILL:	YES	NC
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		X	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 TEMPEST REQUIREMENTS		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)		
k. OTHER (Specify)			CLASSIFIED ADP PROCESSING WILL BE INVOLVED	X	

**12. PUBLIC RELEASE.** Any information (classified or unclassified) pertaining to this contract shall not be released for public dissemination except as provided by the 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.

Direct  Through (Specify):

**NO PUBLIC RELEASE AUTHORIZED**

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

**13. SECURITY GUIDANCE.** The security classification guidance needed for the classified 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 of the 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 documents quoted extracts referenced herein. Add additional pages as needed to provide complete guidance.)

This document serves as written notice of the letting of a classified service contract. The highest level of classification for the contract is SECRET.

The contractor has no performance requirements involving actual generation or production of classified material for Langly Research Center, however there is a need for access to classified information to work on assigned task under the contract.

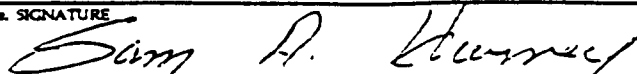
**14. ADDITIONAL SECURITY REQUIREMENTS.** Requirements, in addition to ISM requirements, are established for this contract. (If yes, identify the pertinent contractual clauses in the contract document itself, or provide an appropriate statement which identifies additional requirements. Provide a copy 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 <b>Sam A. Harvey</b>	b. TITLE <b>Program Security Team Leader</b>	c. TELEPHONE (Include Area Code) <b>804-864-6507</b>
--	--	---

d. ADDRESS (Include Zip Code)  
**NASA Langly Reseach Ceter  
 MS 182  
 Hampton Va. 23665-5225**

e. SIGNATURE  


**17. REQUIRED DISTRIBUTION**

<input checked="" type="checkbox"/>	a. CONTRACTOR
<input type="checkbox"/>	b. SUBCONTRACTOR
<input checked="" type="checkbox"/>	c. COGNIZANT SECURITY OFFICE FOR PRIME AND SUBCONTRACTOR
<input type="checkbox"/>	d. U. S. ACTIVITY RESPONSIBLE FOR OVERSEAS SECURITY ADMINISTRATION
<input checked="" type="checkbox"/>	e. ADMINISTRATIVE CONTRACTING OFFICER
<input checked="" type="checkbox"/>	f. OTHERS AS NECESSARY



**EXHIBIT D**  
**INSTALLATION-PROVIDED GOVERNMENT PROPERTY**

## EXHIBIT D

## INSTALLATION PROVIDED GOVERNMENT PROPERTY

1 ANALYZER, SERVO  
1 CALCULATOR, ELECTRONIC  
1 CAMERA, OSCILLOSCOPE  
61 COMPUTER, MICRO  
2 CONVERTER, FREQUENCY  
1 DIGITIZER  
2 DISK DRIVE UNIT  
63 DISPLAY UNIT  
1 GENERATOR, PULSE  
1 GENERATOR, FUNCTION  
4 MICROPROCESSOR  
8 MONITOR, TELEVISION  
1 MONITOR, DISPLAY, VIDEO  
18 MULTIMETER, DIGITAL  
1 OSCILLOGRAPH  
4 OSCILLOSCOPE, GENERAL PURPOSE  
9 OSCILLOSCOPE, PORTABLE  
1 OSCILLOSCOPE/MULTIMETER, DIGITAL  
1 OSCILLOSCOPE, DUAL TRACE  
1 PLOTTER, DIGITAL, INPUT  
2 PLOTTER, ANALOG INPUT  
1 PLOTTER, GRAPHICS  
2 PLUG-IN, AMPLIFIER, OSCILLOSCOPE  
1 PLUG-IN, INTERFACE, REFLECTOMETER  
2 PLUG-IN, TIME BASE, OSCILLOSCOPE  
1 POWER SUPPLY, SPECIAL PURPOSE  
48 PRINTER, ADP  
1 PROGRAMMER, PROM  
2 RECEIVER, RADIO  
1 RECORDER, TAPE, AUDIO  
1 RECORDER, HARD COPY  
1 RECORDER-REPRODUCER SET, SOUND  
1 REFLECTOMETER  
1 SCANNER, COMPUTER  
1 SYSTEM, MICROPROCESSOR DEVELOPMENT  
12 TERMINAL, DATA PROCESSING  
1 TESTER, LOGIC MODULE  
10 TOOL SET, ASSORTED  
2 VOLTMETER, DIFFERENTIAL  
1 VOLTMETER, DIGITAL

EXHIBIT E  
SUBCONTRACTING PLAN

EXHIBIT F

PROCEDURES FOR PREPARATION AND APPROVAL OF CONTRACTOR REPORTS FOR  
LANGLEY RESEARCH CENTER

PROCEDURES FOR THE PREPARATION AND APPROVAL OF CONTRACTOR  
REPORTS FOR LANGLEY RESEARCH CENTER

**GUIDELINES.** - The following documents or subsequent editions in effect on date of contract shall serve as the basis for preparation of Contractor Reports:

NASA SP-7047 NASA Publications Guide  
DoD 5220.22-M Industrial Security Manual for Safeguarding Classified  
Information, January 1991

**NOTE:** Copies of NASA SP-7047 will be furnished by the Contracting Officer upon request.

**FORMAT AND ORGANIZATION.** - The format and organization of a Contractor Report should be consistent and follow the practices recommended in the NASA Publications Guide (NASA SP-7047). For questions concerning format, contact Langley Technical Editing Branch at (804) 864-2518. **An original Report Documentation Page (Standard Form 298) shall be included as the last page in the report.** (The instructions on the back of the form shall not appear in the printed report.) A reproducible copy of this form will be furnished to you with your copy of the executed contract.

**TRADEMARKS.** - U.S. Government policy prohibits endorsing or criticizing commercial products in its publications. Use of trademarks is discouraged. If a trademark must be used, its owner must be credited and the trademark must be used as an adjective modifying the generic name.

**REFERENCES.** - Material that is not obtainable or available must not be listed in the references. Documents of NASA contracts published as in-house documents must be referenced as NASA CR's, not as NASA Contract Numbers.

**SECURITY.** - Security markings, when necessary, shall be consistent with DD Form 254, the directive issued by the Security Classification Officer, and shall conform to requirements established in the DoD Industrial Security Manual. For questions concerning security classification, contact LaRC Security Classification Officer at (804) 864-3415.

**APPROVAL COPIES.**

1. Upon completion of a report, the Contractor shall submit five (5) approval copies to the Contracting Officer for review and approval by NASA. These copies may be reproduced and assembled by an economical means by the Contractor.
2. The Contractor will be notified of acceptance of the approval copy of the report by the Contracting Officer within sixty (60) days. Approval will be contingent upon changes required by NASA. An original master copy in agreement with the approval copy shall be prepared and submitted by the Contractor.

**ORIGINAL MANUSCRIPT.** - The original manuscript of a Contractor Report shall consist of a one-sided master copy of the text, cleanly typed on opaque white paper, from which negatives and printing plates can be made, unscreened glossy prints of photographs, and original artwork of a quality suitable for reproduction



b. Any image that cannot be accommodated by a foldout (as described in paragraph 2 herein) will be produced by the diazo or electrostatic method in a size dictated by legibility requirements.

2. The page image size of cover and text pages including headings will not exceed 7 1/8 x 9 1/8 inches. Page image including page number will not exceed 7 1/8 x 10 inches. Diagrams, charts, drawings, etc., shall be reduced and, if necessary, run broadside to eliminate oversized pages. If such reduction is too great for legibility, the subject will be split and run on two facing pages or run as a foldout with an image not larger than 14 x 9 1/2 inches.

3. Text and foldout pages will be on either of two paper stocks:

a. Offset book paper, white, substance 50 lbs. (basis 25 x 38/1000 sheets, Joint Committee on Printing (JCP) A60).

b. Chemical wood writing paper, white or colored, substance 20 lbs. (basis 17 x 22/1000 sheets, JCP G30).

4. Covers, if necessary, will be on either of two paper stocks:

a. Vellum finish (or antique finish) cover paper, white or colored, substance 50 lbs. (basis 20 x 26/1000 sheets, JCP L20).

b. Chemical wood index paper, white or colored, substance 110 lbs. (basis 25 1/2 x 30 1/2/1000 sheets, JCP K20).

5. Use of tabs is expensive and rarely necessary. First consideration should be given to the use of a contents page. Second choice should be bleed-edge index markers. If tabs must be used, they will be duplicated on one side only, on chemical wood index paper, white or colored, substance 110 lbs. (basis 25 1/2 x 30 1/2/1000 sheets); they will be angle cut and not die cut.

6. All duplicating will be in black ink. If other or additional color is required for a functional purpose, approval in writing must be obtained from the Langley Printing Management Officer (LPMO) through the Contracting Officer before preparation of final reproduction copy.

7. Text pages of all documents produced will be reproduced on both sides of sheet where feasible.

8. Binding will be by fastening with wire staples or stitches, either one in a corner or two in the binding margin. Documents too thick to staple or stitch will be produced in two or more volumes. Prong fasteners, binding screws, plastic combs, and spiral and similar wire fasteners add to production time and costs, and generally their use should be avoided.

9. Plastic protective sheets will not be used.

10. When hard-cover protection of a document is needed, the document will be drilled with three round 1/4 inch or 3/8 inch holes, 4 1/4 inches center-to-center, for insertion into standard 3-ring binders. Special stamped, printed or silk-screened binders shall not be used. A single corner staple or stitch or a band will be used to hold the document together until it is put into a binder.

**REPORT DOCUMENTATION PAGE**

Form Approved  
OMB No. 0704-0188

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1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE May 1991	3. REPORT TYPE AND DATES COVERED Contractor Report	
4. TITLE AND SUBTITLE Science Needs for Real-Time Adaptable Data Products From the Earth Observing System			5. FUNDING NUMBERS C NAS1-18676	
6. AUTHOR(S) Paul D. Try, Paul F. Twitchell, and Christopher R. Redder				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Science and Technology Corporation 101 Research Drive Hampton, VA 23666-1340			8. PERFORMING ORGANIZATION REPORT NUMBER STC-42518	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) National Aeronautics and Space Administration Langley Research Center Hampton, VA 23665-5225			10. SPONSORING/MONITORING AGENCY REPORT NUMBER NASA CR-0000	
11. SUPPLEMENTARY NOTES Langley Technical Monitor: David E. Bowker Final Report				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Unclassified Unlimited Subject Category 43			12b. DISTRIBUTION CODE <i>(If contract specifies restricted distribution, state restriction instead of Unclassified-Unlimited.)</i>	
13. ABSTRACT (Maximum 200 words) Advancing the understanding of the Earth system requires improved knowledge of the time-variant governing processes, and the knowledge of these processes often comes only from real-time observations of the changing variables as seen from space. The unpredictability of what is to be measured and at what rate requires flexibility in the observational capability. The Earth Observing System (EOS) will be a major source of observational data during the next 10- to 25-year timeframe. Consequently, to ensure the needed advances in the understanding of the Earth system, real-time onboard processing is concluded to be a critical need for EOS.  <i>(Provide an unclassified abstract not to exceed 200 words)</i>				
14. SUBJECT TERMS Real-time data needs; Onboard data processing; Real-time processing for EOS; EOS communication needs			15. NUMBER OF PAGES 76	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	



EXHIBIT G  
WARNING-RADIATION DOCUMENT

## EXHIBIT G

## WARNING-RADIATION DOCUMENT

High intensity TV projection systems present a potential hazard due to X-ray radiation. Two systems are currently used that operated at 35 kilovolts. These systems are so shielded that during normal operation the area in which they are used may be classified as an unrestricted area (less than 2.0 millirem per hour). The possibility does exist, however, that during maintenance and/or modification a worker may bypass the shielding and thereby risk exposure to potentially harmful levels.

The Contractor shall be fully aware of the nature of this hazard and shall institute whatever practices are necessary to acquaint his workers with the hazard and to provide for their safety. The Contractor shall be thoroughly familiar with applicable contents of Title 19, Code of Federal Regulations, Part 20, entitled "Standards for Protection Against Radiation." This document is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

The Contractor shall provide all administrative effort required for educating and monitoring of his personnel.

## PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION K - REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORSK.1 CONTINGENT FEE REPRESENTATION AND AGREEMENT (FAR 52.203-4)  
(APR 1984)

(a) Representation. The offeror represents that, except for full-time bona fide employees working solely for the offeror, the offeror -

(NOTE: The offeror must check the appropriate boxes. For interpretation of the representation, including the term "bona fide employee", see Subpart 3.4 or the Federal Acquisition Regulation.)

(1) ( ) has, ( ) has not, employed or retained any person or company to solicit or obtain this contract; and

(2) ( ) has, ( ) has not, paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(b) Agreement. The offeror agrees to provide information relating to the above Representation as requested by the Contracting Officer and, when subparagraph (a)(1) or (a)(2) is answered affirmatively, to promptly submit to the Contracting Officer -

(1) A completed Standard Form 119, Statement of Contingent or Other Fees, (SF 119); or

(2) A signed statement indicating that the SF 119 was previously submitted to the same contracting office, including the date and applicable solicitation or contract number, and representing that the prior SF 119 applies to this offer or quotation.

K.2 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE  
CERTAIN FEDERAL TRANSACTIONS (FAR 52.203-11) (APR 1991)

(a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief, that on or after December 23, 1989, -

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of

any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

### K.3 TAXPAYER IDENTIFICATION (FAR 52.204-3) (SEP 1992)

#### (a) Definitions.

"Common parent," as used in this solicitation provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Corporate status," as used in this solicitation provision, means a designation as to whether the offeror is a corporate entity, an unincorporated entity (e.g., sole proprietorship or partnership), or a corporation providing medical and health care services.

"Taxpayer Identification Number (TIN)," as used in this solicitation provision, means the number required by the IRS to be used by the offeror in reporting income tax and other returns.

(b) All offerors are required to submit the information required in paragraphs (c) through (e) of this solicitation provision in order to comply with reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M and implementing regulations issued by the Internal Revenue Service (IRS). If the resulting contract is subject to the reporting requirements described in 4.903, the failure or refusal by the offeror to furnish the information may result in a 20 percent reduction of payments otherwise due under the contract.

#### (c) Taxpayer Identification Number (TIN).

TIN: \_\_\_\_\_

TIN has been applied for.

TIN is not required because:

Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the U.S. and does not have an office or place of business or a fiscal paying agent in the U.S.;

Offeror is an agency or instrumentality of a foreign government;

Offeror is an agency or instrumentality of a Federal, state, or local government;

Other. State basis. \_\_\_\_\_

#### (d) Corporate Status.

Corporation providing medical and health care services, or engaged in the billing and collecting of payments of such services;

- Other corporate entity;
- Not a corporate entity;
- Sole proprietorship
- Partnership
- Hospital or extended care facility described in 26 CFR 501(c)(3) that is exempt from taxation under 26 CFR 501(a).
- (e) Common Parent.
  - Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this clause.
  - Name and TIN of common parent:

Name \_\_\_\_\_

TIN \_\_\_\_\_

**K.4 CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (FAR 52.209-5) (MAY 1989)**

- (a)(1) The Offeror certifies, to the best of its knowledge and belief, that -
  - (i) The Offeror and/or any of its Principals -
    - (A) Are  are not  presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;
    - (B) Have  have not , within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and
    - (C) Are  are not  presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(i)(B) of this provision.
  - (ii) The Offeror has  has not , within a three-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.

(2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER SECTION 1001, TITLE 18, UNITED STATES CODE.

- (b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

(d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

#### K.5 TYPE OF BUSINESS ORGANIZATION (FAR 52.215-6) (JUL 1987)

The offeror or quoter, by checking the applicable box, represents that -

(a) It operates as ( ) a corporation incorporated under the laws of the State of \_\_\_\_\_, ( ) an individual, ( ) a partnership, ( ) a nonprofit organization, or ( ) a joint venture; or

(b) If the offeror or quoter is a foreign entity, it operates as ( ) an individual, ( ) a partnership, ( ) a nonprofit organization, ( ) a joint venture, or ( ) a corporation, registered for business in \_\_\_\_\_ country.

#### K.6 AUTHORIZED NEGOTIATORS (FAR 52.215-11) (APR 1984)

The offeror or quoter represents that the following persons are authorized to negotiate on its behalf with the Government in connection with this request for proposals or quotations: (list names, titles, and telephone numbers of the authorized negotiators).

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#### K.7 PERIOD FOR ACCEPTANCE OF OFFER (FAR 52.215-19) (APR 1984)

In compliance with the solicitation, the offeror agrees, if this offer is accepted within \_\_\_\_\_ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date specified in the solicitation for receipt of offers, to furnish any or all items on which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the Schedule.

#### K.8 SMALL BUSINESS CONCERN REPRESENTATION (FAR 52.219-1) (JAN 1991)

(a) Representation. The offeror represents and certifies as part of its offer that it ( ) is, ( ) is not a small business concern and that ( ) all, ( ) not all end items to be furnished will be manufactured or produced by a small business

concern in the United States, its territories or possessions, Puerto Rico, or the Trust Territory of the Pacific Islands.

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

(c) Notice. Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small business concern in order to obtain a contract to be awarded under the preference programs established pursuant to sections 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall -

- (1) be punished by imposition of fine, imprisonment, or both;
- (2) be subject to administrative remedies, including suspension and debarment; and
- (3) be ineligible for participation in programs conducted under the authority of the Act.

#### K.9 SMALL DISADVANTAGED BUSINESS CONCERN REPRESENTATION (FAR 52.219-2) (FEB 1990)

(a) Representation. The offeror represents that it ( ) is, ( ) is not a small disadvantaged business concern.

(b) Definitions.

"Asian-Pacific Americans," as used in this provision, means United States citizens whose origins are in Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territory of the Pacific Islands (Republic of Palau), the Northern Mariana Islands, Laos, Kampuchea (Cambodia), Taiwan, Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Republic of the Marshall Islands, or the Federated States of Micronesia.

"Indian tribe," as used in this provision, means any Indian tribe, band, nation, or other organized group or community of Indians, including any Alaska Native Corporation as defined in 13 CFR 124.100 which is recognized as eligible for the special programs and services provided by the U.S. to Indians because of their status as Indians, or which is recognized as such by the State in which such tribe, band, nation, group, or community resides.

"Native Americans," as used in this provision, means American Indians, Eskimos, Aleuts, and native Hawaiians.

"Native Hawaiian Organization," as used in this provision, means any community service organization serving Native Hawaiians in, and chartered as a not-for-profit organization by, the State of Hawaii, which is controlled by Native Hawaiians, and whose business activities will principally benefit such Native Hawaiians.

"Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

"Small disadvantaged business concern," as used in this provision, means a small business concern that (a) is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals and (b)

has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian Organization, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one of these entities which has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian Organization, and which meets the requirements of 13 CFR 124.

"Subcontinent Asian Americans," as used in this provision, means United States citizens whose origins are in India, Pakistan, Bangladesh, Sri Lanka, Bhutan, or Nepal.

(c) Qualified groups. The offeror shall presume that socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, and other individuals found to be qualified by SBA under 13 CFR 124. The offeror shall also presume that socially and economically disadvantaged entities also include Indian tribes and Native Hawaiian Organizations.

**K.10 WOMEN-OWNED SMALL BUSINESS REPRESENTATION (FAR 52.219-3)  
(APR 1984)**

(a) Representation. The offeror represents that it ( ) is, ( ) is not, a women-owned small business concern.

(b) Definitions.

"Small business concern", as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria and size standards in 13 CFR 121.

"Women-owned", as used in this provision, means a small business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

**K.11 PREFERENCE FOR LABOR SURPLUS AREA CONCERNS (FAR 52.220-1)  
(APR 1984)**

(a) This acquisition is not a set aside for labor surplus area (LSA) concerns. However, the offeror's status as such a concern may affect (1) entitlement to award in case of tie offers or (2) offer evaluation in accordance with the Buy American Act clause of this solicitation. In order to determine whether the offeror is entitled to a preference under (1) or (2) above, the offeror must identify, below, the LSA in which the costs to be incurred on account of manufacturing or production (by the offeror or the first-tier subcontractors) amount to more than 50 percent of the contract price.

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(b) Failure to identify the locations as specified above will preclude consideration of the offeror as an LSA concern. If the offeror is awarded a contract as an LSA concern and would not have otherwise qualified for award, the offeror shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.



K.12 CERTIFICATION OF NONSEGREGATED FACILITIES (FAR 52.222-21)  
(APR 1984)

(a) "Segregated facilities", as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(b) By the submission of this offer, the offeror certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The offeror agrees that a breach of this certification is a violation of the Equal Opportunity clause in the contract.

(c) The offeror further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will -

(1) Obtain identical certifications from proposed subcontractors before the award of subcontracts under which the subcontractor will be subject to the Equal Opportunity clause;

(2) Retain the certifications in the files; and

(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENT FOR  
CERTIFICATIONS OF NONSEGREGATED FACILITIES

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract under which the subcontractor will be subject to the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

K.13 PREVIOUS CONTRACTS AND COMPLIANCE REPORTS (FAR 52.222-22)  
(APR 1984)

The offeror represents that -

(a) It ( ) has, ( ) has not, participated in a previous contract or subcontract subject either to the Equal Opportunity clause of this solicitation, the clause originally contained in Section 310 of Executive Order No. 10925, or the clause contained in Section 201 of Executive Order No. 11114;

(b) It ( ) has, ( ) has not, filed all required compliance reports; and

(c) Representations indicating submission of required compliance reports, signed by proposed subcontractors, will be obtained before subcontract awards.

## K.14 AFFIRMATIVE ACTION COMPLIANCE (FAR 52.222-25) (APR 1984)

The offeror represents that (a) it ( ) has developed and has on file, ( ) has not developed and does not have on file, at each establishment, affirmative action programs required by the rules and regulations of the Secretary of Labor (41 CFR 60-1 and 60-2), or (b) it ( ) has not previously had contracts subject to the written affirmative action programs requirement of the rules and regulations of the Secretary of Labor.

## K.15 CLEAN AIR AND WATER CERTIFICATION (FAR 52.223-1) (APR 1984)

The offeror certifies that -

- (a) Any facility to be used in the performance of this proposed contract ( ) is, ( ) is not, listed on the Environmental Protection Agency List of Violating Facilities;
- (b) The offeror will immediately notify the Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the offeror proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and
- (c) The offeror will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

K.16 CERTIFICATION REGARDING A DRUG-FREE WORKPLACE (FAR 52.223-5)  
(JUL 1990)

- (a) Definitions. As used in this provision,

"Controlled substance" means a controlled substance in Schedules I through V of Section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined in regulation at 21 CFR 1308.11 - 1308.15.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the Contractor in connection with a specific contract at which employees of the Contractor are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a Contractor directly engaged in the performance of work under a Government contract. "Directly engaged" is defined to include all direct cost employees and any other Contractor employee who has other than minimal impact or involvement in contract performance.

"Individual" means an offeror/Contractor that has no more than one employee including the offeror/Contractor.

- (b) By submission of its offer, the offeror, if other than an individual, who is making an offer that equals or exceeds \$25,000, certifies and agrees that, with respect to all employees of the offeror to be employed under a contract resulting from this solicitation, it will - no later than 30 calendar days after contract award (unless a longer period is agreed to in writing), for contracts of 30

calendar days or more performance duration, or as soon as possible for contracts of less than 30 calendar days performance duration; but in any case, by a date prior to when performance is expected to be completed -

(1) Publish a statement notifying such employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the Contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition;

(2) Establish an ongoing drug-free awareness program to inform such employees about -

(i) The dangers of drug abuse in the workplace;

(ii) The Contractor's policy of maintaining a drug-free workplace;

(iii) Any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(3) Provide all employees engaged in performance of the contract with a copy of the statement required by subparagraph (b)(1) of this provision;

(4) Notify such employees in writing in the statement required by subparagraph (b)(1) of this provision that, as a condition of continued employment on the contract resulting from this solicitation, the employee will -

(i) Abide by the terms of the statement; and

(ii) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than 5 calendar days after such conviction;

(5) Notify the Contracting Officer in writing within 10 calendar days after receiving notice under subdivision (b)(4)(ii) of this provision, from an employee or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee; and

(6) Within 30 calendar days after receiving notice under subdivision (b)(4)(ii) of this provision of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:

(i) Take appropriate personnel action against such employee, up to and including termination; or

(ii) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.

(7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (b)(1) through (b)(6) of this provision.

(c) By submission of its offer, the offeror, if an individual who is making an offer of any dollar value, certifies and agrees that the offeror will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in the performance of the contract resulting from this solicitation.

(d) Failure of the offeror to provide the certification required by paragraphs (b) or (c) of this provision, renders the offeror unqualified and ineligible for award. (See FAR 9.104-1(g) and 19.602-1(a)(2)(i).)

(e) In addition to other remedies available to the Government, the certification in paragraphs (b) or (c) of this provision concerns a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

K.17 BUY AMERICAN CERTIFICATE (FAR 52.225-1) (DEC 1989)

The offeror certifies that each end product, except those listed below, is a domestic end product (as defined in the clause entitled "Buy American Act - Supplies"), and that components of unknown origin are considered to have been mined, produced, or manufactured outside the United States.

Excluded End Products	Country of Origin
-	

(List as necessary)

Offerors may obtain from the Contracting Officer lists of articles, materials, and supplies excepted from the Buy American Act.

K.18 REPRESENTATION OF LIMITED RIGHTS DATA AND RESTRICTED COMPUTER SOFTWARE (FAR 52.227-15) (JUN 1987)

(a) This solicitation sets forth the work to be performed if a contract award results, and the Government's known delivery requirements for data (as defined in FAR 27.401). Any resulting contract may also provide the Government the option to order additional data under the Additional Data Requirements clause at 52.227-16 of the FAR, if included in the contract. Any data delivered under the resulting contract will be subject to the Rights in Data - General clause at 52.227-14 that is to be included in this contract. Under the latter clause, a Contractor may withhold from delivery data that qualify as limited rights data or restricted computer software, and deliver form, fit, and function data in lieu thereof. The latter clause also may be used with its Alternates II and/or III to obtain delivery of limited rights data or restricted computer software, marked with limited rights or restricted rights notices, as appropriate. In addition, use of Alternate V with this latter clause provides the Government the right to inspect such data at the Contractor's facility.

(b) As an aid in determining the Government's need to include any of the aforementioned Alternates in the clause at 52.227-14, Rights in Data - General, the offeror's response to this solicitation shall, to the extent feasible, complete the representation in paragraph (b) of this provision to either state that none of the data qualify as limited rights data or restricted computer software, or identify which of the data qualifies as limited rights data or restricted computer software. Any identification of limited rights data or restricted computer software in the offeror's response is not determinative of the status of such data should a contract be awarded to the offeror.

REPRESENTATION CONCERNING DATA RIGHTS

Offeror has reviewed the requirements for the delivery of data or software and states (offeror check appropriate block) -

- ( ) None of the data proposed for fulfilling such requirements qualifies as limited rights data or restricted computer software.
- ( ) Data proposed for fulfilling such requirements qualify as limited rights data or restricted computer software and are identified as follows:

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NOTE: "Limited rights data" and "Restricted computer software" are defined in the contract clause entitled "Rights in Data - General."

**K.19 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION  
(NATIONAL DEFENSE 52.230-1) (AUG 1992)**

NOTE: This notice does not apply to small businesses or foreign governments. This notice is in four parts, identified by Roman numerals I. through IV. Offerors shall examine each part and provide the requested information in order to determine Cost Accounting Standards (CAS) requirements applicable to any resultant contract.

**I. Disclosure Statement - Cost Accounting Practices and Certification**

(a) Any contract in excess of \$500,000 resulting from this solicitation, except contracts in which the price negotiated is based on (1) established catalog or market prices of commercial items sold in substantial quantities to the general public, or (2) prices set by law or regulation, will be subject to the requirements of parts 9903 and 9904, except for those contracts which are exempt as specified in 9903-201-1.

(b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of parts 9904 and 9904 must, as a condition of contracting, submit a Disclosure Statement as required by 9903.202. The Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practice used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to practice for pricing proposals or accumulating and reporting contract performance cost data.

(c) Check the appropriate box below:

- ( ) (1) Certificate of Concurrent Submission of Disclosure Statement.

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (i) original and one copy to the cognizant Administrative Contracting Officer (ACO), and (ii) one copy to the cognizant contract auditor.

(Disclosure must be on Form Number CASB-DS-1. Forms may be obtained from the cognizant ACO.)

Date of Disclosure Statement \_\_\_\_\_

Name and Address of Cognizant ACO where filed \_\_\_\_\_

---

The offeror further certifies that practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

(2) Certificate of Previously Submitted Disclosure Statement.

The offeror hereby certifies that Disclosure Statement was filed as follows:

Date of Disclosure Statement \_\_\_\_\_

Name and Address of Cognizant ACO where filed \_\_\_\_\_

---

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

(3) Certificate of Monetary Exemption.

The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling more than \$10 million in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

(4) Certificate of Interim Exemption.

The offeror hereby certifies that (i) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) above, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the Contracting Officer, in the form specified under subparagraphs (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

**CAUTION:** Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$10 million or more in the current cost accounting period may not claim this exemption (4).

Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

**II. Cost Accounting Standards - Exemption for Contracts of \$500,000 or Less**

If this proposal is expected to result in the award of a contract of \$500,000 or less, the offeror shall indicate whether the exemption below is claimed. Failure to check the box below shall mean that the resultant contract is

subject to CAS requirements or that the offeror elects to comply with such requirements.

( ) The offeror hereby claims an exemption from the CAS requirements under the provisions of 9903.201-1(b)(2).

*III. Cost Accounting Standards - Eligibility for Modified Contract Coverage*

If the offeror is eligible to use the modified provisions of 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

( ) The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because (i) during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$10 million in awards of CAS-covered prime contracts and subcontracts, and (ii) the sum of such awards equaled less than 10 percent of total sales during that cost accounting period. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

CAUTION: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$10 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$10 million or more.

*IV. Additional Cost Accounting Standards Applicable to Existing Contracts*

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

( ) YES

( ) NO

**K.20 CONTRACTS BETWEEN NASA AND FORMER NASA EMPLOYEES  
(NASA 18-52.203-70) (DEC 1988) (NASA/FAR SUPPLEMENT)**

The offeror represents that he or she ( ) is, or ( ) is not, an individual who was employed by NASA during the past two (2) years, or a firm in which such an individual is a partner, principal officer, or majority shareholder or that is otherwise controlled or predominantly staffed by such individuals.

**K.21 PAYMENT INFORMATION (LARC 52.232-98) (JUN 1988)**

The following is the address to which payment must be sent, if payment is made by check.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

SECTION L - INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS

## L.1 ORGANIZATIONAL CONFLICTS OF INTEREST CERTIFICATE--MARKETING CONSULTANTS (FAR 52.209-7) (NOV 1991)

## (a) Definitions.

(1) "Marketing consultant" means any independent contractor who furnishes advice, information, direction, or assistance to an offeror or any other contractor in support of the preparation or submission of an offer for a Government contract by that offeror. An independent contractor is not a marketing consultant when rendering --

(i) Services excluded in Subpart 37.2;

(ii) Routine engineering and technical services (such as installation, operation, or maintenance of systems, equipment, software, components, or facilities);

(iii) Routine legal, actuarial, auditing, and accounting services; or

-(iv) Training services.

(2) Organizational conflict of interest means that because of other activities or relationships with other persons, a person is unable or potentially unable to render impartial assistance or advice to the Government, or the person's objectivity in performing the contract work is or might be otherwise impaired, or a person has an unfair competitive advantage.

(b) An individual or firm that employs, retains, or engages contractually one or more marketing consultants in connection with a contract, shall submit to the contracting officer, with respect to each marketing consultant, the certificates described below, if the individual or firm is notified that it is the apparent successful offeror.

(c) The certificate must contain the following:

(1) The name of the agency and the number of the solicitation in question.

(2) The name, address, telephone number, and federal taxpayer identification number of the marketing consultant.

(3) The name, address, and telephone number of a responsible officer or employee of the marketing consultant who has personal knowledge of the marketing consultants involvement in the contract.

(4) A description of the nature of the services rendered by or to be rendered by the marketing consultant.

(5) The name, address, and telephone number of the client or clients, and the name of a responsible officer or employee of the marketing consultant who is knowledgeable about the services provided to such client(s), and a description of the nature of the services rendered to such client(s), if, based on information provided to the Contractor by the marketing consultant, any marketing consultant is rendering or, in the 12 months preceding the date of the certificate, has rendered services respecting the same subject matter of the instant solicitation, or directly relating to such subject matter, to the Government or any other client (including any foreign Government or person).

(6) A statement that the person who signs the certificate for the prime Contractor has informed the marketing consultant of the existence of Subpart 9.5 and Office of Federal Procurement Policy Letter 89-1.

(7) The signature, name, title, employer's name, address, and telephone number of the persons who signed the certificates for both the apparent successful offeror and the marketing consultant.



(d) In addition, the apparent successful offeror shall forward to the Contracting Officer a certificate signed by the marketing consultant that the marketing consultant has been told of the existence of Subpart 9.5 and Office of Federal Procurement Policy Letter 89-1, and the marketing consultant has made inquiry, and to the best of the consultant's knowledge and belief, the consultant has provided no unfair competitive advantage to the prime Contractor with respect to the services rendered or to be rendered in connection with the solicitation, or that any unfair competitive advantage that, to the best of the consultant's knowledge and belief, does or may exist, has been disclosed to the offeror.

(e) Failure of the offeror to provide the certifications may result in the offeror being determined ineligible for award. Misrepresentation of any fact may result in the assessment of penalties associated with false certifications or such other provisions provided for by law or regulation.

L.2 NOTICE OF PRIORITY RATING FOR NATIONAL DEFENSE USE (FAR 52.212-7)  
(SEP 1990)

Any contract awarded as a result of this solicitation will be a ( ) DX rated order; (X ) DO rated order certified for national defense use under the Defense Priorities and Allocations System (DPAS) (15 CFR 700), and the Contractor will be required to follow all of the requirements of this regulation.

L.3 SOLICITATION DEFINITIONS (FAR 52.215-5) (JUL 1987)

"Offer" means "proposal" in negotiation.

"Solicitation" means a request for proposals (RFP) or a request for quotations (RFQ) in negotiation.

"Government" means United States Government.

L.4 UNNECESSARILY ELABORATE PROPOSALS OR QUOTATIONS (FAR 52.215-7)  
(APR 1984)

Unnecessarily elaborate brochures or other presentations beyond those sufficient to present a complete and effective response to this solicitation are not desired and may be construed as an indication of the offeror's or quoter's lack of cost consciousness. Elaborate art work, expensive paper and bindings, and expensive visual and other presentation aids are neither necessary nor wanted.

L.5 AMENDMENTS TO SOLICITATIONS (FAR 52.215-8) (DEC 1989)

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Offerors shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment; (2) by identifying the amendment number and date in the space provided for this purpose on the form for submitting an offer; (3) by letter or telegram or (4) facsimile, if facsimile offers are authorized in the solicitation. The Government must receive the acknowledgment by the time specified for receipt of offers.

## L.6 SUBMISSION OF OFFERS (FAR 52.215-9) (DEC 1989)

- (a) Offers and modifications thereof shall be submitted in sealed envelopes or packages (1) addressed to the office specified in the solicitation, and (2) showing the time specified for receipt, the solicitation number, and the name and address of the offeror.
- (b) Telegraphic offers will not be considered unless authorized by the solicitation; however, offers may be modified by written or telegraphic notice.
- (c) Facsimile offers, modifications or withdrawals will not be considered unless authorized by the solicitation.
- (d) Item samples, if required, must be submitted within the time specified for receipt of offers. Unless otherwise specified in the solicitation, these samples shall be (1) submitted at no expense to the Government and (2) returned at the sender's request and expense, unless they are destroyed during preaward testing.

L.7 LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF PROPOSALS  
(FAR 52.215-10) (DEC 1989)

- (a) Any proposal received at the office designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it -
  - (1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been postmarked by the 15th);
  - (2) Was sent by mail or, if authorized by the solicitation, was sent by telegram or via facsimile and it is determined by the Government that the late receipt was due solely to mishandling by the Government after receipt at the Government installation;
  - (3) Was sent by U.S. Postal Service Express Mail Next Day Service-Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and U.S. Federal holidays; or
  - (4) Is the only proposal received.
- (b) Any modification of a proposal or quotation, except a modification resulting from the Contracting Officer's request for "best and final" offer, is subject to the same conditions as in subparagraphs (a)(1), (2), and (3) of this provision.
- (c) A modification resulting from the Contracting Officer's request for "best and final" offer received after the time and date specified in the request will not be considered unless received before award and the late receipt is due solely to mishandling by the Government after receipt at the Government installation.
- (d) The only acceptable evidence to establish the date of mailing of a late proposal or modification sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date and the proposal, quotation, or modification shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, offerors or quoters should request the postal clerks to place a legible hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(e) The only acceptable evidence to establish the time of receipt at the Government installation is the time/date stamp of that installation on the proposal wrapper or other documentary evidence of receipt maintained by the installation.

(f) The only acceptable evidence to establish the date of mailing of a late offer, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (d) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, offerors or quoters should request the postal clerk to place a legible hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(g) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful proposal that makes its terms more favorable to the Government will be considered at any time it is received and may be accepted.

(h) Proposals may be withdrawn by written notice or telegram (including mailgram) received at any time before award. If the solicitation authorizes facsimile proposals, proposals may be withdrawn via facsimile received at any time before award, subject to the conditions specified in the provision entitled "Facsimile Proposals." Proposals may be withdrawn in person by an offeror or an authorized representative, if the representative's identity is made known and the representative signs a receipt for the proposal before award.

#### L.8 PREPARATION OF OFFERS (FAR 52.215-13) (APR 1984)

(a) Offerors are expected to examine the drawings, specifications, Schedule, and all instructions. Failure to do so will be at the offeror's risk.

(b) Each offeror shall furnish the information required by the solicitation. The offeror shall sign the offer and print or type its name on the Schedule and each continuation sheet on which it makes an entry. Erasures or other changes must be initialed by the person signing the offer. Offers signed by an agent shall be accompanied by evidence of that agent's authority, unless that evidence has been previously furnished to the issuing office.

(c) For each item offered, offerors shall (1) show the unit price/cost, including, unless otherwise specified, packaging, packing, and preservation and (2) enter the extended price/cost for the quantity of each item offered in the "Amount" column of the Schedule. In case of discrepancy between a unit price/cost and an extended price/cost, the unit price/cost will be presumed to be correct, subject, however, to correction to the same extent and in the same manner as any other mistake.

(d) Offers for supplies or services other than those specified will not be considered unless authorized by the solicitation.

(e) Offerors must state a definite time for delivery of supplies or for performance of services, unless otherwise specified in the solicitation.

(f) Time, if stated as a number of days, will include Saturdays, Sundays, and holidays.

#### L.9 EXPLANATION TO PROSPECTIVE OFFERORS (FAR 52.215-14) (APR 1984)

Any prospective offeror desiring an explanation or interpretation of the solicitation, drawings, specifications, etc., must request it in writing soon

enough to allow a reply to reach all prospective offerors before the submission of their offers. Oral explanations or instructions given before the award of the contract will not be binding. Any information given to a prospective offeror concerning a solicitation will be furnished promptly to all other prospective offerors as an amendment of the solicitation, if that information is necessary in submitting offers or if the lack of it would be prejudicial to any other prospective offerors.

L.10 FAILURE TO SUBMIT OFFER (FAR 52.215-15) (APR 1984)

Recipients of this solicitation not responding with an offer should not return this solicitation, unless it specifies otherwise. Instead, they should advise the issuing office by letter or postcard whether they want to receive future solicitations for similar requirements. If a recipient does not submit an offer and does not notify the issuing office that future solicitations are desired, the recipient's name may be removed from the applicable mailing list.

L.11 CONTRACT AWARD (FAR 52.215-16) (JUL 1990)--ALTERNATE II  
(NOV 1992)

- (a) The Government will award a contract resulting from this solicitation to the responsible offeror whose offer conforming to the solicitation will be most advantageous to the Government, cost or price and other factors, specified elsewhere in this solicitation, considered.
- (b) The Government may (1) reject any or all offers if such action is in the public interest, (2) accept other than the lowest offer, and (3) waive informalities and minor irregularities in offers received.
- (c) The Government intends to evaluate proposals and award a contract after written or oral discussions with all responsible offerors who submit proposals within the competitive range. However, each initial offer should contain the offeror's best terms from a cost or price and technical standpoint.
- (d) The Government may accept any item or group of items of an offer, unless the offeror qualifies the offer by specific limitations. *Unless otherwise provided in the Schedule, offers may be submitted for quantities less than those specified. The Government reserves the right to make an award on any item for a quantity less than the quantity offered, at the unit cost or prices offered, unless the offeror specifies otherwise in the offer.*
- (e) A written award or acceptance of offer mailed or otherwise furnished to the successful offeror within the time for acceptance specified in the offer shall result in a binding contract without further action by either party. Before the offer's specified expiration time, the Government may accept an offer (or part of an offer, as provided in paragraph (d) above), whether or not there are negotiations after its receipt, unless a written notice of withdrawal is received before award. Negotiations conducted after receipt of an offer do not constitute a rejection or counteroffer by the Government.
- (f) Neither financial data submitted with an offer, nor representations concerning facilities or financing, will form a part of the resulting contract. However, if the resulting contract contains a clause providing for price reduction for defective cost or pricing data, the contract price will be subject to reduction if cost or pricing data furnished is incomplete, inaccurate, or not current.

(g) The Government may determine that an offer is unacceptable if the prices proposed are materially unbalanced between line items or subline items. An offer is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated in relation to cost for other work, and if there is a reasonable doubt that the offer will result in the lowest overall cost to the Government, even though it may be the low evaluated offer, or it is so unbalanced as to be tantamount to allowing an advance payment.

#### L.12 FACILITIES CAPITAL COST OF MONEY (FAR 52.215-30) (SEP 1987)

(a) Facilities capital cost of money will be an allowable cost under the contemplated contract, if the criteria for allowability in subparagraph 31.205-10 (a)(2) of the Federal Acquisition Regulation are met. One of the allowability criteria requires the prospective Contractor to propose facilities capital cost of money in its offer.

(b) If the prospective Contractor does not propose this cost, the resulting contract will include the clause Waiver of Facilities Capital Cost of Money.

#### L.13 TYPE OF CONTRACT (FAR 52.216-1) (APR 1984)

The Government contemplates award of a cost-plus-fixed-fee contract resulting from this solicitation.

#### L.14 SIC CODE AND SMALL BUSINESS SIZE

(a) The standard industrial classification (SIC) code for this acquisition is 7371.

(b)(1) The small business size standard is \$18,000,000 in annual average gross revenue for the last three fiscal years.

(2) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

#### L.15 PREAWARD ON-SITE EQUAL OPPORTUNITY COMPLIANCE REVIEW (FAR 52.222-24) (APR 1984)

An award in the amount of \$1 million or more will not be made under this solicitation unless the offeror and each of its known first-tier subcontractors (to whom it intends to award a subcontract of \$1 million or more) are found, on the basis of a compliance review, to be able to comply with the provisions of the Equal Opportunity clause of this solicitation.

#### L.16 EVALUATION OF COMPENSATION FOR PROFESSIONAL EMPLOYEES (FAR 52.222-46) (FEB 1993)

(a) Recompetition of service contracts may in some cases result in lowering the compensation (salaries and fringe benefits) paid or furnished professional employees. This lowering can be detrimental in obtaining the quality of professional services needed for adequate contract performance. It is therefore in the Government's best interest that professional employees, as defined in 29 CFR 541, be properly and fairly compensated. As a part of their proposals, offerors will submit a total compensation plan setting forth salaries and fringe

benefits proposed for the professional employees who will work under the contract. The Government will evaluate the plan to assure that it reflects a sound management approach and understanding of the contract requirements. This evaluation will include an assessment of the offeror's ability to provide uninterrupted high-quality work. The professional compensation proposed will be considered in terms of its impact upon recruiting and retention, its realism, and its consistency with a total plan for compensation. Supporting information will include data, such as recognized national and regional compensation surveys and studies of professional, public and private organizations, used in establishing the total compensation structure.

(b) The compensation levels proposed should reflect a clear understanding of work to be performed and should indicate the capability of the proposed compensation structure to obtain and keep suitably qualified personnel to meet mission objectives. The salary rates or ranges must take into account differences in skills, the complexity of various disciplines, and professional job difficulty. Additionally, proposals envisioning compensation levels lower than those of predecessor Contractors for the same work will be evaluated on the basis of maintaining program continuity, uninterrupted high-quality work, and availability of required competent professional service employees. Offerors are cautioned that lowered compensation for essentially the same professional work may indicate lack of sound management judgment and lack of understanding of the requirement.

(c) The Government is concerned with the quality and stability of the work force to be employed on this contract. Professional compensation that is unrealistically low or not in reasonable relationship to the various job categories, since it may impair the Contractor's ability to attract and retain competent professional service employees, may be viewed as evidence of failure to comprehend the complexity of the contract requirements.

(d) Failure to comply with these provisions may constitute sufficient cause to justify rejection of a proposal.

#### L.17 ROYALTY INFORMATION (FAR 52.227-6) (APR 1984)

(a) Cost or charges for royalties. When the response to this solicitation contains costs or charges for royalties totaling more than \$250, the following information shall be included in the response relating to each separate item of royalty or license fee:

- (1) Name and address of licensor.
- (2) Date of license agreement.
- (3) Patent numbers, patent application serial numbers, or other basis on which the royalty is payable.
- (4) Brief description, including any part or model numbers of each contract item or component on which the royalty is payable.
- (5) Percentage or dollar rate of royalty per unit.
- (6) Unit price of contract item.
- (7) Number of units.
- (8) Total dollar amount of royalties.

(b) Copies of current licenses. In addition, if specifically requested by the Contracting Officer before execution of the contract, the offeror shall furnish a copy of the current license agreement and an identification of applicable claims of specific patents.

## L.18 SERVICE OF PROTEST (FAR 52.233-2) (NOV 1988)

(a) Protests, as defined in Section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO) or the General Services Administration Board of Contract Appeals (GSBCA), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from Head, Services Contracts Branch.

(b) The copy of any protest shall be received in the office designated above on the same day a protest is filed with the GSBCA or within one day of filing a protest with the GAO.

L.19 INCREASES IN ESTIMATED COSTS (NASA 18-52.215-70)  
(DEC 1988)

Once the apparent successful offeror has been selected, that offeror may not unilaterally increase the estimated costs submitted with its proposal except for -

(a) Changes resulting from updating or correcting the certified cost or pricing data submitted with its proposal;

(b) Costs resulting from the Government's directed correction of identified weaknesses in the proposal that must be corrected as a condition of contracting; or

(c) Minor changes in the requirements of the solicitation. In such cases, the Government will consider only those increases arising from requirements actually affected by the changes (irrespective of whether the changes result in an increase or decrease in the requirements or are initiated by the Government or the offeror) and then only to the extent the increases are identified and justified.

L.20 RESTRICTION ON USE AND DISCLOSURE OF PROPOSAL/QUOTATION  
INFORMATION (DATA) (NASA 18-52.215-72) (DEC 1984)

It is NASA policy to use information contained in proposals and quotations for evaluation purposes only. While this policy does not require that the proposal or quotation bear a restrictive notice, offerors and quoter should, in order to maximize protection of trade secrets or other information that is commercial or financial and confidential or privileged, place the following notice on the title page of the proposal or quotation and specify the information subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information (data) contained in proposals and quotations will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

RESTRICTION ON USE AND DISCLOSURE OF PROPOSAL AND QUOTATION  
INFORMATION (DATA)

The information (data) contained in (insert page numbers or other identification) of this proposal or quotation constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed for other than evaluation purposes; provided, however, that in the event a contract is awarded on this proposal or quotation

the Government shall have the right to use and disclose this information (data) to the extent provided in the contract. This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

L.21 EXPENSES RELATED TO OFFEROR SUBMISSIONS (NASA 18-52.215-75)  
(DEC 1988)

This solicitation neither commits the Government to pay any cost incurred in the submission of the offer or in making necessary studies or designs for preparing the offer, nor to contract for services or supplies. Any costs incurred in anticipation of a contract shall be at the offeror's own risk.

L.22 FALSE STATEMENTS (NASA 18-52.215-76) (DEC 1988)

PROPOSALS MUST SET FORTH FULL, ACCURATE, AND COMPLETE INFORMATION AS REQUIRED BY THE SOLICITATION (INCLUDING ATTACHMENTS). THE PENALTY FOR MAKING FALSE STATEMENTS IN PROPOSALS IS PRESCRIBED IN 18 U.S.C. 1001.

L.23 DISPOSAL OF UNSUCCESSFUL PROPOSALS (NASA 18-52.215-80) (DEC 1988)

After contract award, one or more copies of each unsuccessful proposal will be retained in the Government's official contract file, and all other copies will be destroyed.

L.24 SMALL BUSINESS AND SMALL DISADVANTAGED BUSINESS SUBCONTRACTING PLAN  
(NASA 18-52.219-73) (DEC 1988) ALTERNATE I (DEC 1988)

- (a) This provision is not applicable to small business concerns.
- (b) The contract expected to result from this solicitation will contain FAR clause 52.219-9, "Small Business and Small Disadvantaged Business Subcontracting Plan." Each offeror must submit the complete plan with its initial proposal.

L.25 PREPROPOSAL/PRE-BID CONFERENCE (NASA 18-52.215-77) (DEC 1988)

- (a) A preproposal conference will be held as indicated below:

Date: July 6, 1994

Time: 9:00 a.m.

Location: H. J. E. Reid Conference Center, NASA LaRC (Same location as where the Pre-Solicitation Conference was held.)

Other information: The conference is expected to last approximately three hours.

For planning your itinerary, the following is a tentative agenda for the conference:

Registration 8:45 a.m. - 9:00 a.m.  
Opening Remarks  
LaRC Presentations  
Facilities Tour  
Questions and Answers



Attendance will be limited to a maximum of three representatives per offeror. The briefing will be unclassified. If you desire to attend the conference, you should so indicate by written or telephone contact with the appropriate individual specified in L.27 no later than July 1, 1994. After the briefing, advise this Center if you intend to submit a proposal.

In order that as many questions as possible may be answered at the NASA presentations during the briefing, written questions must be submitted to the contact listed in L.27 no later than June 29, 1994. A limited time may be available for answering questions submitted on the day of the conference. However, as there is no assurance that adequate time to answer such questions will remain, submission of questions prior to the conference, by the date specified above, will assure their being fully answered.

(b) Attendance at the preproposal conference is recommended; however, attendance is neither required nor a prerequisite for proposal submission and will not be considered in the evaluation.

L.26 CERTIFICATE OF PROCUREMENT INTEGRITY - OFFERS (LaRC 52.203-90)  
(OCT 1992)

The certificate required by Federal Acquisition Regulation (FAR) provision 52.203-8, Requirement for Certificate of Procurement Integrity, Alternate I, is attached to this solicitation. In accordance with FAR 3.104-9, the officer or employee responsible for your offer for this procurement must execute this certificate after negotiation of the contract and prior to award. Do not submit the certificate with your proposal.

L.27 COMMUNICATIONS REGARDING THIS SOLICITATION (LaRC 52.204-95)  
(OCT 1993)

Any communications in reference to this solicitation shall cite the solicitation number and be directed to the following Government representative:

Name: Staten R. Spruill  
Phone: (804) 864-2535 (COLLECT CALLS NOT ACCEPTED)  
Facsimile: 804-864-7709  
Address: National Aeronautics and Space Administration  
Langley Research Center  
Attn: Staten R. Spruill, Mail Code 126  
Hampton, VA 23681-0001

Any written communications must include the mail code on the envelope or on the telex.

L.28 CERTIFICATION OF COST OR PRICING DATA (LaRC 52.215-97)  
(JUN 1988)

Pursuant to the provisions of Public Law 87-653, as amended by Public Law 97-86, the Contractor will be required to certify, except where the price negotiated is based on adequate price competition, as determined by the Contracting Officer, or established catalog or market prices of commercial items

sold in substantial quantities to the general public, or prices set by law or regulation, that the cost or pricing data submitted or identified on Standard Form 1411 are accurate, complete, and current. The required certificate is set forth in FAR 15.804-4, a copy of which is attached (NASA-Langley Form PROC./P-281) and which shall be properly executed after negotiation and prior to contract award.

#### L.29 REJECTION, NEGOTIATION, AWARD AND EXPENDITURE OF FUNDS

This solicitation does not commit the Government to award a contract, since the Government reserves the right to reject any or all proposals, or to negotiate separately with any source considered qualified. The Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds in connection with the proposed procurement.

#### L.30 IDENTIFICATION OF UNCOMPENSATED OVERTIME

(a) As used in this provision, the following definitions apply:

(i) "Uncompensated overtime" means the hours worked in excess of an average of 40 hours per week, by direct charge employees who are exempt from the Fair Labor Standards Act (FLSA) without additional compensation. Compensated personal absences, such as holidays, vacations, and sick leave shall be included in the normal work week for purposes of computing uncompensated overtime hours. For purposes of this clause, uncompensated overtime also includes hours worked in excess of an average of 40 hours per week by direct charge FLSA-exempt employees for which less than full compensation was received. (ii) "Effective hourly rate" is the rate which results from multiplying the hourly rate for a 40-hour work week by 40, and then dividing by the proposed hours per week. For example 45 hours proposed on a 40-hour work week basis at \$20.00 per hour would be converted to an effective hourly rate of \$17.78 per hour [ $(\$20.00 \times 40)$  divided by 45 = \$17.78].

(b) For any hours proposed against which an effective hourly rate is applied, the offeror shall identify in its proposal the hours in excess of an average of 40 hours per week, at the same level of detail as the initial 40 hours, and the effective hourly rate, whether at the prime or subcontract level. Such identification is required for FLSA-exempt employees who charge all or some of their time (including overtime) direct. The offeror shall also identify any compensated overtime hours included in indirect cost pools for employees whose regular hours are normally charged direct (for example, FLSA-exempt employees placed in indirect cost pools for allocating costs among tasks under a service contract).

(c) Proposals which include unrealistically low labor rates, or which do not otherwise demonstrate cost realism, will be considered in a risk assessment and evaluated for award in accordance with that assessment.

(d) The offeror's accounting practices used to estimate uncompensated overtime must be consistent with its cost accounting practices used to accumulate and report uncompensated overtime hours.

(e) The offeror shall include with its proposal a copy of its policy addressing uncompensated overtime, including a description of the timekeeping and accounting systems used to record all hours worked by exempt employees.

## ..31 USE OF GOVERNMENT SUPPLY SOURCES

You may assume for proposal preparation purposes that use of Government sources such as GSA Contractors will be authorized. Reference FAR Clause 52.251-1.

## L.32 CONTRACTOR'S OFF-SITE FACILITY

The Government currently houses on-site at LaRC all employees listed in Attachments 5 and 6 except for the Contract Manager. The Contractor shall provide an off-site facility to house the Contract Manager and any proposed additional indirect personnel. The Government will not supply any Government-owned facility items (i.e. furniture, computer equipment, etc.) for the proposed off-site facility. The offeror should specify the location of the proposed off-site facility.

## L.33 GOVERNMENT FACILITIES AND EQUIPMENT

Attachments 7 through 9 are provided for the offeror's information and better understanding of LaRC's operations. Attachments 10 through 14 are provided to inform the offeror of LaRC's current specialized computer facilities and peripheral equipment; advanced real-time simulation system equipment; graphics system; computer generated image system, and voice communications system.

## L.34 SUBMISSION OF SECURITY PLAN FOR UNCLASSIFIED FEDERAL COMPUTER SYSTEMS (NASA 18-52.204-77) (SEP 1993)

(a) "Computer system," as used in this provision, means any equipment or interconnected system or subsystems of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception, of data or information. It includes computers; ancillary equipment; software, firmware, and similar procedures; services, including support services; and related resources as defined by the regulations issued by the Administrator for General Services pursuant to Section 111 of the Federal Property and Administrative Services Act of 1949.

"Federal computer system," as used in this clause, means a computer system operated by a Federal agency or by a contractor of a Federal agency or other organization that processes information using a computer system on behalf of the Federal Government to accomplish a Federal function.

"Sensitive information," as used in this clause, means any information, the loss, misuse, or unauthorized access to, or modification of, which could adversely affect the national interest or the conduct of Federal programs, or the privacy to which individuals are entitled under Section 552a or title 5, United States Code (the Privacy Act), but which has not been specifically authorized under criteria established by an Executive order or an Act of Congress to be kept secret in the interest of national defense or foreign policy.

(b) Under negotiated procurement procedures, the apparently successful offeror shall provide a plan, for Contracting Officer approval prior to award, that describes its program for the protection of sensitive information in unclassified Federal computer systems. The plan shall be submitted no later than 30 days after receipt of the Contracting Officer's written request. Under sealed bidding procedures, failure to provide a security plan with the bid will render the bid nonresponsive.

(c) The plan shall address the security measures and program safeguards which will be provided to ensure that all computer systems and resources acquired and utilized in the performance of the contract by contractor and subcontractor personnel:

- (1) Operate effectively and accurately;
  - (2) Are protected from unauthorized alteration, disclosure, or misuse of information processed, stored, or transmitted;
  - (3) Can maintain the continuity of automated information support for Government missions, programs, and functions;
  - (4) Incorporate management, general, and application controls sufficient to provide cost-effective assurance of the system's integrity and accuracy; and
  - (5) Have appropriate technical, personnel, administrative, environmental, and access safeguards.
- (d) This plan, as approved by the Contracting Officer, will be included in any resulting contract for contractor compliance.

### L.35 PROPOSAL PREPARATION AND SUBMISSION--SPECIAL INSTRUCTIONS

#### A. General Information

1. Number of Proposals, Time and Place of Submission--The offeror shall submit the original and 12 copies of each volume of his proposal to the address shown in Block 8 of the Standard Form (SF) 33 (face page of this solicitation), or if hand carried, to the depository listed in Block 9 of the SF 33. Offers must be received at the place indicated on or before the date and hour shown in Block 9 of the SF 33. Each volume of the original must be designated as such, and each volume of all other copies shall be numbered, one through 12, on the outside cover.

2. Proposal Clarity--Your proposal should be specific, complete, and concise. The offeror is urged to examine this solicitation in its entirety and to assure that his proposal contains all the necessary information, provides all required documentation and is complete in all respects since evaluation of the proposal will be based on the actual material presented and not on the basis of what is implied. You should ensure that your cost proposal is consistent with your technical proposal in all respects since the cost proposal may be used as an aid to determine the offeror's understanding of the technical requirements. Discrepancies may be viewed as a lack of understanding.

#### 3. Proposal Format and Content

a. Proposals must be submitted in two (2) volumes: Volume I, Mission Suitability Proposal, and Volume II, Business Proposal. No cost information shall be presented in the Mission Suitability Proposal except the salary data requested for proposed Key Personnel and the data required by the Professional Compensation Plan (see L.16 and Subfactor 3 of Factor 1, Page 106).

b. Two options are available for formatting your mission suitability proposal. You may choose the one that you consider most advantageous. You must specify in your proposal which option you have selected. Regardless of the option you choose, the limitation is inclusive of charts, tables, diagrams, captions, and figures, but exclusive of personnel resumes, cover pages, dividers,

table of contents, and list of figures. All text will be printed black on white, doubled-spaced, and preferably double-sided. Additionally, offerors are requested to refrain from using script-style or other non-standard type fonts, but instead use fonts such as Courier 10-cpi or CG Times 12 points, so as to insure readability of proposals.

Option 1. Based on Word Count

In order to permit flexibility in formatting while holding the amount of information presented by each offeror to an approximately equal amount, a limit of 40,000 words is imposed on your mission suitability proposal.

The word-count rules used by any commercial word-processing software package are acceptable. You shall indicate the cumulative word count on each page of your proposal. Any information that is determined to be beyond the word-count limit will not be evaluated.

Option 2. Based on Page Count

The number of pages is limited to 100. Each "page" is one side of one sheet, 8½" by 11" with at least one-inch margins on all sides. Foldouts count as an equivalent number of 8½" by 11" pages. Type shall be no smaller than 12 points. Text shall be double-spaced (no more than three lines per inch) and either variable pitch or fixed pitch of no more than 12 characters per inch. The text contained on charts, figures, and tables shall not exceed the amount of text that would be contained in an equal area under the text formatting guidelines stated above. Any page(s) exceeding the 100 page limitation will not be evaluated.

B. TECHNICAL PROPOSAL - VOLUME I

1. FACTOR 1 - MISSION SUITABILITY

The Contractor will be responsible for satisfactory accomplishment of the contract awarded hereunder. In the event other organizations are proposed as being involved in the conduct of this work, their relationship during the effort shall be indicated, and their proposed contributions to the work and to your proposal shall be identified and integrated into each part of the proposal as applicable.

a. Subfactor 1 - Organization

This subfactor will be used to evaluate the adequacy and suitability of your proposed organization for performing the work efficiently and effectively. Accordingly, your proposal should include the following:

(1) Corporate/company/team organization chart with supporting narrative reflecting the contract unit's placement and reporting relationships within the company/team and the role each will play in contract management and performance.

(2) Your contract unit's organization chart with supporting narrative for the organization proposed. You should address any subcontractor placement and reporting relationship within the contract unit, and integration of any subcontractor and/or team effort with the prime effort should be addressed.

(3) You should include your proposed distribution of management and administrative effort and provide rationale therefor.

(4) Positions which the Government considers to be "Key" to this effort are so designated in Attachment 6 to this RFP. You should list any other positions which you consider to be "Key" as well as the rationale for so designating each key position.

(5) Describe the duties, responsibilities, authority and autonomy of your key positions.

(6) Identify any work functions which you expect to obtain through subcontracting and/or teaming agreements. Such features as rationale for the arrangement, the qualifications of the subcontractor and/or team members, nature and extent of the effort, and commitment of subcontractor and/or team members should be addressed.

(7) A discussion of proposed interfaces with other elements of your company, the Government, and any subcontractors and/or team members.

(8) Describe any corporate resources or support which will be available under this contract.

b. Subfactor 2 - Phase-in, Staffing and Continuing Personnel Management

Your response to this subfactor should address your plans for initial phase-in, for minimizing changeover difficulties, for maximizing continuity of services to the Government, and for maintaining competent staffing for the term of the contract (including all option periods).

(1) Your proposal should include a detailed description and schedule of all phase-in activities. NOTE: For purposes of establishing your phase-in milestones, assume Contractor selection in October 1994, contract award in November 1994, and contract start date of February 1, 1995.

(2) Your proposal should include your plans for reaching the full complement of qualified personnel by the contract start date. Include a description of and rationale for the recruitment and employment methods your company will use to staff the contract, both initially and during the contract term. Include a table of personnel sources noting the percentage of the total initial workforce which you intend to obtain from the following: your own resources, other divisions of your company, subcontractor or team agreements, outside recruitment, and incumbent personnel retention.

(3) Provide your basis for anticipated incumbent workforce retention.

(4) You should include the skill mix distribution that you propose. The skill mix should indicate the number of individuals that you propose to employ for each of the positions described in Attachment 5, as well as any other positions that you deem appropriate. The estimated staffing in Attachment 5 is provided for your information only and is not restrictive for proposal purposes. You should propose the staff that is optimum for contract performance and provide rationale therefor.

(5) In order to further convey your understanding of the requirement to provide highly-skilled and difficult-to-locate personnel, your proposal should detail recruitment plans for filling the following positions, which are described in Attachment 5, and any other positions you deem highly skilled and difficult-to-locate:

Senior Simulation Analyst  
Simulator Systems Engineer  
Senior Simulator Systems Specialist

Your proposal should discuss specific sources of recruitment, sources of advertisement, time frame required to effect hire, and typical problems encountered in filling the vacancies and proposed solutions to these problems. Describe your company's past recruiting experiences with similar skills.

(6) You should discuss your company's programs and policies, including awards and incentive programs, for minimizing turnover and retaining experienced personnel.

(7) Your proposal should include a description of your training, orientation, career development plans and objectives for new hires, on-board employees and changing requirements.

(8) Your proposal should include a description of your company's approach to determining non-professional employees compensation levels including a detailed discussion of fringe benefits and leave policies. Itemize the benefits that require employee contributions and the amount of that contribution as a percentage of the total cost of the benefit and of the employee's wage. Describe your policies for establishing the wage levels of any retained incumbent contractor employees and explain the eligibility and vesting for hired incumbent contractor employees for your proposed fringe benefits; e.g., vacation, medical insurance, sick leave, and retirement. Describe how pre-existing medical conditions for incumbents and their dependents will be handled under your health insurance plan. Highlight differences, if any, between the compensation policies for professional and non-professional personnel.

c. Subfactor 3 - Professional Compensation Plan

This subfactor will be used to evaluate the suitability and equitability of the proposed compensation structure for professional employees to assure that highly qualified employees are attracted to perform the effort and their continued interest and employment are likely to occur. Accordingly, you should submit the following:

A Professional Compensation Plan for the professional employees proposed for this contract. It should include salaries and a detailed description of fringe benefits and leave policies. Itemize the benefits that require employee contributions and the amount of that contribution as a percentage of the total cost of the benefit and of the employees' salary. Describe your company's policy for establishing the salaries of any retained incumbent contractor employees and explain the eligibility and vesting for hired incumbent contractor employees for your proposed fringe benefits; e.g., vacation, medical insurance, sick leave and retirement. Describe how pre-existing medical conditions for incumbents and their dependents will be handled under your health insurance plan. Your Professional Compensation Plan should be submitted in accordance with FAR 52.222-46 (see L.16 of this RFP). You should include your compensation plans for all professional positions as defined in 29 CFR 541.

d. Subfactor 4 - Operations Plan

This subfactor will be used to evaluate your understanding of the Statement of Work requirements, both from a management and technical standpoint, and your approach for meeting these requirements.

- (1) Your proposal should detail your plans for assigning, prioritizing and supervising the work areas in the Statement of Work.
- (2) Your proposal should detail your plans for performing the work areas in the Statement of Work.
- (3) Your proposal should discuss the management of your work control system.
- (4) Your proposal should include your approach for recognizing, reporting, solving and follow-up on technical and schedule problems. To further convey your understanding of the requirements, your proposal should address typical problems associated with the work and proposed solutions.
- (5) Your proposal should outline and discuss your methods of real-time simulation program design, development, configuration management, documentation and integration to a simulator(s) to meet real-time simulation requirements.
- (6) Your proposal should outline and discuss your methods of design, maintenance, modification, calibration, operation, configuration management and documentation of flight simulation facilities and equipment.
- (7) Your proposal should discuss your approach to application of new technology to support real-time simulation.
- (8) Discuss your plans for accommodating fluctuating workloads (up and down) and personnel absences.
- (9) Your proposal should describe your approach for cost control to include cost reporting, tracking, controlling actual vs. planned costs, forecasting, and overhead surveillance and tracking.



(10) Your proposal should describe your subcontracting/purchasing system policies and procedures including your approach to insuring efficient and effective expenditure of Government funds. Specify who has procurement authority within your company and indicate their dollar level of authority. Indicate whether your company has an approved purchasing system and provide the name of the approving agency and date of the approval. Include a discussion of your approach to specification development, solicitation preparation, evaluation criteria, selection, award and subcontract management.

(11) Discuss the effectiveness of your programs for motivating and incentivizing employees to continuously improve performance and increase productivity.

e. Subfactor 5 - Key Personnel

This subfactor will be used to evaluate the education, experience and other qualifications of your proposed Key Personnel against their proposed functions/duties and the position qualifications set forth in Attachment 6.

(1) Positions which the Government considers to be "Key" to this effort are so designated in Attachment 6 to this RFP. You shall include a resume for each of your proposed key positions. Each resume shall detail the individuals's education, experience and other qualifications for the proposed position. These resumes should be clear, complete and comprehensive. Please do not use acronyms in these resumes as it sometimes hampers the Government's evaluation.

(2) Your proposal should include references for all proposed Key Personnel relative to their current and previous positions. These references should be people outside of your company who are directly knowledgeable of your proposed Key Personnel's training, experience and performance. You should include names, organizations and current telephone numbers for these references.

(3) The capability and knowledge demonstrated by proposed Key Personnel at oral discussions, if held, as well as the findings of any reference checks which are made, will be considered in arriving at final scores.

(4) Your proposal should state the current and proposed salary for each individual and include a signed statement evidencing their commitment to work on this procurement at the proposed salary and fringe benefits.

C. BUSINESS PROPOSAL - VOLUME II

1. FACTOR 2 - COST (NOT NUMERICALLY SCORED)

Under requirements of the Federal Acquisition Regulation (FAR), the Contracting Officer is responsible for determining reasonableness of pricing. To assist in determining whether the prices proposed in your offer under this solicitation are "fair and reasonable," you are required to submit cost or pricing data with your proposal pursuant to FAR 15.804.

a. Offerors are required to submit cost proposals using Standard Form (SF) 1411, Contract Pricing Proposal Cover Sheet, a copy of which is included as Attachment 2 of the solicitation. Offerors shall fully comply with the requirements of Table 15-2, Instructions for Submission of a Contract Pricing Proposal, which begins on page 2 of the SF 1411. Provide supporting information for each cost element as required by Table 15-2. Offerors shall also provide Cost Forms as specified in Attachment 4, on diskette as well as in their written proposals, to aid the source evaluation committee in comparing the proposed costs. SF 1411's and cost forms shall be provided as follows:

	<u>Forms</u>	<u>Period</u>
Phase-In	SF 1411	Prior to 2/1/95
Initial Contract Period	SF 1411, A-1, B-1	2/1/95 - 1/31/96
First Option to Extend	SF 1411, A-2, B-2	2/1/96 - 1/31/97
Second Option to Extend	SF 1411, A-3, B-3	2/1/97 - 1/31/98
Third Option to Extend	SF 1411, A-4, B-4	2/1/98 - 1/31/99
Fourth Option to Extend	SF 1411, A-5, B-5	2/1/99 - 1/31/00
Total, Init. Contr. and Options to Ext. 1 - 4	SF 1411, A-6	2/1/95 - 1/31/00
Fifth through Tenth Options to Extend 5 - 10 (One Mo. Each)	SF 1411, A-7, B-6	2/1/00 - 7/31/00
Total, Init. Contr. and All Options to Ext.	SF 1411, A-8	2/1/95 - 7/31/00
Options to Increase Level of Effort	SF 1411, C	2/1/95 - 7/31/00
Total, Phase-In, Init. Contr. and All Opts.	SF 1411, A-9	Phs. In - 7/31/00

If your proposed costs for the six one-month extension options will be the same for each of the months, you may submit one Form A-7, one Form B-6, and one SF 1411; otherwise submit one of each form for each month. (Make additional copies of A-7 and B-6 in the spreadsheet file if submission of six each is necessary.) Diskettes containing the forms in a spreadsheet file will be provided to offerors upon request, and the Government-provided spreadsheets must be completed and submitted as part of your proposal. Forms must also be submitted on paper, and a complete paper set will be provided to offerors with the diskette if requested. The forms included in Attachment 4 were printed as Lotus 1-2-3 for Windows spreadsheets. The Government-provided diskettes will be furnished as 1-2-3 2.x, 1-2-3 3x, 1-2-3 W, or Quattro Pro for DOS or Windows spreadsheets as requested by the proposer. Also specify diskette size (3-1/2" or 5-1/4") and density (360Kb, 720Kb, 1.2 Mb, 1.44 Mb). The paper forms you submit with your proposal may be printed from your completed spreadsheets; they need not have the same appearance as the examples in Attachment 4 as long as they are readable. You may change column widths, formats, fonts, etc., but DO NOT MOVE CELLS and DO NOT INSERT OR DELETE ROWS OR COLUMNS. Submit two copies of your diskette(s). In the event of any inconsistency between the Diskettes and the paper forms, the paper forms will be considered the intended version.

You are encouraged, but not required, to prepare your entire cost proposal using a spreadsheet program, and to connect the proposal to the NASA forms with spreadsheet formulas.

b. Your cost proposal as represented by the Standard Forms 1411 must be prepared in accordance with your accounting system and your Cost Accounting Standards Disclosure Statement if applicable.

## c. Instructions for Cost Forms A, B, and C

(1) Offerors shall complete the A and B series of forms and form C in accordance with the following instructions, even though the resulting cost classifications may differ from the offeror's accounting system and practices. If these cost classifications differ from your established classification system, identify, reconcile, and explain the differences.

(2) Amounts proposed for each cost element must be separately supported by an explanation of the method by which the amount was determined. Insert "N/A" where cost elements on the forms do not apply.

(3) If escalation of salaries and wages or any other cost elements is proposed, the offeror should discuss the rationale and provide the offeror's escalation history for the past three years.

(4) Instructions for specific items on the forms follow.

(a) Labor - As a minimum you must propose the labor hours necessary to provide the 40 positions set forth in the "Government Estimated Staffing Requirements and Minimum Position Qualifications" under Attachment 5 and the three positions set forth in Attachment 6. The offeror should propose the staff that is optimum for contract performance. Since the number of productive manhours per manyear varies among companies, you should propose a staff using your productive manhours per year. Explain the number of hours you use to calculate the costs for each position. Show the hours and costs on Forms B-1 through B-6. If any of the positions are classified by your accounting system as other than direct labor, or if you propose to subcontract any of the positions, so indicate with notes. Also enter the hours and costs in the appropriate spaces in Forms A-1 through A-9.

Past experience indicates that some overtime will be required. For cost estimating purposes, you should assume that 2,000 hours per year will be required (167 per month for the one-month options), divided equally among the positions proposed.

A copy of the Register of Wage Determinations and Fringe Benefits issued by the Department of Labor for employees under this proposed contract is included in Exhibit B. It should be noted that the wage rates specified therein are minimum rates. It should also be noted that the wage determination may not list all labor classes to be employed under this contract. Paragraph (a) of the Section I clause entitled "Service Contract Act of 1965" states that in this event, conformable rates must be established for those service employees to be employed under the contract but not listed on the wage determination. These conformable wage rates will be the result of a three-party agreement between the employees, Contractor, and the Government.

Any composite hourly rates on Forms B-1 through B-6 must be explained.

If you propose to subcontract any part of the required level of effort, have the prospective subcontractor complete separate SF 1411's,

Forms A-1 through A-9, B-1 through B-6, and, if applicable, C. (The prospective subcontractor should complete the forms as if it is a prime contract proposer.) The item "Subcontract Direct Level of Effort Labor" on the prime proposer's Forms A-1 through A-9 should include the subcontractor's overtime and premium costs as well as its straight-time labor costs.

(b) Fringes and Payroll Taxes - Enter the fringe benefits and payroll tax costs applicable to direct labor costs, and any labor shown under "Allocated Labor Other than G&A." Fringe benefits and payroll taxes applicable to subcontracts for level of effort labor should be included by the prime proposer in "Profit and Costs Other than Labor, in Direct Labor Subcontracts."

If it is your normal practice to account for fringe benefits and payroll taxes as direct costs, or if you intend to include these costs in a fringe benefit or overhead pool dedicated to the proposed contract only, estimate the costs for each element and enter on the forms. If these costs are part of a fringe benefit or overhead pool that will allocate to other cost objectives as well as to the proposed contract, and you normally estimate such costs by projecting a fringe benefit or overhead rate to be applied to a base such as direct labor cost, estimate the costs according to the normal practice and divide the costs among the various individual elements in a logical manner.

(c) Profit and Costs Other than Labor, in Direct Labor Subcontracts - Enter, and provide details in supporting data, all of your level-of-effort subcontractors' costs except the labor costs entered under "Subcontract Direct Level of Effort Labor" above, and the profits or fees you expect to negotiate with the subcontractors. As noted previously, any such subcontractors should complete Forms A-1 through A-9 and B-1 through B-6.

(d) Specified Other Direct Costs in Accordance with B.4 - Costs of material and equipment, subcontracting, travel, and training are estimated by the Government to be \$700,000 per year (\$8,000 per month for the one-month options to extend). Subcontracting, material and equipment costs are expected to be 90 percent of the total, and travel and training are expected to be five percent each. If G&A or other burden applies to some or all of the costs, include under G&A and/of "Costs not Shown Elsewhere."

(e) Allocated Labor Other than G&A - Enter any non-G&A labor costs that will be allocated to the proposed contract through an indirect cost pool other than one entirely dedicated to the proposed contract.

(f) City/County Business License Tax - Consult applicable local jurisdictions to determine any applicable business license taxes and enter your estimates here. Consult the City of Hampton regarding personnel to be housed at LaRC even if your facility will not be located in Hampton.

(g) Costs not Shown Elsewhere - Enter any costs not covered by one of the preceding cost elements, facilities capital cost of money, or G&A.

(h) G&A - Enter G&A costs, and identify separately the rates used to determine the costs. Provide the composition of the G&A pool costs

and allocation bases upon which the rates were determined. Provide G&A rate history for the preceding three fiscal years.

(i) Facilities Capital Cost of Money - Enter FCCOM if you choose to include it in your proposal (please note L.12). If you do not propose FCCOM, Clause 52.215-31, WAIVER OF FACILITIES CAPITAL COST OF MONEY (SEPT 1987) will be included in the contract.

(j) Fixed Fee - Enter the amounts, and provide your rationale for determining the proposed amounts.

(k) Options to Increase the Level of Effort - Use Form C for the costs of the options to increase the level of effort specified by B.2.A., as follows:

	<u>Period</u>	<u>LOE Hours</u>
Initial Contract	2/1/95 - 1/31/96	18,750
First Option to Extend	2/1/96 - 1/31/97	18,750
Second Option to Extend	2/1/97 - 1/31/98	18,750
Third Option to Extend	2/1/98 - 1/31/99	18,750
Fourth Option to Extend	2/1/99 - 1/31/00	18,750
Each One-Month Option to Extend	2/1/00 - 7/31/00	1,560

It is estimated that the average labor cost for LOE hour options exercised will be at the weighted average straight-time rate of the following positions listed in Attachment 5: Simulation Analyst, Senior Simulation Programmer and Simulator Systems Engineer.

Please refer to the previous instructions for completing individual cost elements to make entries on Form C.

### 3. FACTOR 3 - RELEVANT EXPERIENCE AND PAST PERFORMANCE

You should submit a summary of your experience and performance history with respect to meeting technical objectives on schedule and within cost on related efforts. You should also submit a summary of the experience and performance history on related efforts of proposed subcontractors intended to perform a major role in the accomplishment of procurement objectives or to participate in a substantive manner. Experience is the accomplishment of work which is comparable or related to the work or effort required by this RFP. This factor includes the evaluation of overall corporate or offeror experience and past performance, but not the experience and performance of individuals who are proposed to be involved with work pursuant to this RFP. You are cautioned that omissions or an inaccurate or inadequate response to this very important evaluation factor will have a negative effect on your overall evaluation. Your summary should include the following for each related contract: contract number, contracting agency and address, telephone number, point of contact at agency, contract type, dollar value, dates contract began and ended or ends, description of contract work and explanation of relevance of work to this RFP, and actual delivery and cost performance versus delivery and cost agreed to in contract. For

award fee contracts, separately state in dollars the base fee and award fee available and the award fee actually received.

4. FACTOR 4 - OTHER CONSIDERATIONS

a. Subfactor 1 - Financial Condition and Capability

In order for your financial responsibility to be evaluated, you must submit profit and loss statements for your last three Fiscal Years and balance sheets as of the end of your last three Fiscal Years. In addition, indicate your current credit rating, lines of credit, sources of funds, and proposed means for financing any resulting contract.

b. Subfactor 2 - Contract Terms and Conditions

The offeror should cite any proposed exceptions that he may have to the terms and conditions, together with an explanation of the basis therefor, and his proposed means for resolving any such exceptions should be discussed. This same information for any additive terms and conditions should be provided.

c. Subfactor 3 - Subcontracting Plan for Small Business and Small Disadvantaged Business Concerns

The offeror (except small businesses) shall include a proposed subcontracting plan for small business and small disadvantaged business concerns for consideration in the source evaluation and selection process. The planned subcontracting amounts should be broken out and provided for each contract period, for a total contract duration of five years. This plan must comply with the Section I clause entitled, "Small Business and Small Disadvantaged Business Subcontracting Plan."

NOTE: Your proposed subcontracting goal to small disadvantaged business concerns shall include any planned subcontract awards to small disadvantaged business concerns as defined in FAR Clause 52.219-8 and Women-Owned Businesses, Historically Black Colleges and Universities, and other Minority Educational Institutions as defined in NASA FAR Supplement Clause 18-52.219-76.

SECTION M - EVALUATION FACTORS FOR AWARD

M.1 METHOD OF EVALUATION

Proposals received in response to this RFP will be evaluated by a NASA Source Evaluation Committee (SEC) in accordance with NASA Handbook (NHB) 5103.6B. Mission Suitability will be scored. Cost, Relevant Experience and Past Performance, and Other Considerations will not be scored. The Source Selection Official, after consultation with the SEC and other advisors, will select the offeror (or offerors) for final negotiation which he considers can perform the contract in a manner most advantageous to the Government, all factors considered.

M.2 ALTERNATE METHOD OF SCORING PROPOSALS (NASA 18-52.215-83)  
(NOV 1993)

NASA reserves the right to evaluate proposals received in response to this solicitation under either of the two scoring methods described in NASA FAR Supplement 18-15.613-71(b)(4) and 18-70.303, App. I, paragraph 407.6.d. Under the standard method, proposals are scored at the completion of initial evaluations and again upon completion of evaluations of Best and Final Offers (BAFOs). Under the alternate method, proposals are scored only after completion of BAFO evaluation.

M.3 EVALUATION FACTORS

A. Factor 1 - Mission Suitability - The content of this section of your proposal will provide the basis for evaluation of your response to the technical requirements of the RFP. The Mission Suitability Subfactors to be considered and scored in the evaluation of your Mission Suitability Proposal are set forth below:

1. Subfactor 1--Organization

This subfactor will be used to evaluate the adequacy and suitability of the proposed organization for performing the work efficiently and effectively. The following items will be evaluated:

- a. Corporate/company/team organization chart with supporting narrative, reflecting the contract units placement and reporting relationships within the company/team, and the role each will play in the contract management and performance.
- b. Contract unit's organization chart with supporting narrative for the organization proposed, the placement and reporting relationship of any subcontractor and/or team member within the contract unit, and integration of any subcontractor/team effort with the prime effort.
- c. Adequacy and distribution of management and administrative effort and supporting rationale.
- d. Designation of key positions and supporting rationale.
- e. Duties, responsibilities, authority and autonomy of key positions.
- f. Proposed subcontracting and/or teaming agreements, including the rationale for the arrangement, the qualifications of the subcontractor and/or team members, nature and extent of effort, and commitment of subcontractor and/or team members to this effort.
- g. Proposed interfaces with other elements of your company, the Government, and any subcontractors and/or team members.
- h. Corporate resources or support proposed for this contract effort and their availability.

## 2. Subfactor 2--Phase-in, Staffing and Continuing Personnel Management

This subfactor will be used to evaluate the effectiveness of your plans for initial phase-in, for minimizing changeover difficulties, maximizing continuity of services to the Government, and maintaining (after phase-in) competent staffing during the contract term (including all option periods). The following will be evaluated:

a. Description and schedule for completing all phase-in activities by February 1, 1995.

b. Your plans for reaching full complement of qualified personnel by the contract start date. Proposed recruitment methods and sources of personnel with percentage of initial workforce to be obtained from your own resources, other divisions of your company, subcontractor/teaming arrangements, outside recruitment, and incumbent workforce.

c. Basis for anticipated incumbent workforce retention.

d. Proposed skill mix.

e. Your proposed recruitment plans for highly-skilled and difficult-to-locate personnel for filling the following positions and any other positions deemed to be also. Including specific sources of recruitment, sources of advertisement, time frame required to effect hire, typical problems encountered in filling the vacancies and proposed solutions to the problems and past recruiting experiences and similar skills:

Senior Simulation Analyst  
Simulator Systems Engineer  
Senior Simulator Systems Specialist

f. Your company's programs and policies, including awards and incentive programs, for minimizing turnover and retaining experienced personnel for the term of the contract.

g. Your training, orientation and career development plans and objectives for new hires, on-board employees and changing requirements.

h. Suitability and equitableness of the total compensation plan (both salaries and fringe benefits) for non-professional employees.

## 3. Subfactor 3--Professional Compensation Plan

This subfactor will be used to evaluate the proposed compensation structure for professional employees to assure that highly qualified employees are attracted to perform the effort and their continued interest and employment are likely to occur.



a. Suitability and equitableness of the professional compensation plan (both salaries and fringe benefits) for professional employees.

4. Subfactor 4--Operations Plan

This subfactor will be used to evaluate your understanding of the Statement of Work requirements, both from a management and technical standpoint, and the approach for meeting those requirements. The following will be evaluated:

a. Your plans for assigning, prioritizing and supervising the work areas in the Statement of Work.

b. Your plans for performing the work areas in the Statement of Work.

c. Your plans for management of your work control system.

d. Your approach for recognizing, reporting, solving and follow-up on technical and schedule problems, including identification of typical problems and proposed solutions.

e. Your methods of real-time simulation program design, development, configuration management, documentation and integration to a simulator(s) to meet real-time requirements.

f. Your methods of design, maintenance, modification, calibration, operation, configuration management and documentation of flight simulation facilities and equipment.

g. Your approach to application of new technology to support real-time simulation.

h. Your plans for accommodating fluctuating workloads (up and down) and personnel absences.

i. Your approach to cost control, including cost reporting, tracking, controlling actual vs planned cost, forecasting, and overhead surveillance and tracking.

j. Your subcontracting policies and procedures, including specification development, solicitation preparation, evaluation, selection, award and management.

k. Your purchasing system policies and procedures, including approach to insuring efficient and effective expenditure of Government funds.

1. Effectiveness of your plans for motivating and incentivizing employees to continuously improve performance and increase productivity.

5. Subfactor 5--Key Personnel

This subfactor will be used to evaluate the proposed Key Personnel. The following will be evaluated:

- a. Education, experience and other qualifications (resumes) for each person proposed as a Key Person.
- b. Findings of reference checks.
- c. Capability and knowledge of Key Personnel evidenced at oral discussions, if held.
- d. Evidence, in writing, of availability and commitment of proposed Key Personnel at the proposed salary and fringe benefits.

B. Factor 2 - Cost--An analysis of the proposed cost and fee for the initial and priced option periods, and for the options for additional Level-of-Effort will be conducted to determine their validity and the extent to which they reflect performance addressed in the Mission Suitability proposal. An assessment will be made of the offeror's capability to accomplish the contract objectives within the estimated cost proposed. A probable cost will be developed in accordance with NHB 5103.6 for each proposal in the competitive range or, in the event the Alternate Evaluation Procedures are used, for each acceptable proposal. The reasonableness of the proposed fixed fee will also be determined in accordance with the guidelines set forth in NASA FAR Supplement 18-15.902. The cost proposal may be used as an aid to determine the offeror's understanding of Mission Suitability Requirements.

C. Factor 3 - Relevant Experience and Past Performance--Experience and past performance will be assessed to determine the extent to which contract objectives (including technical, schedule and cost) have been achieved on related efforts. Experience will be viewed as the demonstrated accomplishment of work which is comparable and relevant to the objectives of this procurement. This factor includes the evaluation of overall corporate or offeror experience and past performance, including major subcontractors, but not the experience and performance of individuals who are proposed to be involved in the required work. Independent verification will be made as needed.

D. Factor 4 - Other Considerations--The following subfactors will be evaluated based on information presented in the offeror's proposal and all information available to NASA.

1. Subfactor 1 - Financial Condition and Capability--An assessment will be made to determine if the offeror and all major subcontractors have adequate financial resources or the ability to obtain them to perform the contract. The soundness of the offeror's and all major subcontractor's financial positions will also be evaluated.

2. Subfactor 2 - Contract Terms and Conditions--The proposal will be reviewed to determine the extent to which terms and conditions as set forth in the RFP are accepted. The offeror's rationale for and the acceptability of any exceptions will be evaluated.

3. Subfactor 3 - Small Business and Small Disadvantaged Business Subcontracting Plan--A review of the offeror's plan will be made to determine the extent of the offeror's compliance with Government policy to afford maximum practicable opportunity for small and small disadvantaged business concerns to participate in Government contracts. This subfactor does not apply to small business offerors.

#### M.4 RELATIVE IMPORTANCE OF EVALUATION FACTORS

A. The weights to be used in the scoring of the Mission Suitability Subfactors are presented below:

<u>Subfactors</u>	<u>Weights</u>
1. Organization	10%
2. Phase-In, Staffing and Continuing Personnel Management	25%
3. Professional Compensation Plan	15%
4. Operations Plan	30%
5. Key Personnel	20%
	<u>Total 100%</u>

The weights assigned to the foregoing subfactors are indicative of the relative importance of these evaluation areas. The weights will be utilized by the Selection Official only as a guide.

B. Overall, in the selection of a Contractor for negotiation leading to contract award, Mission Suitability, Cost, Relevant Experience and Past Performance, and Other Considerations will be of essentially equal importance. Within Factor 2, Cost, the costs associated with the options for the additional level-of effort and the six 1-month option periods may be considered of less significance than the costs for the initial period (including phase-in) and the first through fourth priced options to extend the contract term.

ATTACHMENT 1  
CERTIFICATE OF CURRENT COST OR PRICING DATA

## ATTACHMENT 1

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
 LANGLEY RESEARCH CENTER  
 HAMPTON, VIRGINIA 23665-5225

CERTIFICATE OF CURRENT COST OR PRICING DATA

This is to certify that, to the best of my knowledge and belief, the cost or pricing data (as defined in Section 15.801 of the Federal Acquisition Regulation (FAR) and required under FAR Subsection 15.804-2) submitted, either actually or by specific identification in writing, to the Contracting Officer or the Contracting Officer's representative in support of \_\_\_\_\_\* are accurate, complete, and current as of \_\_\_\_\_\*\*  
 day month year

This certification includes the cost or pricing data supporting any advance agreements and forward pricing rate agreements between the offeror and the Government that are part of the proposal.

FIRM \_\_\_\_\_

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

\_\_\_\_\_  
 Date of Execution \*\*\*

\*Identify the proposal, quotation, request for price adjustment, or other submission involved, giving the appropriate identifying number (e.g., RFP No.).

\*\*Insert the day, month, and year when price negotiations were concluded and the price agreement was reached.

\*\*\*Insert the day, month, and year of signing, which should be as close as practicable to the date when the price negotiations were concluded and the contract price was agreed to.

ATTACHMENT 2  
CONTRACT PRICING PROPOSAL COVER SHEET

**CONTRACT PRICING PROPOSAL COVER SHEET**

1. SOLICITATION/CONTRACT/MODIFICATION NO.

FORM APPROVED OMB NO. 9000-0013

NOTE: This form is used in contract actions if submission of cost or pricing data is required. (See FAR 15.804-6(b))

2. NAME AND ADDRESS OF OFFEROR (Include ZIP Code)

3A. NAME AND TITLE OF OFFEROR'S POINT OF CONTACT

3B. TELEPHONE NO.

4. TYPE OF CONTRACT ACTION (Check)

- |  |   |
|--|---|
| <input type="checkbox"/> A. NEW CONTRACT                   | <input type="checkbox"/> D. LETTER CONTRACT |
| <input type="checkbox"/> B. CHANGE ORDER                   | <input type="checkbox"/> E. UNPRICED ORDER  |
| <input type="checkbox"/> C. PRICE REVISION/REDETERMINATION | <input type="checkbox"/> F. OTHER (Specify) |

5. TYPE OF CONTRACT (Check)

- FFP     CPFF     CPIF     CPAF  
 FPI     OTHER (Specify)

6. PROPOSED COST (A+B=C)

A. COST	B. PROFIT/FEE	C. TOTAL
\$	\$	\$

7. PLACE(S) AND PERIOD(S) OF PERFORMANCE

8. List and reference the identification, quantity and total price proposed for each contract line item. A line item cost breakdown supporting this recap is required unless otherwise specified by the Contracting Officer. (Continue on reverse, and then on plain paper, if necessary. Use same headings.)

A. LINE ITEM NO.	B. IDENTIFICATION	C. QUANTITY	D. TOTAL PRICE	E. REF.

9. PROVIDE NAME, ADDRESS, AND TELEPHONE NUMBER FOR THE FOLLOWING (If available)

A. CONTRACT ADMINISTRATION OFFICE

B. AUDIT OFFICE

10. WILL YOU REQUIRE THE USE OF ANY GOVERNMENT PROPERTY IN THE PERFORMANCE OF THIS WORK? (If "Yes," identify)

- YES     NO

11A. DO YOU REQUIRE GOVERNMENT CONTRACT FINANCING TO PERFORM THIS PROPOSED CONTRACT? (If "Yes," complete Item 11B)

- YES     NO

11B. TYPE OF FINANCING (if one)

- ADVANCE PAYMENTS     PROGRESS PAYMENTS  
 GUARANTEED LOANS

12. HAVE YOU BEEN AWARDED ANY CONTRACTS OR SUBCONTRACTS FOR THE SAME OR SIMILAR ITEMS WITHIN THE PAST 3 YEARS? (If "Yes," identify item(s), customer(s) and contract number(s))

- YES     NO

13. IS THIS PROPOSAL CONSISTENT WITH YOUR ESTABLISHED ESTIMATING AND ACCOUNTING PRACTICES AND PROCEDURES AND FAR PART 31 COST PRINCIPLES? (If "No," explain)

- YES     NO

14. COST ACCOUNTING STANDARDS BOARD (CASB) DATA (Public Law 91-379 as amended and FAR PART 30)

A. WILL THIS CONTRACT ACTION BE SUBJECT TO CASB REGULATIONS? (If "No," explain in proposal)

- YES     NO

B. HAVE YOU SUBMITTED A CASB DISCLOSURE STATEMENT (CASB DS-1 or 2)? (If "Yes," specify in proposal the office to which submitted and if determined to be adequate)

- YES     NO

C. HAVE YOU BEEN NOTIFIED THAT YOU ARE OR MAY BE IN NON-COMPLIANCE WITH YOUR DISCLOSURE STATEMENT OR COST ACCOUNTING STANDARDS? (If "Yes," explain in proposal)

- YES     NO

D. IS ANY ASPECT OF THIS PROPOSAL INCONSISTENT WITH YOUR DISCLOSED PRACTICES OR APPLICABLE COST ACCOUNTING STANDARDS? (If "Yes," explain in proposal)

- YES     NO

This proposal is submitted in response to the RFP, contract, modification, etc. in Item 1 and reflects our best estimates and/or actual costs as of this date and conforms with the instructions in FAR 15.804-6(b) (2), Table 15-2. By submitting this proposal, the offeror, if selected for negotiation, grants the contracting officer or an authorized representative the right to examine, at any time before award, those books, records, documents and other types of factual information, regardless of form or whether such supporting information is specifically referenced or included in the proposal as the basis for pricing, that will permit an adequate evaluation of the proposed price.

15. NAME AND TITLE (Type)

16. NAME OF FIRM

17. SIGNATURE

18. DATE OF SUBMISSION

## TABLE 15-2 INSTRUCTIONS FOR SUBMISSION OF A CONTRACT PRICING PROPOSAL\*

1. SF 1411 provides a vehicle for the offeror to submit to the Government a pricing proposal of estimated and/or incurred costs by contract line item with supporting information, adequately cross-referenced, suitable for detailed analysis. A cost-element breakdown, using the applicable format prescribed in 7A, B, or C below, shall be attached for each proposed line item and must reflect any specific requirements established by the contracting officer. Supporting breakdowns must be furnished for each cost element, consistent with offeror's cost accounting system. When more than one contract line item is proposed, summary total amounts covering all line items must be furnished for each cost element. If agreement has been reached with Government representatives on use of forward pricing rates/factors, identify the agreement, include a copy, and describe its nature. Depending on offeror's system, breakdowns shall be provided for the following basic elements of cost, as applicable:

**Materials**--Provide a consolidated priced summary of individual material quantities included in the various tasks, orders, or contract line items being proposed and the basis for pricing (vendor quotes, invoice prices, etc.). Include raw materials, parts, components, assemblies, and services to be produced or performed by others. For all items proposed, identify the item and show the source, quantity, and price.

**Competitive Methods**--For those acquisitions (e.g., subcontracts, purchase orders, material orders, etc.) over \$500,000 priced on a competitive basis, also provide data showing degree of competition, and the basis for establishing the source and reasonableness of price. For interorganizational transfers priced at other than cost of the comparable competitive commercial work of the division, subsidiary, or affiliate of the contractor, explain the pricing method (see 31.205-26(e)).

**Established Catalog or Market Prices/Prices Set by Law or Regulation**--When an exemption from the requirement to submit cost or pricing data is claimed, whether the item was produced by others or by the offeror, provide justification for the exemption as required by 15.804-3(e).

**Noncompetitive Methods**--For those acquisitions (e.g., subcontracts, purchase orders, material orders, etc.) over \$500,000 priced on a noncompetitive basis, also provide data showing the basis for establishing source and reasonableness of price. For standard commercial items fabricated by the offeror that are generally stocked in inventory, provide a separate cost breakdown if priced based on cost. For interorganizational transfers priced at cost, provide a separate breakdown of cost by elements. As required by 15.806-2(a), provide a copy of cost or pricing data submitted by the prospective source in support of each subcontract, or purchase order that is either (i) \$1,000,000 or more, or (ii) both more than \$500,000 and more than 10 percent of the prime contractor's proposed price. The contracting officer may require submission of cost or pricing data in support of proposals in lower amounts. Submit the results of the analysis of the prospective source's proposal as required by 15.806. When the submission of a prospective source's cost or pricing data is required as described above, it shall be included as part of the offeror's initial pricing proposal.

**Direct Labor**--Provide a time-phased (e.g., monthly, quarterly, etc.) breakdown of labor hours, rates, and cost by appropriate category, and furnish bases for estimates.

**Indirect Costs**--Indicate how offeror has computed and applied offeror's indirect costs, including cost breakdowns, and showing trends and budgetary data, to provide a basis for evaluating the reasonableness of proposed rates. Indicate the rates used and provide an appropriate explanation.

**Other Costs**--List all other costs not otherwise included in the categories described above (e.g., special tooling, travel, computer and consultant services, preservation, packaging and packing, spoilage and rework, and Federal excise tax on furnished articles) and provide bases for pricing.

**Royalties**--If more than \$250, provide the following information on a separate page for each separate royalty or license fee: name and address of licensor; date of license agreement; patent numbers, patent application serial numbers, or other basis on which the royalty is payable; brief description (including any part or model numbers of each contract item or component on which the royalty is payable); percentage or dollar rate of royalty per unit; unit price of contract item; number of units; and total dollar amount of royalties. In addition, if specifically requested by the contracting officer, provide a copy of the current license agreement and identification of applicable claims of specific patents. (See FAR 27.204 and 31.205-37).

**Facilities Capital Cost of Money**--When the offeror elects to claim facilities capital cost of money as an allowable cost, the offeror must submit Form CASB-CMB and show the calculation of the proposed amount (see FAR 31.205-10).

2. As part of the specific information required, the offeror must submit with offeror's proposal, and clearly identify as such, cost or pricing data (that is, data that are verifiable and factual and otherwise as defined at FAR 15.801). In addition, submit with offeror's proposal any information reasonably required to explain offeror's estimating process, including--

- a. The judgmental factors applied and the mathematical or other methods used in the estimate, including those used in projecting from known data; and
- b. The nature and amount of any contingencies included in the proposed price.

3. Whenever the offeror has incurred costs for work performed before submission of proposal, those costs must be identified in the offeror's cost/price proposal.

4. There is a clear distinction between submitting cost or pricing data and merely making available books, records, and other documents without identification. The requirement for submission of cost or pricing data is met when all accurate cost or pricing data reasonably available to the offeror have been submitted, either actually or by specific identification, to the contracting officer or an authorized representative. As later information comes into the offeror's possession, it should be promptly submitted to the contracting officer. The requirement for submission of cost or pricing data continues up to the time of final agreement on price.

5. In submitting offeror's proposal, offeror must include an index, appropriately referenced, of all the cost or pricing data and information accompanying or identified in the proposal. In addition, any future additions and/or revisions, up to the date of agreement on price, must be annotated on a supplemental index.

\*Federal Acquisition Regulation, paragraph 15.804-6(b).



6. By submitting offeror's proposal, the offeror, if selected for negotiation, grants the contracting officer or an authorized representative the right to examine, at any time before award, those books, records, documents, and other types of factual information, regardless of form or whether such supporting information is specifically referenced or included in the proposal as the basis for pricing, that will permit an adequate evaluation of the proposed price.

7. As soon as practicable after final agreement on price, but before the award resulting from the proposal, the offeror shall, under the conditions stated in FAR 15.804-4, submit a Certificate of Current Cost or Pricing Data.

8. HEADINGS FOR SUBMISSION OF LINE-ITEM SUMMARIES:

A. New Contracts (including Letter contracts).

COST ELEMENTS	PROPOSED CONTRACT ESTIMATE-TOTAL COST	PROPOSED CONTRACT ESTIMATE-UNIT COST	REFERENCE
(1)	(2)	(3)	(4)

Under Column (1)--Enter appropriate cost elements.

Under Column (2)--Enter those necessary and reasonable costs that in offeror's judgment will properly be incurred in efficient contract performance. When any of the costs in this column have already been incurred (e.g., under a letter contract or unpriced order), describe them on an attached supporting schedule. When preproduction or startup costs are significant, or when specifically requested to do so by the contracting officer, provide a full identification and explanation of them.

Under Column (3)--Optional, unless required by the contracting officer.

Under Column (4)--Identify the attachment in which the information supporting the specific cost element may be found. Attach separate pages as necessary.

B. Change Orders Modifications, and Claims.

COST ELEMENTS	ESTIMATED COST OF ALL WORK DELETED	COST OF DELETED WORK ALREADY PERFORMED	NET COST TO BE DELETED	COST OF WORK ADDED	NET COST OF CHANGE	REFERENCE
(1)	(2)	(3)	(4)	(5)	(6)	(7)

Under Column (1)--Enter appropriate cost elements.

Under Column (2)--Include (i) current estimates of what the cost would have been to complete deleted work not yet performed, and (ii) the cost of deleted work already performed.

Under Column (3)--Include the incurred cost of deleted work already performed, actually computed if possible, or estimated in the contractor's accounting records. Attach a detailed inventory of work, materials, parts, components, and hardware already purchased, manufactured, or performed and deleted by the change, indicating the cost and proposed disposition of each line item. Also, if offeror desires to retain these items or any portion of them, indicate the amount offered for them.

Under Column (4)--Enter the net cost to be deleted which is the estimated cost of all deleted work less the cost of deleted work already performed. Column (2) less Column (3) = Column (4).

Under Column (5)--Enter the offeror's estimate for cost of work added by the change. When nonrecurring costs are significant, or when specifically requested to do so by the contracting officer, provide a full identification and explanation of them. When any of the costs in this column have already been incurred, describe them on an attached supporting schedule.

Under Column (6)--Enter the net cost of change which is the cost of work added, less the net cost to be deleted. When this result is negative, place the amount in parentheses. Column (4) less Column (5) = Column (6).

Under Column (7)--Identify the attachment in which the information supporting the specific cost element may be found. Attach separate pages as necessary.

C. Price Revision/Redetermination.

CUTOFF DATE	NUMBER OF UNITS COMPLETED	NUMBER OF UNITS TO BE COMPLETED	CONTRACT AMOUNT	REDETERMINATION PROPOSAL AMOUNT	DIFFERENCE
(1)	(2)	(3)	(4)	(5)	(6)

COST ELEMENTS	INCURRED COST- PREPRODUCTION	INCURRED COST- COMPLETED UNITS	INCURRED COST- WORK IN PROGRESS	TOTAL INCURRED COST	ESTIMATED COST TO COMPLETE	ESTIMATED TOTAL COST	REFERENCE
(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)

Under Column (1)--Enter the cutoff date required by the contract if applicable.

Under Column (2)--Enter the number of units completed during the period for which experienced costs of production are being submitted.

Under Column (3)--Enter the number of units remaining to be completed under the contract.

Under Column (4)--Enter the cumulative contract amount.

Under Column (5)--Enter the offeror's redetermination proposal amount.

Under Column (6)--Enter the difference between the contract amount and the redetermination proposal amount. When this result is negative, place the amount in parenthesis. Column (4) less Column (5) = Column (6).

Under Column (7)--Enter appropriate cost elements. When residual inventory exists, the final costs established under fixed-price-incentive and fixed-price-redeterminable arrangements should be net of the fair market value of such inventory. In support of subcontract costs, submit a listing of all subcontracts subject to repricing action, annotated as to their status.

Under Column (8)--Enter all costs incurred under the contract before starting production and other nonrecurring costs (usually referred to as startup costs) from offeror's books and records as of the cutoff date. These include such costs as preproduction engineering, special plant rearrangement, training program, and any identifiable nonrecurring costs such as initial rework, spoilage, pilot runs, etc. In the event the amounts are not segregated in or otherwise available from offeror's records, enter in this column offeror's best estimates. Explain the basis for each estimate and how the costs are charged on offeror's accounting records (e.g., included in production costs as direct engineering labor, charged to manufacturing overhead, etc.). Also show how the costs would be allocated to the units at their various stages of contract completion.

Under Columns (9) and (10)--Enter in Column (9) the production costs from offeror's books and records (exclusive of preproduction costs reported in Column (8)) of the units completed as of the cutoff date. Enter in Column (10) the costs of work in process as determined from offeror's records or inventories at the cutoff date. When the amounts for work in process are not available in contractor's records but reliable estimates for them can be made, enter the estimated amounts in Column (10) and enter in Column (9) the differences between the total incurred costs (exclusive of preproduction costs) as of the cutoff date and these estimates. Explain the basis for the estimates, including identification of any provision for experienced or anticipated allowances, such as shrinkage, rework, design changes, etc. Furnish experienced unit or lot costs (or labor hours) from inception of contract to the cutoff date, improvement curves, and any other available production cost history pertaining to the item(s) to which offeror's proposal relates.

Under Column (11)--Enter total incurred costs (Total of Column (8), (9), and (10)).

Under Column (12)--Enter those necessary and reasonable costs that in contractor's judgment will properly be incurred in completion the remaining work to be performed under the contract with respect to the item(s) to which contractor's proposal relates.

Under Column (13)--Enter total estimated cost (Total of Column (11) and (12)).

Under Column (14)--Identify the attachment in which the information supporting the specific cost element may be found. Attach separate pages as necessary.

**ATTACHMENT 3**  
**REQUIREMENT FOR CERTIFICATE OF PROCUREMENT INTEGRITY**

REQUIREMENT FOR CERTIFICATE OF PROCUREMENT INTEGRITY  
(FAR 52.203-8) (NOV 1990) ALTERNATE I (SEP 1990)

- (a) Definitions. The definitions at FAR 3.104-4 are hereby incorporated in this provision.  
(b) Certifications. As required in paragraph (c) of this provision, the officer or employee responsible for this offer shall execute the following certification:

CERTIFICATE OF PROCUREMENT INTEGRITY

(1) I, \_\_\_\_\_  
[Name of certifier]

am the officer or employee responsible for the preparation of this offer and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certificate, I have no information concerning a violation or possible violation of subsections 27(a), (b), (d), or (f) of the Office of Federal Procurement Policy Act, as amended\* (41 U.S.C. 423), (hereinafter referred to as "the Act"), as implemented in the FAR, occurring during the conduct of this procurement

\_\_\_\_\_ (solicitation number)

(2) As required by subsection 27(e)(1)(B) of the Act, I further certify that, to the best of my knowledge and belief, each officer, employee, agent, representative, and consultant of \_\_\_\_\_

\_\_\_\_\_ [Name of offeror]

who has participated personally and substantially in the preparation or submission of this offer has certified that he or she is familiar with, and will comply with, the requirements of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a violation or possible violation of subsection 27(a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.

(3) Violations or possible violations: (Continue on plain bond paper if necessary and label Certificate of Procurement Integrity (Continuation Sheet), ENTER NONE IF NONE EXIST) \_\_\_\_\_

(4) I agree that, if awarded a contract under this solicitation, the certifications required by subsection 27(e)(1)(B) of the Act shall be maintained in accordance with paragraph (f) of this provision.

\_\_\_\_\_  
[Signature of the officer or employee responsible for the offer and date]

\_\_\_\_\_  
[Typed name of the officer or employee responsible for the offer]

\*Subsections 27(a), (b), and (d) are effective on December 1, 1990.  
Subsection 27(f) is effective on June 1, 1991.

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER TITLE 18, UNITED STATES CODE, SECTION 1001.

(End of certification)

Continued on reverse

(c) For procurements, including contract modifications, in excess of \$100,000 made using procedures other than sealed bidding, the signed certifications shall be submitted by the successful Offeror to the Contracting Officer within the time period specified by the Contracting Officer when requesting the certificates except as provided in subparagraphs (c)(1) through (c)(5) of this clause. In no event shall the certificate be submitted subsequent to award of a contract or execution of a contract modification:

(1) For letter contracts, other unpriced contracts, or unpriced contract modifications, whether or not the unpriced contract or modification contains a maximum or not to exceed price, the signed certifications shall be submitted prior to the award of the letter contract, unpriced contract, or unpriced contract modification, and prior to the definitization of the letter contract or the establishment of the price of the unpriced contract or unpriced contract modification. The second certification shall apply only to the period between award of the letter contract and execution of the document definitizing the letter contract, or award of the unpriced contract or unpriced contract modification and execution of the document establishing the definitive price of such unpriced contract or unpriced contract modification.

(2) For basic ordering agreements, prior to the execution of a priced order; prior to the execution of an unpriced order, whether or not the unpriced order contains a maximum or not to exceed price; and, prior to establishing the price of an unpriced order. The second certificate to be submitted for unpriced orders shall apply only to the period between award of the unpriced order and execution of the document establishing the definitive price for such order.

(3) A certificate is not required for indefinite delivery contracts (see Subpart 16.5) unless the total estimated value of all orders eventually to be placed under the contract is expected to exceed \$100,000.

(4) For contracts and contract modifications which include options, a certificate is required when the aggregate value of the contract or contract modification and all options (see 3.104-4(e)) exceeds \$100,000.

(5) For purposes of contracts entered into under section 8(a) of the SBA, the business entity with whom the SBA contracts, and not the SBA, shall be required to comply with the certification requirements of subsection 27(e). The SBA shall obtain the signed certificate from the business entity and forward the certificate to the Contracting Officer prior to the award of a contract to the SBA.

(6) Failure of an Offeror to submit the signed certificate within the time prescribed by the Contracting Officer shall cause the offer to be rejected.

(d) Pursuant to FAR 3.104-9(d), the Offeror may be requested to execute additional certifications at the request of the Government. Failure of an Offeror to submit the additional certifications shall cause its offer to be rejected.

(e) A certification containing a disclosure of a violation or possible violation will not necessarily result in the withholding of award under this solicitation. However, the Government, after evaluation of the disclosure, may cancel this procurement or take any other appropriate actions in the interests of the Government, such as disqualification of the Offeror.

(f) In making the certification in paragraph (2) of the certificate, the officer or employee of the competing contractor responsible for the offer may rely upon a onetime certification from each individual required to submit a certification to the competing Contractor, supplemented by periodic training. These certifications shall be obtained at the earliest possible date after an individual required to certify begins employment or association with the contractor. If a contractor decides to rely on a certification executed prior to suspension of Section 27 (i.e., prior to December 1, 1989), the contractor shall ensure that an individual who has so certified is notified that Section 27 is reinstated. These certifications shall be maintained by the Contractor for 6 years from the date a certifying employee's employment with the company ends or, for an agent, representative, or consultant, 6 years from the date such individual ceases to act on behalf of the Contractor.

(g) The certifications in paragraphs (b) and (d) of this provision are a material representation of fact upon which reliance will be placed in awarding a contract.

**ATTACHMENT 4**  
**COST PROPOSAL FORMS A1 THROUGH C**

## ATTACHMENT 4

## REPRESENTATIVE COST FORMS

The following cost forms must be submitted with proposals, on diskette and on paper. (see also attachment 2, Standard Form 1411.)

	Forms	Period
Initial Contract Period	A-1, B-1	2/1/95 - 1/31/96
First Option to Extend	A-2, B-2	2/1/96 - 1/31/97
Second Option to Extend	A-3, B-3	2/1/97 - 1/31/98
Third Option to Extend	A-4, B-4	2/1/98 - 1/31/99
Fourth Option to Extend	A-5, B-5	2/1/99 - 1/31/00
Total, Init. Contr. and Options to Ext. 1 - 4	A-6	2/1/95 - 1/31/00
Options to Extend 5 - 10 (One Mo. Each)	A-7, B-6	2/1/00 - 7/31/00
Total, Init. Contr. and All Options to Ext.	A-8	2/1/95 - 7/31/00
Options to Increase Level of Effort	C	2/1/95 - 7/31/00
Total, Phase-In, Init. Contr. and All Opts.	A-9	Phs. In - 7/31/00

Since all the A series forms are similar and all the B series forms are similar, only A-1, B-1, and C are shown in this attachment. See section L.35.C.1.a for information on obtaining diskettes containing the full set of forms, and instructions for completing the forms.

COST PROPOSAL SUMMARY

Solicitation 1-120-1150.3058

Proposer: \_\_\_\_\_

Initial Contract, February 1, 1995 through January 31, 1997

DIRECT LABOR COSTS:	Hours	Costs
Straight Time Direct Labor .....	_____	_____
Overtime Excluding Premium .....	_____	_____
Overtime Premium .....	_____	_____
Subcontract Direct Level of Effort Labor, if Any .....	-	_____
<b>TOTAL DIRECT LABOR COST .....</b>		<b>_____</b>

FRINGES AND PAYROLL TAXES:

FICA .....	_____
FUI .....	_____
SUI .....	_____
Worker's Compensation .....	_____
General Liability Insurance .....	_____
Medical/Dental Insurance .....	_____
Life/Disability Insurance .....	_____
Paid Absence .....	_____
Other Fringe (Specify) .....	_____
Other Fringe (Specify) .....	_____
All Others Fringes (Itemize separately) .....	_____
<b>TOTAL FRINGES AND PAYROLL TAXES .....</b>	<b>_____</b>

OTHER:

Profit and Costs Other than Labor, in Direct Labor Subcontracts .....	_____
Specified Other Direct Costs in Accordance with B.4. of Contract .....	<u>1,400,000</u>
Allocated Labor Other than G & A .....	_____
Housing for Contract Manager and any necessary support .....	_____
City/County Business License Tax .....	_____
Costs not shown Elsewhere (Provide Separate Detail) .....	_____
<b>TOTAL OTHER .....</b>	<b>_____</b>

G & A .....	_____
FACILITIES CAPITAL COST OF MONEY .....	_____
<b>TOTAL COST .....</b>	<b>_____</b>
FIXED FEE .....	_____
<b>COST PLUS FIXED FEE .....</b>	<b>_____</b>



Form No. B-1

## LABOR COST SUMMARY

Solicitation 1-120-1150.3058

Proposer: \_\_\_\_\_

Initial Contract, February 1, 1995 through January 31, 1997

RFP Position Titles	No. Pos.	Hours	Rates	Costs
Contract Manager				
Real-Time Simul. Analysis and Progr. Mgr.				
Simulator Engineering, Oper. and Maint. Mgr.				
Senior Simulation Analyst				
Simulation Analyst				
Senior Simulation Programmer				
Simulation Programmer				
Simulator Systems Engineer				
Senior Simulator Systems Specialist				
Senior Computer Systems Specialist				
Simulator Systems Specialist				
Electronics Technician				
Other				
Total Straight-Time Labor				
Overtime (Excluding Premium)			4,000	
Overtime Premium				
Total Labor				

Include above any level of effort labor to be provided by subcontract, and show details on an attachment.

OPTIONS TO INCREASE THE LEVEL OF EFFORT

Solicitation 1-120-1150.3058  
 Proposer \_\_\_\_\_

	Initial Contract Period 2/1/95- 1/31/96	First Ext.Option Period 2/1/96- 1/31/97	Second Ext.Option Period 2/1/97- 1/31/98	Third Ext.Option Period 2/1/98- 1/31/99	Fourth Ext.Option Period 2/1/99- 1/31/00	5 Yr. Total, Initial and Opt. 1 - 4 2/1/95- 1/31/00
TOTAL DIRECT LABOR HOURS .....	18,750	18,750	18,750	18,750	18,750	93,750
TOTAL DIRECT LABOR COSTS .....						
SUBCONTRACT DIRECT LEVEL OF EFFORT LABOR COSTS .....						
FRINGES AND PAYROLL TAXES .....						
OTHER:						
Profit and Costs Other than Labor, in Direct Labor Subcontracts ..						
Allocated Labor Other than G & A .....						
City/County Business License Tax .....						
Costs not shown Elsewhere (Provide Separate Detail) .....						
TOTAL OTHER .....						
G & A .....						
FACILITIES CAPITAL COST OF MONEY .....						
TOTAL COST .....						
FIXED FEE .....						
COST PLUS FIXED FEE .....						
COST PER LOE HOUR .....						
FIXED FEE PER LOE HOUR .....						

ATTACHMENT 5

GOVERNMENT ESTIMATED STAFFING REQUIREMENTS  
AND MINIMUM POSITION QUALIFICATIONS

## ATTACHMENT 5

GOVERNMENT ESTIMATED STAFFING REQUIREMENTS  
AND MINIMUM POSITION QUALIFICATIONS

## 1.0 SUMMARY OF ESTIMATED POSITIONS

<u>Job Title</u>	<u>Number of Estimated Positions</u>	<u>Wage Determination Positions (Exhibit B)</u>
Senior Simulation Analyst	3	N/A
Simulation Analyst	9	N/A
Senior Simulation Programmer	9	N/A
Simulation Programmer	8	N/A
Simulator Systems Engineer	3	N/A
Senior Simulator Systems Specialist	2	Engineering Tech. VI
Senior Computer Systems Specialist	2	Engineering Tech. V
Simulator Systems Specialist	2	Engineering Tech. IV
Electronics Technician	2	Engineering Tech. III
Total Estimated Positions	40	

## 2.0 REAL-TIME SIMULATION ANALYSIS AND PROGRAMMING

## 2.1 SENIOR SIMULATION ANALYST (3 positions estimated)

## Senior Simulation Analyst A

- Should have a Master of Science degree in engineering, mathematics, physics or computer science; or a Bachelor of Science degree in engineering, mathematics, physics or computer science and at least 24 credit hours of relevant graduate level courses and/or specialized training (industry training programs, military training programs, etc.) in topic areas related to high speed/performance aircraft, such as fighters, high speed civil transport, aerospaceplane, etc.
- Should have a minimum of 10 years experience in computer applications and/or software engineering as applied to the solution of aerospace problems with a concentration in the specific areas of high speed/performance aircraft, control system development and implementation, etc. Should have current experience in state-of-the-art real-time simulation technology.
- Should have strong work experience in the development, verification and validation of complete aircraft simulations including but not limited to the following topic areas: equations of motion, aerodynamics, engine models, control systems, environmental models, numerical techniques, etc.

## Senior Simulation Analyst B

- Should have a Master of Science degree in engineering, mathematics, physics or computer science; or a Bachelor of Science degree in engineering, mathematics, physics or computer science and at least 24 credit hours of relevant graduate level courses and/or specialized training (industry training programs, military training programs, etc.) in topic areas related to subsonic aircraft such as civil transport aircraft, general aviation aircraft, etc.
- Should have a minimum of 10 years experience in computer applications and/or software engineering as applied to the solution of aerospace problems with a concentration in the specific areas of civil transport aircraft, general aviation aircraft, and guidance, navigation and control, etc. Should have current experience in state-of-the-art real-time simulation technology.
- Should have strong work experience in the development, verification, and validation of complete aircraft simulations including but not limited to the following topic areas: equations of motion, aerodynamics, engine models, control systems, environmental models, numerical techniques, etc.

## Senior Simulation Analyst C

- Should have a Master of Science degree in engineering, mathematics, physics or computer science; or a Bachelor of Science degree in engineering, mathematics, physics or computer science and at least 24 credit hours of relevant graduate level courses and/or specialized training (industry training programs, military training programs, etc.) in topic areas related to real-time graphics display systems, computer systems, etc.
- Should have a minimum of 10 years experience in computer applications (both hardware and software) as applied to the solution of aerospace problems with a concentration in the specific areas of real-time graphic display systems (both stroke and raster), peripheral systems including mini and microcomputers, and real-time computer operating systems and computer languages. Should have current experience in state-of-the-art real-time simulation technology.
- Should have strong work experience in the development, verification, and validation of cockpit display systems (both hardware and software, raster and stroke systems), interprocess communications, intercomputer communications, etc. Should have experience with Unix operating systems, real-time operating systems, Digital Equipment Corporation (DEC) operating system, Xenix operating system, Silicon Graphics IRIS graphics systems, Terabit graphics systems. Experience in FORTRAN, C, and microprocessor assembly languages is required.

## 2.2 SIMULATION ANALYST (9 positions estimated)

- Should have a Bachelor of Science degree in engineering, mathematics, physics or computer science and at least 12 credit hours of relevant graduate level courses and/or specialized training (industry training programs, military training programs, etc.) in one of these areas.
- Should have a minimum of 10 years experience in computer applications and/or software engineering as applied to the solution of aerospace problems. Should have current experience in state-of-the-art simulation technology.
- At least 2 positions of the 9 positions should have current experience in the specific areas of high speed/performance aircraft, control system development and implementation, etc.
- At least 2 positions of the 9 positions should have current experience in the specific areas of civil transport aircraft, general aviation aircraft, and guidance, navigation and control, etc.
- At least 2 positions of the 9 positions should have current experience in the specific areas of real-time graphic display systems (both stroke and raster), peripheral systems including mini and microcomputers, and real-time computer operating systems and computer languages.

## 2.3 SENIOR SIMULATION PROGRAMMER (9 positions estimated)

- Should have a Bachelor of Science degree in engineering, mathematics, physics or computer science and at least 6 credit hours of relevant graduate level courses and/or specialized training (industry training programs, military training programs, etc.) in one of these areas.
- Should have a minimum of 6 years experience in computer applications and/or software engineering as applied to the solution of aerospace problems, of which 3 years should be related to digital computer applications in real-time flight simulation.
- At least 2 positions of the 9 positions should have current experience in the specific areas of high speed/performance aircraft, control system development and implementation, etc.
- At least 2 positions of the 9 positions should have current experience in the specific areas of civil transport aircraft, general aviation aircraft, and guidance, navigation and control, etc.
- At least 2 positions of the 9 positions should have current experience in the specific areas of real-time graphic display systems (both stroke and raster), peripheral systems including mini and microcomputers, and real-time computer operating systems and computer languages.

- At least 1 position of the 9 positions should have experience developing and/or modifying databases for Evans and Sutherland ESIG 3000 Computer Generated Image Systems. For this position, a Bachelor of Science or Arts degree with coursework in database related fields such as photography or art will be acceptable.

#### 2.4 SIMULATION PROGRAMMER (8 positions estimated)

- Should have a Bachelor of Science degree in engineering, mathematics, physics or computer science.
- Should have programming experience in FORTRAN and/or C languages.

### 3.0 SIMULATOR ENGINEERING, OPERATIONS AND MAINTENANCE

#### 3.1 SIMULATOR SYSTEMS ENGINEER (3 positions estimated)

- Should have a Bachelor of Science degree in engineering, preferably in electrical or mechanical engineering. It is highly desirable that at least one position have a Master of Science degree in engineering or at least 24 credit hours of relevant graduate level courses.
- Should have a minimum of 10 years experience in electronic systems design for flight simulator applications relevant to real-time man-in-the-loop flight simulation. Should have at least 6 years of specialized experience performing system level design of large scale simulation systems including mechanical, electromechanical, electronics, servo mechanisms, closed circuit TV, special purpose computing equipment and peripherals, and hydraulic systems.
- Should have experience in using sophisticated electronics test and measurement equipment to efficiently diagnose and resolve complex technical and engineering problems.

#### 3.2 SENIOR SIMULATOR SYSTEMS SPECIALIST (2 positions estimated)

- Should have a high school diploma or GED. At least 2 years training from an accredited electronics technical school or an equivalent amount of training in electrical, electronics, mechanical, or other technical discipline. Appropriate armed services technical schools, industrial training programs, or work experience may be substituted for formal electronics training.
- Should have a minimum of 8 years experience in simulation technology design, development and operations.
- Should have at least 4 years of specialized experience performing system level maintenance of large scale simulation systems such as mechanical, electromechanical, electronic, and hydraulic systems, servo mechanisms, and closed circuit TV systems.

### 3.3 SENIOR COMPUTER SYSTEMS SPECIALIST (2 positions estimated)

- Should have a high school diploma or GED. At least 2 years training from an accredited electronics technical school or an equivalent amount of training in electrical, electronics, mechanical, or other technical discipline. Appropriate armed services technical schools, industrial training programs, or work experience may be substituted for formal electronics training.
- Should have a minimum of 8 years experience in computer design, development and operations.
- Should have at least 4 years of specialized experience performing system level maintenance of large scale computing systems, including special purpose computing equipment, graphics generating computers, microprocessors, and computer peripherals.

### 3.4 SIMULATOR SYSTEMS SPECIALIST (2 positions estimated)

- Should have a high school diploma or GED. At least 2 years training from an accredited electronics technical school or an equivalent amount of training in electrical, electronics, mechanical, or other technical discipline. Appropriate armed services technical schools, industrial training programs, or work experience may be substituted for formal electronics training.
- Should have a minimum of 6 years experience in simulation technology development and operations, conducting non-standard simulation procedures and tests, developing simulation systems and subsystems, compiling/processing engineering test data, identifying errors, and selecting methods of data presentation.
- Should have a minimum of 2 years of specialized experience performing system level maintenance of large scale simulation systems such as mechanical, electromechanical, electronic, and hydraulic systems, servo mechanisms, and closed circuit TV systems.

### 3.5 ELECTRONICS TECHNICIAN (2 positions estimated)

- Should have a high school diploma or GED. At least 2 years training from an accredited electronics technical school or an equivalent amount of training in electrical, electronics, mechanical, or other technical discipline. Appropriate armed services technical schools, industrial training programs, or work experience may be substituted for formal electronics training.
- Should have a minimum of 4 years experience in conducting non-standard electronics tests, constructing breadboards, performing modifications to simulation systems, compiling/processing engineering test data, and performing complex operations and preventive maintenance procedures.



- Should have a minimum of 2 years of specialized experience in performing maintenance and operations of large scale simulation systems or computing systems.

ATTACHMENT 6  
KEY PERSONNEL MINIMUM REQUIREMENTS

## ATTACHMENT 6

## KEY PERSONNEL MINIMUM REQUIREMENTS

## CONTRACT MANAGER

Should have a Master of Science degree in engineering, mathematics, physics, or computer science; or a Bachelor of Science degree in engineering, mathematics, physics, or computer science and at least 24 credit hours of relevant graduate level work in topic areas such as aerodynamics, dynamics, mechanics, control systems, numerical analysis and methods, computer languages, analog and digital electronics, and electromechanical design.

Should have a minimum of 10 years experience in simulation systems development with strong work experience in either the Real-Time Simulation Analysis and Programming or Simulator Engineering, Operations and Maintenance Work Areas, and general experience in the other area.

Should have progressively responsible technical and managerial experience in flight simulation including a minimum of 5 years total experience in performing managerial, technical and administrative duties required by the position of contract manager on a contract of the size and diversity of this proposed effort. Should have management experience in current real-time man-in-the-loop simulation systems and applications.

## REAL-TIME SIMULATION ANALYSIS and PROGRAMMING MANAGER

Should have a Master of Science degree in engineering, mathematics, physics, or computer science; or a Bachelor of Science degree in engineering, mathematics, physics, or computer science and at least 24 credit hours of relevant graduate level work in topic areas such as aerodynamics, dynamics, mechanics, control systems, numerical analysis and methods, and computer languages and operating systems.

Should have a minimum of 10 years experience in computer applications and software development for the solution of aerospace simulation problems. Should have strong experience in the concept definition, analysis, design, implementation, verification, validation, operation, maintenance and documentation of large, complex real-time man-in-the-loop simulation projects which include motion, visual, graphic display, and force-feel cue systems.

Should have a minimum of 5 years total experience in technical and administrative management in the application of digital computers to real-time man-in-the-loop flight simulation. Should have management experience in current simulation systems and applications relevant to real-time man-in-the-loop flight simulation.

## SIMULATOR ENGINEERING, OPERATIONS AND MAINTENANCE MANAGER

Should have a Master of Science degree in engineering, preferably in electrical or mechanical engineering; or a Bachelor of Science degree in electrical or

mechanical engineering, and at least 24 credit hours of relevant graduate level work in topic areas such as analog electronics, digital electronics and electromechanical equipment design.

Should have a minimum of 10 years experience in electronic systems design for flight simulator applications relevant to real-time man-in-the-loop flight simulation. Should have strong experience in the concept definition, analysis, design, implementation, verification, validation, operation, maintenance and documentation of flight simulators and simulator subsystems including motion, visual, aural, graphic display and force-feel cue systems.

Should have a minimum of 5 years total experience in technical and administrative management over a team of engineers and technicians performing development, operation and maintenance of flight simulators and computing equipment. Should have management experience in current simulation systems and subsystems relevant to real-time man-in-the-loop flight simulation.

## ATTACHMENT 7

DESCRIPTION OF LANGLEY RESEARCH CENTER'S ADVANCED  
REAL-TIME SIMULATION SYSTEM (ARTSS)

Figure 1 gives a generalized block diagram of the LaRC ARTSS. Following is a brief description of each major component of this system.

Mainframe Computers - The mainframe computers are used to provide a mathematical solution of an aircraft simulation model. The computer complex has two mainframe computers allocated for simulation, a Convex C3840 and a Convex C3820. Both machines have multiple central processors available for real-time simulation. The C3840 has four CPUs of which three are available for real-time. The additional CPU is used to run the UNIX operating system. The C3820 has two CPUs, of which one can be used for real-time and one is reserved for UNIX. Multiple CPUs allow multiple real-time simulation programs to be run concurrently. Using the shared memory capability of the Convex computers, a single simulation may use as many as three CPUs on the C3840.

CAMAC Highway - A CAMAC Highway is a high-speed digital network that links the mainframe computers with the simulator site hardware. Each highway is made up of several devices - the Block Transfer Serial Highway Driver (BTSHD), the Switch Network, the Fiber-optic highways, and the site crate highway interface that varies with the type of simulator site. Each of these devices will be discussed.

The ARTSS contains six highways that can be used to support up to four totally independent simulations running concurrently.

Block Transfer Serial Highway Driver (BTSHD) - This unit provides the link between the mainframe computer and the CAMAC serial highway. The BTSHD is the highway master and directs all communications between the mainframe computer and the simulator site crate modules. The maximum transfer rate of the CAMAC serial highway is 24 million bits per second. On the highway side of the BTSHD, the data is transmitted "byte serial" (eight data bits and one 5 MHz clock bit).

Switch Network - The purpose of the switch network is to provide complete connectivity between the simulation applications program on the mainframe computer and the various simulation sites. Upon request, any sensible arrangement of available simulation sites can be combined into a local computer network in support of simulation. The network configuration for a given simulation is done during the initialization phase after a highway has been assigned by the scheduling software. The applications job requests the sites to be configured and if these sites are available, the switch system will configure the requested network without disturbing other running simulations. The switch matrix performs the actual highway/site switching. The switch matrix has the capability to connect any of 28 simulator sites to any of 6 highways. Expansion of the switch will allow up to 36 sites and 12 highways.

Fiber-Optic Highway - At the switch system the electrical signals are converted to light signals by a fiber-optic transmitter/receiver, called a Fiber-Optic

ATTACHMENT 7

DESCRIPTION OF LANGLEY RESEARCH CENTER'S ADVANCED REAL-TIME  
SIMULATION SYSTEM (ARTSS)

Universal Port Adapter (FOUPA). This allows the connection of sites that are located up to one mile away from the switch.

The fiber-optic highway consists of two components: a pair (one at the switch and one at the simulator site) of FOUPA modules to convert signals from electrical to light and vice-versa, and a transmission line made up of light conducting fibers. Each FOUPA contains both a transmitter that converts the 8-bit wide plus clock byte serial electrical signal to a 1-bit serial (50 MHz) light signal that is transmitted through the fiber-optic cable and a receiver that receives the light signal from the cable and converts this signal to a 8-bit wide plus clock "byte serial" electrical signal.

Block Transfer Serial Crate Controller - The final element in the CAMAC Highway is the Block Transfer Serial Crate Controller (BTSCC) located in the site crate. A crate is a physical circuit card cage used to hold devices in the CAMAC network. Every site must have exclusive use of at least one crate; however, a site may have multiple crates. The crate dataway is the backplane bus which connects the various CAMAC cards. Each crate at the site has a BTSCC. The FOUPA transmits the 9-bit wide "byte serial" data to the BTSCC of the first crate of the simulator site and, for those sites with multiple crates, receives 9-bit wide "byte serial" data from the BTSCC of the last crate in the site. The BTSCC manipulates and conditions the data from the FOUPA to make it compatible to communicate to the crate dataway; vice-versa, data from the crate dataway is manipulated and conditioned to make it compatible with the 9-bit "byte serial" data required by the FOUPA for transmitting on the CAMAC Highway.

The BTSCC requires other modules located in the site crates to make the system work as designed:

- For those sites with a minicomputer, the minimum additional interface modules required are a Minicomputer Interface Module (MIM) and a Lam Encoder.
- For the conventional simulator sites that require signal conversion modules for their interface, the minimum additional modules required are a List Sequencer Module (LSM), a SCIU, the signal conversion modules, and for those sites that have asynchronous devices such as the Minicomputer Interface Module (MIM), a LAM Encoder is required.

Clock System - The purpose of the clock system is to synchronize simulations to the real-time clock and to other simulations. The clock system is composed of a central unit, a Site Clock Interface Unit (SCIU), and a fiber-optic distribution network:

- The Central Unit is the central timing source for all simulation sites. It employs an accurate temperature controlled oscillator from which it derives the tuning signals that are sent to the sites. This unit sends out two signals: one signal with a 125 microsecond period and the other with a thumbwheel selectable period of several seconds.
- The SCIU is a CAMAC module that resides in at least one of the simulator site crates. The SCIU has a fiber-optic receiver and it decouples the two timing signals sent by the Central Unit.

- The Fiber-Optic Distribution Network. At the central clock unit, a distribution chassis contains multiple fiber-optic transmitters which are arranged in a "star" network. One fiber-optic transmitter is required for each site connected to the ARTSS.

Site (Simulator Interface) - As noted before there are two different types of simulator sites used in the ARTSS - those sites with minicomputers and the conventional sites that require signal conversion equipment in the interface. Some sites, such as the ARTSS Control Consoles, require a combination of these interfaces.

Simulator Sites with Minicomputers - Figure 2 is a block diagram of the interface to a typical site that has a minicomputer. As can be seen in this diagram, two categories of modules make-up the interface for this site:

- The Highway Interface Modules. These consist of the FOUPA and the BTSCC. These modules provide the data link between the CAMAC Highway and the site crate dataway.
- The MIM. Simply stated, this module provides the data link between the crate dataway and the minicomputer. This module contains a two segment, dual-ported memory. One segment is for data written from the crate dataway and read by the minicomputer; the other segment is for the data written from the minicomputer and read by the crate dataway.

Typically, sites with minicomputers are interfaced through a single CAMAC crate.

Simulator Sites with Signal Conversion Interface - Figure 3 is a block diagram of the interface to this type of simulator site. These sites normally require multiple (currently up to four) crates to house all required modules. As can be seen from the diagram, four categories of modules make-up this type site:

- Highway Interface Modules. Three types of modules make-up this category of equipment:
  1. FOUPA which was described previously. Regardless of the number of crates that is required in a site interface, only one FOUPA is required at each site.
  2. BTSCC which was described earlier. A BTSCC is required at each crate that makes up the site interface. The BTSCC must occupy slots 24 and 25 of the crate.
  3. A List Sequencer Module (LSM). The LSM is used during real-time operation. It contains a memory that is divided into two segments or lists, one containing CAMAC NAF (module slot number, module address, module function code such as read and write) commands for data input modules, the other a similar set of commands for data output modules. The memory for the two lists are written at system start-up time. During real-time operation the data is transmitted to and from the mainframe computer in blocks of contiguous data. The LSM, under control of the BTSCC, sequences through the proper list of commands and scatters or collects data to/from the proper modules. Each crate of the simulator interface must have an LSM.



Several simulator sites contain Minicomputer Interface Modules (MIM) or other similar devices that require asynchronous data transfer. To accommodate these devices, a LAM Encoder is required at each crate containing an asynchronous module. This module causes the BTSCC to issue a demand message to the mainframe computer that one of the asynchronous modules in the crate needs attention. This is as close as the ARTSS gets to an interrupt.

- Site Clock Interface Unit (SCIU). This module, as described earlier, generates the timing signals that are required for synchronized real-time operation.
- Signal Input/Output Conversion Modules. Currently there are five module types that make-up this category of site interface equipment:
  1. Analog-to-Digital Conversion (ADC) Module. This module, as the name implies, converts analog signals ( $\pm 10V$ ) from the simulator hardware into digital data for transmission to the mainframe computer. Each ADC Module contains six converter channels. Each ADC channel is a 16-bit (sign bit plus 15 data bits) device. The data is packed onto the crate dataway using two 24-bit CAMAC words to pack three 16-bit ADC channels. The ADC Modules are built by Kinetic Systems Corporation (KSC), Model 3595-E1A.
  2. Digital-to-Analog Conversion (DAC) Module. This module converts a 16-bit (sign plus 15 data bits) into an analog output ( $\pm 10V$ ). Each DAC Module contains six converter channels. The data comes from the mainframe computers packed as three 16-bit DAC channels into two 24-bit CAMAC words. The DAC Module is KSC Model 3195-E1A.
  3. Discrete Input (DI) Module. This module converts 48-bits of discrete signal information from the simulator into digital data for transmission to the mainframe computers. Two 24-bit CAMAC words are required to pack the 48 data bits from this module. The DI Module is KSC Model 3495-E1A.
  4. Discrete Output (DO) Module. This module converts one 24-bit CAMAC word into 24 bits of discrete data for use by the simulator. Two types of DO Modules are used: KSC Model 3095-E1A, populated with reed relays; and KSC Model 3095-E1B, populated with optical isolators.
  5. Digital-to-Synchro Converter (DSC) Module. This module converts digital information into 26 volt, 400 cycle synchro transmitter compatible data for driving synchro devices at the simulator site. Each DSC Module contains three synchro channels. The data comes from the mainframe computer packed as three 16-bit DSC channels into two 24-bit CAMAC words. Each synchro channel receives 16-bit digital information as input and converts this to  $\pm 4$  arc-minute accurate synchro data. The DSC Module is KSC Model 3395-E1A.
- The final category of modules used at the site crates are those modules and external equipment needed to make-up the local processor. The local processor is currently used in both on-line (real-time) and off-line (non-real-time) modes. In on-line mode the local processor is used to send and receive serial (RS-232C) data in real-time. In off-line mode the local processor is used for diagnostic testing of crate modules and for pre-run checks of the simulator hardware. Most of the modules that make-up the local processor are standard

Digital Equipment Corporation (DEC), or equivalent, boards that are mounted on CAMAC Housing Modules. These housings provide power from the crate dataway and are wired such that the computer bus (in this case the DEC Q-Bus) and computer bus grant lines are brought out to the front panel for easy access. Thus the Q-Bus is externally wired and can be extended to all modules in all crates that make-up the interface.

1. LSI-11/73 Central Processor Unit (CPU). The DEC LSI-11/73 CPU board is mounted on a KSC Model 3823 LSI-11 microprocessor housing.
2. RAM Memory. The RAM memory is a standard DEC MSV11 memory board with 128K words (16-bit) of memory. The RAM board is mounted on a KSC Model 3824 Micro Expansion Housing Module.
3. Disk Controller. The Disk Controller Card is a Sigma Information Systems model SDC-RXV31 Floppy Drive Controller which will control two floppy disk drives. Signal cables from the controller to the drive chassis are brought out through the rear of the controller card housing. The Disk Controller Card is mounted on a KSC Model 3824 Micro Expansion Housing Module.
4. Serial I/O Communications Module. The Serial I/O Communications Module consists of a standard DEC DLV11-J Serial I/O Board that has four independently configurable RS-232 communications channels. This board is used for communications between the LSI-11 CPU and the Local Processor Terminal and the Local Processor Printer. The DLV11-J board is mounted on a KSC 3824 Micro Expansion Housing Module. The Serial I/O Communications Module is considered the last module in the Q-Bus chain and as such contains the terminating resistors required for Q-Bus termination.
5. The Auxiliary Crate Controller (ACC). This module provides the data communications and control link between the LSI-11 Q-Bus and the CAMAC Crate Dataway. There must be one ACC for each crate in the simulator interface. The ACC is a KSC Model 3923.

In addition to the Crate Mounted Local Processor boards, there are several external devices that are required to complete the Local Processor:

1. Terminal. The terminal consists of a smart monitor and a keyboard that communicates with the LSI-11 CPU via the Serial I/O Module. Most sites are equipped with a DEC VT220 Terminal, or equivalent.
2. Disk Drives. Each local processor is equipped with dual 8-inch floppy disk drives. These are Tandon Model TM848E Half-Height Disk Drives, or equivalent.
3. Printer. Most of the local processors at the simulator sites are equipped with a DEC Model LA50, or equivalent, dot matrix printer.

The local processors are currently being upgraded. The new local processors will perform the following functions: interface to the CAMAC highway through a MIM card, provide serial communications with at least eight individually configurable RS-232C lines, and allow ethernet communications. This new local processor will

be an Intel 486 based computer running a real-time UNIX operating system derivative named Lynx.

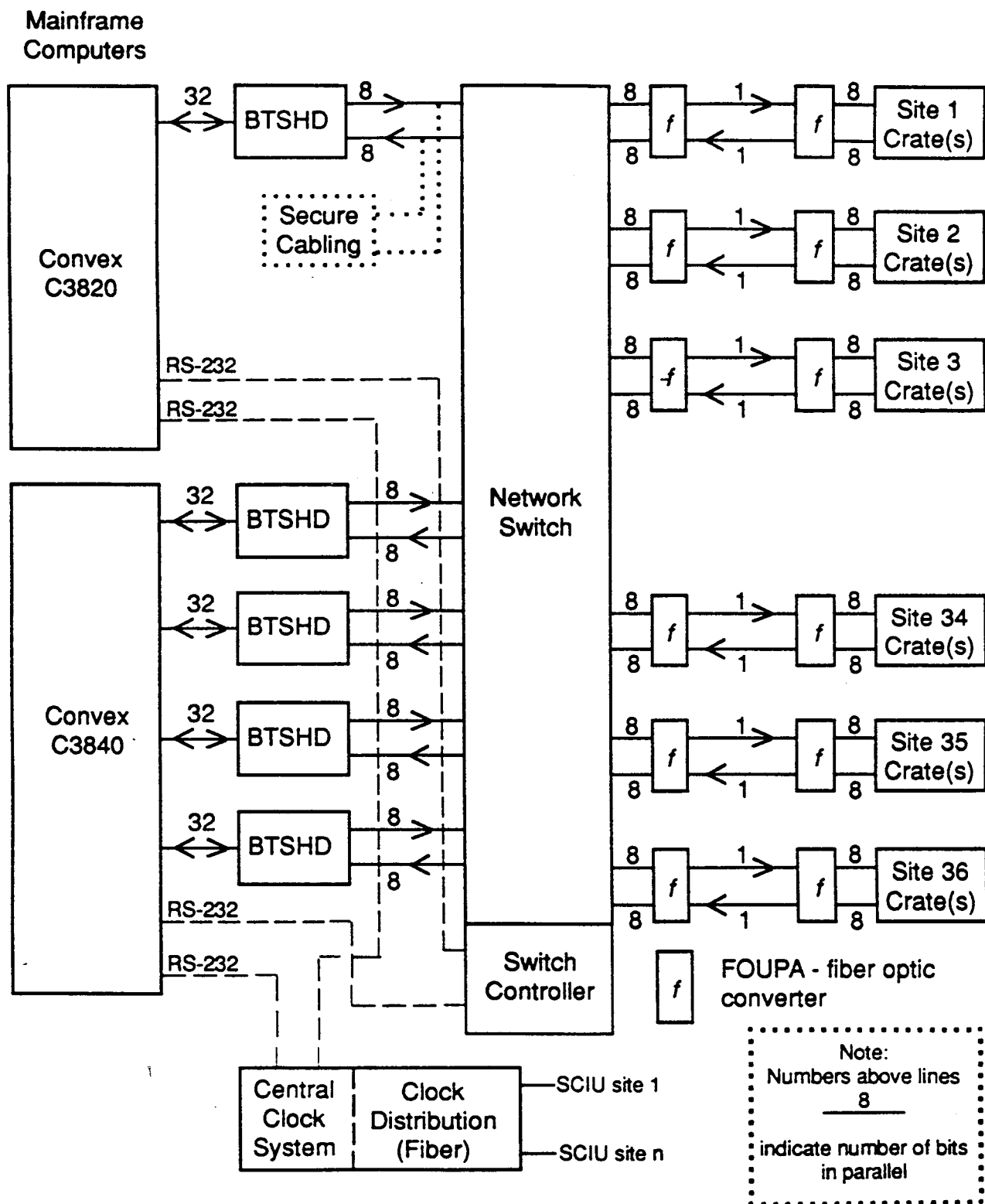


Figure 1  
Advanced Real-Time Simulation System (ARTSS)  
Block Diagram

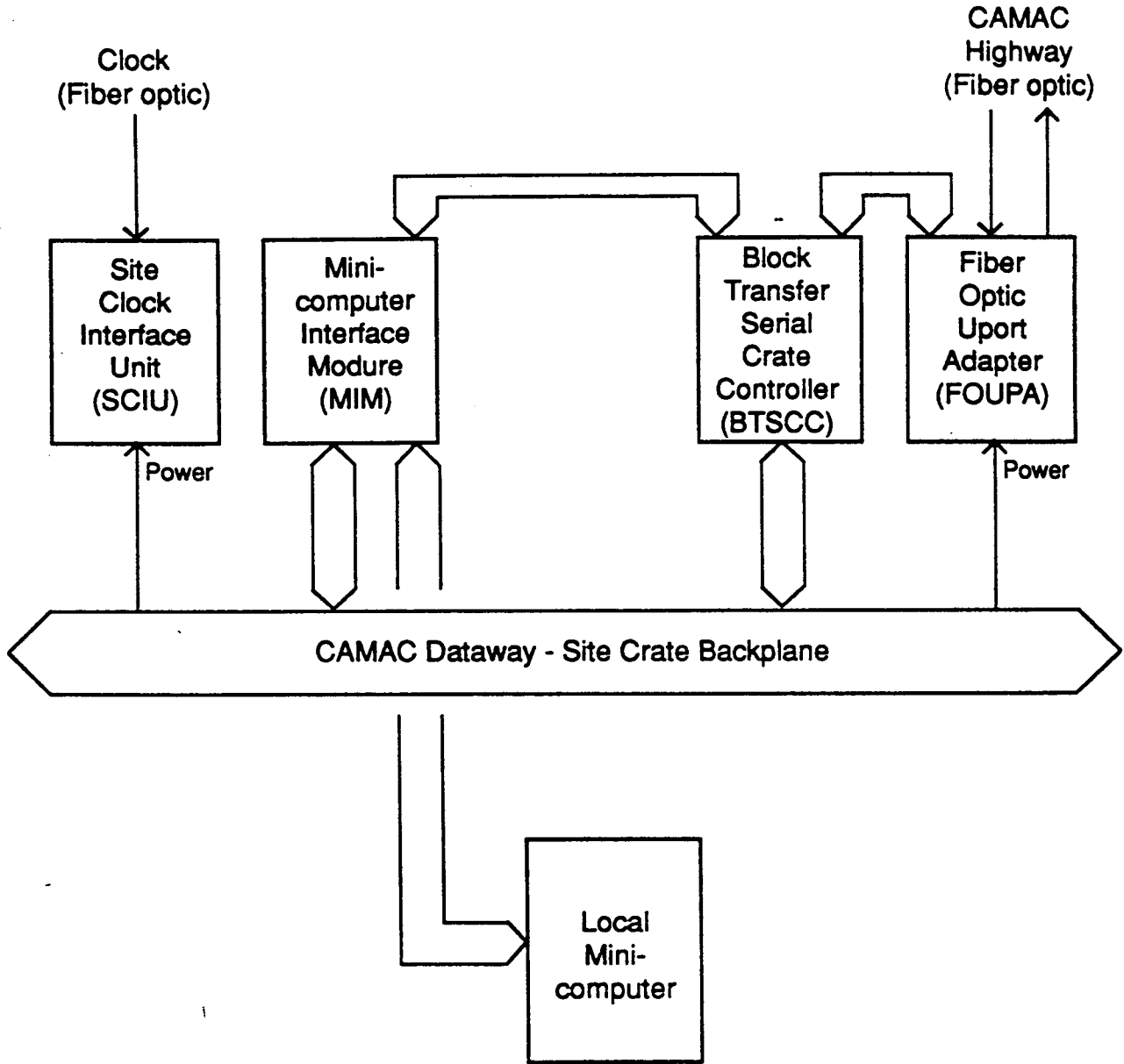


Figure 2  
Advanced Real-Time Simulation System (ARTSS)  
Block Diagram of Typical Minicomputer Equipped Simulator Site Interface

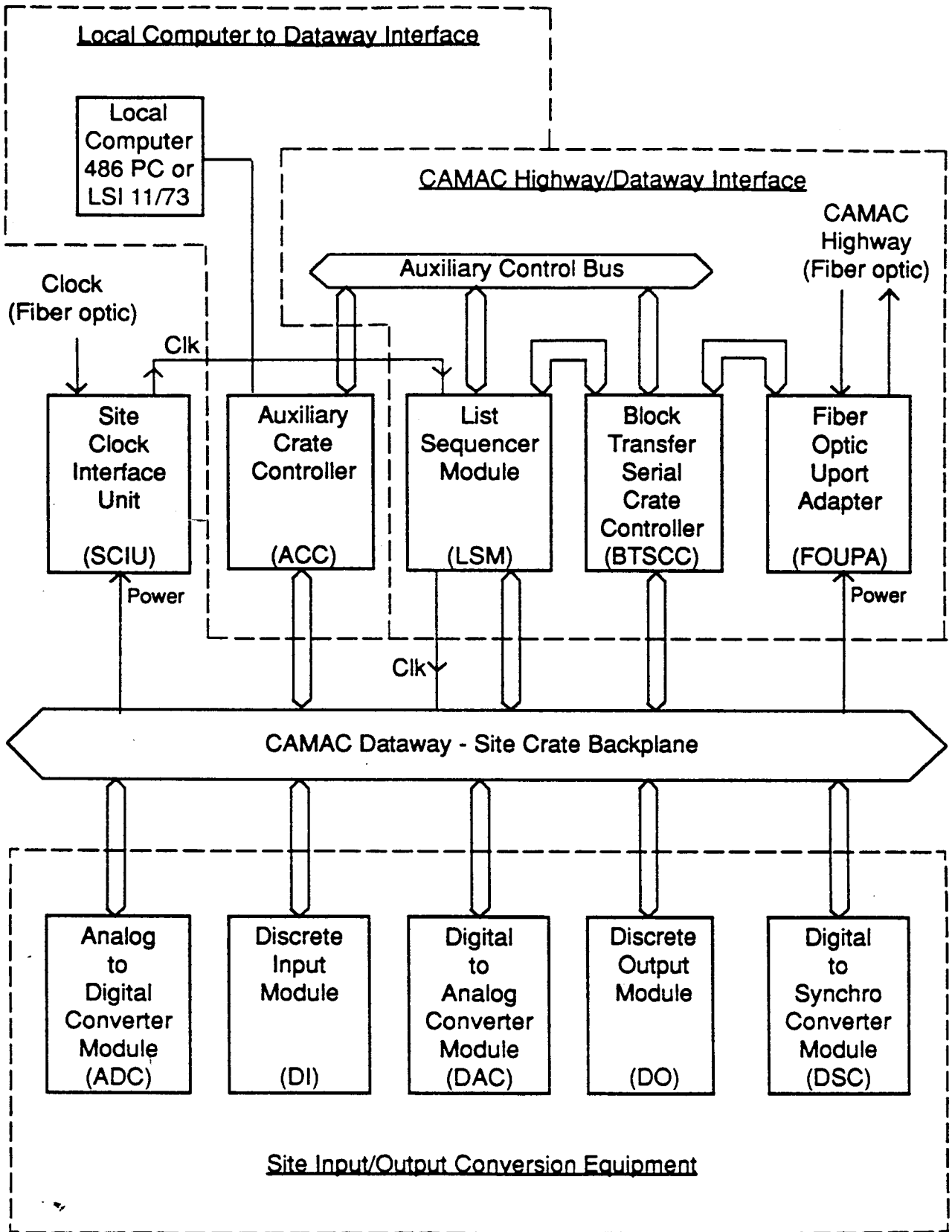


Figure 3  
 Advanced Real-Time Simulation System (ARTSS)  
 Block Diagram of Typical Simulator Site with I/O Conversion Equipment

**ATTACHMENT 8**  
**DESCRIPTION OF TYPICAL SIMULATION PROJECTS**

## ATTACHMENT 8

## DESCRIPTION OF TYPICAL SIMULATION PROJECTS

Once a physical system (aircraft, spacecraft, control and guidance system) has been designed, it may be desirable to go through an additional phase of validation and testing using a human operator and/or some prototype hardware before funds are committed to a full prototype system. In addition, flight techniques involving humans need to be worked out in advance for actual or planned aircraft or spacecraft. The simulation technique is to formulate a mathematical model to represent the physical system and to develop a computer program to solve the math model. The Flight Simulation Computing System (FSCS) digital supercomputers are used to solve the simulation problems at LaRC.

The area of research performed in the real-time simulation facility is analysis of dynamic system performance through computer modeling and man-in-the-loop simulation. In these types of investigations, the computer is used to calculate the response of the vehicle to the control inputs and also to calculate those variables required to drive visual scene generators, cockpit displays, out-of-the-window displays, and kinesthetic cues and motion cues.

For example, the Differential Maneuvering Simulator (DMS) requires sophisticated computer modeling of tactical systems involving two (2) complete aircraft. This requires extensive aerodynamic force and moment generation for the complete range of flight conditions. The research studies on the DMS focus on stability and control, high angle-of-attack dynamics, and maneuverability of sophisticated military aircraft. Research aircraft, such as the highly modified F-18 and F-16, and future military prototypes, are investigated.

The use of simulation to study the performance and flight management of transport aircraft is performed at LaRC using the Transport System Research Vehicle (TSRV) simulator. The advanced displays for take-off/landing performance, engine status, and data link with ATC information sources, study the problem of how and what information to present to the pilot. Simulation studies are being performed to develop graphical weather interactive display presentations, wind shear crew procedures, and taxi evaluation using an electronic map display.

The Advanced Civil Transport Simulator (ACTS) is being used to develop the cockpit of the future with advanced displays, control and guidance technology, touch sensitive control displays, and voice input/output control technology. Current studies involve the evaluation of an intelligent fault management aiding concept called "Faultfinder" in piloted simulations.

The Visual Motion Simulator (VMS) is being used to investigate a variety of research topics including mach 3 passenger travel on a the high speed civil transport, hypersonic handling qualities criteria, Personnel Launching System vehicle to ferry personnel to and from a space station, and flight characteristics of a F16XL with lift/drag modifications.

The General Aviation Simulator (GAS) is being used to investigate the controls and displays necessary for the "Easy Fly" of small aircraft.



The General Purpose Fighter Simulator (GPFS) is being used for the X-31 drop model testing program and as the third aircraft in the DMS project two versus one.

The Mission Oriented Terminal Area Simulation (MOTAS) Facility is being used in conjunction with TSRV air traffic control (ATC) studies to simulate the environment for ATC controllers.

ATTACHMENT 9

FEATURES OF HARDWARE AND SOFTWARE  
USED TO CONTROL SIMULATION PROGRAMS

## ATTACHMENT 9

FEATURES OF HARDWARE AND SOFTWARE USED  
TO CONTROL SIMULATION PROGRAMS

This section does not describe all the features of the Simulation Control Console Site or its associated software. The intent is to address some of the basic concepts involved.

## Simulation Control Console Site Hardware

One of the sites on a highway that has been configured for a simulation is the Simulation Control Console. The control console is used by the simulation programmer/analyst and the researcher to control and monitor the application program to which the control console has been connected. The control console consists of four major components:

1. A high resolution 19-inch color graphics display system.
2. Two CAMAC crates (internal) on the simulation highway.
3. A turret assembly.
4. The control console cabinet.

The CONVEX resident application program may communicate with the control console via two paths:

1. The RS-232 interactive access to the graphics display system.
2. The high-speed CAMAC serial highway to the control console crates.

The crate contains digital-to-analog converters (DACs), analog-to-digital converters (ADCs), discrete inputs, discrete outputs, as well as a RAM (for buffering) and an LSI/1173. The LSI, PC (80486) workstation, and a Prolog 8085 microprocessor located in the turret assembly are also configured to communicate internally at the console.

The graphics display system is used as the main programmer control element. It is a UNIX multi-user PC workstation with Ethernet capability. It is equipped with a touch sensitive screen and provides both touch panel and keyboard entry. The PC workstation uses the RS-232 interactive access to the CONVEX during the job initialization phase which includes scheduling, compilation, loading, and file access. Once real-time operations begin, the PC workstation/LSI communication automatically begins, and the graphics display system touch panel is used for programmer control of the application program. The touch panel display is typically configured to include mode control switches, programmable program control switches, variable display tables, and parameter/variable entry for changes/messages to the CONVEX program.

The turret assembly is used by the programmer and researcher for input to and display from the application program. Communication with the assembly is accomplished via RS-232, analog converters and discrete I/O. The turret assembly has a variety of analog devices, access to an intercom system, and a 13-inch color monitor with video switches. Up to nine video channels can be monitored.

The 90 degree "V-shaped" console has the graphics display system monitor mounted on a turntable at the apex of the "V". Two 12-foot attached tables complete the "V". The turret is mounted on a slide assembly on one leg of the "V", and the other leg is used for a workspace. The console electronics are mounted in the base of the cabinet. At present, there are four operational consoles.

There are three consoles, two printers and two graphics systems located in the main real-time room. Adjacent to the real-time room is a secure room where there is a secure CONVEX computer, one console, one printer and one graphics system. Each console has up to four 8-channel strip chart recorders available for use. These peripherals are used exclusively by the real-time facility.

#### Simulation Control Console Software

The ARTSS consists of two dedicated digital supercomputers (CONVEX C3840 and CONVEX C3820) connected to an array of simulation sites (control consoles, cockpits, graphics systems, etc.) via a fiber optic digital data network called Computer Automated Measurement and Control (CAMAC). The real-time system software resident on the CONVEX computers contains special software utilities which provide real-time programmers a means of interfacing their application programs to simulation site hardware and software.

Real-time simulation programs intended for ARTSS execution are mainly written in FORTRAN. Each program must incorporate calls to the "Real-time Supervisor" package of subprograms in order to interface with the CONVEX operating system and obtain input from and send output to the required simulation site subsystem. Additionally, calls to routines contained in the resident Supervisor program library are required for proper formatting and packaging of site dependent input/output and control information. Configuration or scheduling of the desired real-time hardware sites is performed prior to execution of the applications program with the "sked" control statement.

Real-time simulation programs are monitored and controlled at the control console station sites. Each site is comprised of a high-resolution color graphics display system running UNIX SYSTEM 5, a CAMAC/LSI single user system running RT11/XM and a Prolog 8085 microprocessor controlled turret assembly. Special software programs resident in the PC workstation and CAMAC/LSI subsystems provide the required protocol for communication with the real-time simulation programs.

Execution, monitoring, and control of real-time simulation programs operating in the ARTSS requires communication between the real-time program and the remote site control console's PC workstation, CAMAC/RT11 and turret subsystems. The control and informative data sent to and received from these subsystems is specially formatted to indicate mode control, function logic, discrete light, and ascii character data. In order to provide real-time simulation programmers with utilities to facilitate the encoding and decoding of this information, the Supervisor real-time library has been provided. Additional programs within the RT11 system and the control console graphics display system have also been written to work with (or independently of) the real-time Supervisor library routines.

An interactive program called "rtss" operates in the graphics display system and provides the real-time programmer primary means of control via a touch sensitive display of program mode and function sense switches.

Real-time supervisor is a group of subprograms which are loaded with each simulation application program. The supervisor provides the interface between the application program and the operating system and coordinates input and output to and from the simulation hardware.

Supervisor's functions include self-initialization, coordination of I/O to and from the special hardware, packing and unpacking Real-Time Highway data, and passing buffer addresses to tables used by the simulation processors.

The design of the Supervisor currently provides: communications with the Real-Time Highway; communication to and from the Real-Time disk; interactive error processing; and interjob communication via shared memory.

[NOTE: The control consoles are in the process of being upgraded. The plan is to replace the LSI-11 and interface hardware with newer technology hardware.]

ATTACHMENT 10  
SPECIALIZED COMPUTER FACILITIES AND PERIPHERAL EQUIPMENT

## ATTACHMENT 10

## SPECIALIZED COMPUTER FACILITIES AND PERIPHERAL EQUIPMENT

The following equipment is located in Buildings 1268A, 1220, and 1201:

Section 1 -- General Purpose Computing EquipmentSection 1a -- Mission Oriented Terminal Area (MOTAS) Facility Equipment

- 1 Voice Communication System
- 1 Audio Switching chassis - NASA
- 1 Audio jack panel - NASA
- 1 Audio interface panel
- 5 Air Traffic Controller station audio control chassis with push-to-talk foot switch - NASA
- 4 Pseudo pilot station audio control chassis with push-to-talk foot switch - NASA
- 1 Voice communication system interconnect cabling
- 4 Voice disguiser units - Eventide Inc., Model H-910 Harmonizer
- 4 Voice recognition and playback, Votan Co., Model VPC2100
- 2 Audio cassette tape recorders - Onkyo Corp., Model TA-RW99
- 1 Air Traffic Control suite simulator - Raytheon Co. P/N G538945-1
- 4 GPIB network - National Instruments Corp., Model GPIB-100A
- 2 10 channel video receiver buffer chassis - Unisys Corp.
- 2 20 inch monochrome display crts - Evans/Sutherland
- 1 19 inch roll around monochrome display crt - Evans/Sutherland

Section 1b -- Calligraphic/Raster Display System (CRDS) Equipment

- 2 CRDSs having the following components:
  - 2 Main Chassis -- SST100
  - 3 Line Generator Subsystem Assembly - LGS SST403
  - 2 486 PC Application Processor Assembly -ATE100
  - 4 Transformation Processor Assembly -- Malibu SST400
  - 3 Refresh Buffer -- SST402
  - 3 Color Cards -- SST404
  - 1 General Purpose Input/Output -- GPIO DRI420
  - 1 RMIX Assembly -- RMX400
- 1 CRDS having the following components:
  - 2 Main Chassis -- SST100
  - 4 Line Generator Subsystem Assembly - LGS SST403
  - 1 486 PC Application Processor Assembly ATE100
  - 4 Transformation Processor Assembly -- Malibu SST400
  - 4 Refresh Buffer -- SST402
  - 4 Color Cards -- SST404
  - 1 General Purpose Input/Output -- GPIO DRI420
  - 1 CMIX Assembly -- CMX400
  - 1 Plotter Interface PI300

- CRDS Spares
- 1 Main Chassis -- SST100
- 1 Line Generator Subsystem Assembly - LGS SST403
- 4 Application Processor Assembly -- Ventura SST401
- 1 486 PC Application Processor Assembly ATE100
- 1 Transformation Processor Assembly -- Malibu SST400
- 1 Refresh Buffer -- SST402
- 1 Color Cards -- SST404
- 1 General Purpose Input/Output -- GPIO DRI420

Section 1c -- Eye Head Tracker Laboratory (EHT) Equipment

- 1 Dual Eye Tracker, ASL 4350D+ -
- 1 Remote Optical Unit
- 1 Locating Camera
- 1 Lens, 50-75 mm
- 1 Bright Pupil Optical Unit, HMO-b
- 1 Switch, B/D
- 1 Scene Camera, HMSC
- 1 Pers. Comp., 80486, Model 4000
  - a. 50 Mhz i486DX microprocessor
  - b. Color SVGA video adapter card
  - c. 14" Color SVGA monitor (NI)
  - d. 1 Mbyte RAM
  - e. 80 Mbyte Hard Disk Drive
  - f. 3.5" 1.44 Mbyte Floppy Disk Drive
  - g. MS-DOS 5.0 and Bus Mouse
  - h. Motherboard containing 16-bit full length slots and 8-bit half length slots for eye tracker interface boards (described below)
- 1 PC I/O interface board
- 1 XDAT I/O interface board
- 1 TM tracking mirror & remote focus package for use with FMO
- 1 EHT extended headtracking package for use with FMO
- 1 Cable Harness for HMO optics, 30 Feet
- 1 Cable Harness for FMO optics, 30 Feet
- 1 Interconnect Cables, Tripods, and mounting pedestals for FMO & FMSC
- 1 Software Program, for controlling eye tracker operation, calibration, and data recording, EYEPOS/EYEDAT
- 1 Software Program, for converting raw eye position data to fixations and for further analysis of fixation data according to user-defined areas of interest, EYENAL
- 1 Operator's manuals
- 1 Dark Pupil Optical Unit, HMO-d
- 1 EYEHEAD System, EH-Sa, for combining real-time eye position data and head position data, as follows:
  - a. EYEHEAD Software, EH
  - b. Magnetic Head Tracker (MHT), The Bird
  - c. Gimballed scene mapper, EH-G
  - d. Laser Pointer, EH-L
  - e. Cables
  - f. Operator's Manuals



- 1 Stationary Scene Camera, EH-SSC
- 1 Digital Data Playback Option, EN-PB

Section 1d -- Simulation Intercommunication System (SIS) Facilities

- 2 Master Control station personal computer systems having the following components:
  - 80386/SX25 Processor
  - Motherboard with 4 MB 70ns RAM, 8K instruction cache, & 64K SRAM cache
  - Floppy disk drive, 1.2 MB & 1.44 MB
  - Hard disk drive, 130 MB
  
  - Two serial ports, one parallel port, & 16 bit IDE controller
  - 14" VGA Color Monitor, .28 dp, NI
  - 101 key keyboard
  - Microsoft mouse
  
- 1 File Server personal computer system having the following components:
  - 80386/SX25 Processor
  - Motherboard with 4 MB 70ns RAM, 8K instruction cache, & 64K SRAM cache
  - Floppy disk drive, 1.2 MB & 1.44 MB
  - Hard disk drive, 210 MB
  - Two serial ports, one parallel port, & 16 bit IDE controller
  - 14" VGA Color Monitor, .28 dp, NI
  - 101 key keyboard
  - Microsoft mouse
  
- 2 Digital phone line to RS232 serial data interface telephone units.
  
- 1 Twenty-channel telephone audio interface chassis - Unisys Corp., having the following digital phone line to four wire analog conversion components:
  - 3 Main Chassis
  - 20 Converter modules--type 120
  
- 20 Portable loudspeakers--8106
- 24 Headsets--starset
- 8 Headsets--supra
- 10 Handset/headset/speaker interface boxes
- 14 Speaker power supply/interface boxes
- 12 Conference bridge systems, consisting of the following components:
  - 24 Equipment shelf (Card File)--Model 10
  - 12 Master control ports--2804M1
  - 132 Access trunk module--2801
  - 144 Conference port module--2802
  - 12 Conference amplifier--9194
  - 12 Universal Timer module--9131
  - 12 Tone Supply module--2806
  - 24 Fuse module--9021
  - 12 Power supply--8035

## SIS Spare Components

- 5 Handset/headset/speaker interface boxes
- 7 Speaker power supply interface boxes
- 12 Access trunk module--2801

Section 2 -- Peripheral Equipment

- 1 EAI X-Y Recorder - Model 1110
- 3 Brush Recorders - Mark 200 Model 2222-1707-110791 (Located at VMS, GA/TSRV, DC-9)
- 2 Astro-Med Recorders, Model MT 9500, Inv. No. 143560 and 143561
- 100 Zeltex Amplifiers - Model 1227
- 100 DMS DAC Buffer Amplifiers - Model EFDB 1452
- 100 DMS ADC Buffer Amplifiers - Model EFDB 1473
- 100 Video Driver Amplifiers - Model 1032-001
- 100 Video Receiver Amplifiers - Model 1032-002
- 9 Brush/Gould Recorders - Model 2800

ATTACHMENT 11

ADVANCED REAL-TIME SIMULATION SYSTEM-EQUIPMENT

## ATTACHMENT 11

## ADVANCED REAL-TIME SIMULATION SYSTEM EQUIPMENT

Section 1 -- Equipment Complement for ARTSS

ITEM	DESCRIPTION MFG, P/N	B1268A	B1220	B1232	B1244	B1298	B1293	SPARES	TOTAL
1	UART DEC, DLV11-J	11	3					4	18
2	LSI 11/73FP DEC, KDJ11-AC	10	3		-			1	14
3	RAM DEC, MSV11-LK	9	3					2	14
4	LSI HOUSING KSC, 3823-Z2A	10	3					1	14
5	LSI UEXPANS KSC, 3824-Z2A	33	10					14	57
6	SCIU-AA NASA, DRB	11	3	1	1	1	1	9	27
7	LRC QMIM NASA, DRB	6	1					5	12
8	CK XMTR NASA, DRB	2							2
9	LSI/PDP ADPT KSC, 2920				3				3
10	DO KSC, 3095-E1X	27	6					8	43
11	D/A 8CH KSC, 3112-A1A	10	2					4	16
12	D/A 6CH KSC, 3195-E1A	82	21		11			17	131
13	DISP KSC3291-Z1A	12	2					4	18
14	CONTROL KSC, 3296-Z1A	1						11	12
15	DSC KSC, 3395-E1A	11	15		6			6	38
16	DI KSC, 3495-E1A	16	3		2			5	26
17	A/D 6CH KSC, 3595-E1A	38	13		2			11	64
18	RAM KSC, 3821-D2X	3		1	1			4	9
19	LSM KSC, 3830-Z1A	20	7		2		1	13	43
20	FIFO MEM KSC, 3841				1				1
21	AUX CC KSC, 3920				2				2
22	AUX CC KSC, 3922-Z1E	3							3

ITEM	DESCRIPTION MFG, P/N	B1268A	B1220	B1232	B1244	B1298	B1293	SPARES	TOTAL
23	LSI DMA CC KSC, 3923-Z2B	20	7					4	31
24	LAM ENCODER KSC, 3924-F1A	10	1					4	15
25	STD UPORT KSC, 3939-Z1A	35	3	1		1		10	50
26	HI PWR UPORT KSC, 3939-Z1C	3			1			2	6
27	BTL2 CC KSC, 3952-Z1E	20	7	1	3	1	1	12	45
28	PADDLE CARD KSC, 2010	20	7	1	3	1	1	0	33
29	BT SHD KSC, 2190-Z1A	7						4	11
30	HDIU KSC, 2800-23I	1						1	2
31	HDOU KSC, 2800-201	1						1	2
32	SSU A KSC, 2800-210	6						2	8
33	SSU B KSC, 2800-220	6						2	8
34	SIC-6 KSC, 2800-300	4						2	6
35	SIC-4 KSC, 2800-310	10						8	18
36	SW CTL KSC, 2800-320	1						1	2
37	CABL I/O KSC, 2800-206	2							2
38	SW MON KSC, 2800-330	1						1	2
39	SW/COOL MOD KSC, 2800-500	1						1	2
40	FLOPPY CONTR SDC, RXV31	8	3					4	15
41	FLOPPY DRIVE TEAC	24	4					14	42
42	CRATE PS KSC, 1502-200	22	6	1	2	1	1	14	47
43	CRATE/FAN KSC, 1502-100	22	6	1	2	1	1	13	46
44	TOUCH SCREEN 19" Elographics Co.	4						1	5
45	AccuTouch CONTROLLER, TOUCH Elographics E271	4						1	5

ITEM	DESCRIPTION MFG, P/N	B1268A	B1220	B1232	B1244	B1298	B1293	SPARES	TOTAL
46	WORKSTATION, RTS								
	ZENON 486/66 PC	4						1	5
	HITACHI MON HM4419D	4						1	5
47	WORKSTATION, SIM CTRL.								
	ATRONICS 486/66 PC	4						1	5
	ADDONICS MONITOR C201	4						1	5

### Section 2 -- Peripheral Equipment

4 Turret assemblies, including the following major components:  
 1 Panel, monitor and mode control  
 1 Panel, analog control  
 1 Card file  
 1 Power supply and serial data distribution chassis  
 1 AC power distribution chassis  
 1 Time history recorder interface  
 1 Video switching chassis  
 1 Monitor, RGB high resolution, Sharp model XM-1300  
 1 Joystick, displacement, two-axis, Measurement Systems model 546

### Section 3 -- Special Test Equipment

1 Fiber optic power meter, 850nm wavelength, Fotec model M200  
 1 Attenuator, fiber optic, Fotec model A430  
 1 Microscope, inspection, Fotec model V100  
 1 Talkset kit, Fotec model F200  
 1 Light source, 850/1300nm wavelength, Fotec model S370  
 1 Laser Precision Fiber Optic Time Domain Reflectometer  
 1 D Cable Highway Analyzer

(TDR)

ATTACHMENT 12

DESCRIPTION OF TERABIT EAGLE 1000 GRAPHICS SYSTEM;  
SILCON GRAPHICS, INC. GRAPHIC SYSTEM

## ATTACHMENT 12

DESCRIPTION OF TERABIT EAGLE 1000 GRAPHICS SYSTEMS;  
SILICON GRAPHICS INC. GRAPHICS SYSTEMS

The computer graphics system which is used to generate heads-down and heads-up cockpit displays in the majority of the simulator cockpits is the Terabit Eagle 1000 Graphics System commonly known as the Calligraphic Raster Display System (CRDS). The CRDS currently consists of three Eagle 1000 units from Terabit Computer Engineering which are integrated into the ARTSS system. These units generate the necessary color graphic displays for the various CRT displays located in each of the simulators. All three systems are used for real-time operation, however each can be used for development programming when not required for simulator operation.

The Eagle 1000 can be used as a stand-alone workstation with multi-user capability for development work at the workstation. The Eagle 1000 is interfaced through the ARTSS system to the Convex supercomputers where it serves as a real-time interactive terminal. Each unit can support only one real-time program at a time, however one real-time program can use more than one unit at a time. The Eagle 1000 has a UNIX based, C programmable computing and development environment.

The Eagle 1000 units are equipped with four independent calligraphic and/or hardware antialiased raster (RMIX) image generation channels. Two units have three calligraphic and one RMIX channels; the RMIX channel has an added capability of accepting an external raster source for mixing. The remaining unit has four calligraphic channels. Each calligraphic channel can drive four monitors and each raster channel can drive one monitor. Test results have shown that a simulation program can successfully drive up to eight independent and highly complex calligraphic displays (two per channel) in the real-time environment.

Langley Research Center has recently taken delivery of two Silicon Graphics (SGI) Onyx/Reality Engine 2 Graphics Supercomputers. These computers will be used to generate heads-down cockpit displays for the Transport Systems Research Vehicle Simulator (TSRV). The TSRV Simulator presently uses the Terabit Eagle 1000 Graphics Computer with calligraphic display CRTs. The simulator will be upgraded to raster display CRTs when the displays are transitioned to the SGI Onyx computers. It is anticipated that the majority of the simulators will be upgraded to raster display systems over the next few years. Four SGI Indigo workstations have also been acquired to facilitate display development. The Onyx computers are capable of producing two 1280x1024 resolution displays, three 1024x768 resolution displays or six 640x480 resolution displays per graphics pipeline. The long term goal of this upgrade is to allow graphics software developed in the simulator to be taken directly to the TSRV research aircraft which is presently a Boeing B737-130. It has been proposed that the research aircraft be upgraded to the SGI Onyx/Reality Engine 2 Computer.



ATTACHMENT 13

DESCRIPTION OF COMPUTER GENERATED IMAGE GRAPHICS SYSTEMS  
AND DATA BASE MODELING SYSTEM

## ATTACHMENT 13

DESCRIPTION OF COMPUTER GENERATED IMAGE GRAPHICS SYSTEMS  
AND DATA BASE MODELLING SYSTEM

The Scene Modeling System (SMS) allows the development of new databases as well as modification of existing databases on the Advanced Computer Generated Image System (ACGI). The ACGI will be composed of three Evans and Sutherland Image Generator (ESIG) 3000 systems, the first of which is to be delivered in July 1994. The SMS, delivered with the ACGI, will be composed of the Evans and Sutherland Interactive Environmental Simulation Toolkit (EaSIEST™) system. The SMS comes delivered with scene modeling software that runs on a Sun Spark 10 with Freedom graphics or an ESV workstation (depends on the configuration available at the time of delivery). Either SMS hardware configuration shall operate under the UNIX operating system in the X-Windows environment. The SMS is composed of a scene modeling console which is comprised of several hardware and peripheral elements and the scene modeling software. The scene modeling console consists of the workstation, connected via ethernet to each ESIG 3000, a buttons and dials box, a digitizing tablet, a color image scanner for digitizing photographs, maps, charts, overhead satellite imagery, oblique hand held photos and sketches, a laser printer for text dumps and wireframe drawings, and a color video printer for color screen dumps from the monitor.

The scene modeling software provides the capability to create and/or modify natural and man-made scene artifacts such as trees, terrain, and models in an interactive graphical multi-window, user-friendly environment. High-order model constructs and interaction processes use an intuitive point and click processes to develop databases through fluid human interaction. Feature modeling software is provided to allow interactive construction of simple and complex 3D model geometries and the graphical application of texture and color to developed models. Terrain modeling and decoration software provides automatic terrain generation using constraint files and elevation grids from Defense Mapping Agency (DMA) Digital Terrain Elevation Data (DTED) and DMA Digital Feature Analysis Data (DFAD). Features can be automatically and/or manually placed in the database. The feature entity manipulation functions use an intuitive point and click processes. Texture acquisition software that imports texture through image scanning and photo-digitization is provided. Also a color table editor that allows graphical, interactive color selection, from a palate of 16.7 million colors, by name or index, defined in terms of Red, Green, Blue (RGB) or Hue, Saturation, Intensity (HSI) color space is included in the software package. The SMS software that automatically processes the generated database into a real-time executable database for the IGS and downloads the database to the target ESIG(s) via the ethernet communication channel. The code produced by the SMS supports the import and export of data in industry standard formats: Project 2851 Standard Simulator Data Base (SSDB) Standard Interchange Format/High Detailed Inset (SIF/HDI), DMA DTED and DFAD. Specific data types supported also include gridded terrain, in the National Imagery Transmission Format (NITF); culture data, from the compressed ASCII culture file format; and model data, from the compressed ASCII model file format. An automatic database converter shall transform data supplied in the Project 2851 format to the IGS specific format and generate a real-time executable database.

**ATTACHMENT 14**  
**DESCRIPTION OF VOICE COMMUNICATIONS SYSTEM**

## ATTACHMENT 14

## DESCRIPTION OF VOICE COMMUNICATIONS SYSTEM

The Simulation Intercom System provides voice communications for all real-time simulation programs for the simulation complex. End equipment in combinations of telephone sets, handsets, headsets, microphones, and speakers is provided at some 85 sites or stations. Electronic switching that is part of the NASA Langley Telephone System (LaTS) is used to interconnect the various stations that are used for a particular simulation program. The selection of stations that are to be used for a simulation program and the actual switching control to organize these stations into a common conference is performed at one of three conference control stations. The system allows up to 12 stations to be assigned to a conference and will accommodate up to 12 independent conferences. Most simulator cockpits are equipped with their own unique voice communications system, which are interfaced to the Simulation Intercom System through connections to a LaTS telephone station.

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE OF 5 1   5
2. AMENDMENT/MODIFICATION NO. 1		3. EFFECTIVE DATE		4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
6. ISSUED BY National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-0001			7. ADMINISTERED BY (If other than Item 6) CODE		
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) TO ALL CONCERNED				(Y)	9A. AMENDMENT OF SOLICITATION NO. 1-120-1150.3058
				X	9B. DATED (SEE ITEM 11) 6/13/94
					10A. MODIFICATION OF CONTRACT/ORDER NO.
					10B. DATED (SEE ITEM 13)
CODE		FACILITY CODE			

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

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

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

12. ACCOUNTING AND APPROPRIATION DATA (If required)

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

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

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

Subject: NASA Request for Proposal 1-120-1150.3058--Flight Simulation Support Services

The purpose of this amendment is to amend Attachment 4, REPRESENTATIVE COST FORMS, to incorporate the correct Form A-1, Form B-1 and Form C.

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

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) WILLIAM R. KIVETT	
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)		15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY <u>W. R. Kivett</u> (Signature of Contracting Officer)
			16C. DATE SIGNED 6-20-

ATTACHMENT 4

REPRESENTATIVE COST FORMS

The following cost forms must be submitted with proposals, on diskette and on paper. (see also attachment 2, Standard Form 1411.)

	Forms	Period
Initial Contract Period	A-1, B-1	2/1/95 - 1/31/96
First Option to Extend	A-2, B-2	2/1/96 - 1/31/97
Second Option to Extend	A-3, B-3	2/1/97 - 1/31/98
Third Option to Extend	A-4, B-4	2/1/98 - 1/31/99
Fourth Option to Extend	A-5, B-5	2/1/99 - 1/31/00
Total, Init. Contr. and Options to Ext. 1 - 4	A-6	2/1/95 - 1/31/00
Options to Extend 5 - 10 (One Mo. Each)	A-7, B-6	2/1/00 - 7/31/00
Total, Init. Contr. and All Options to Ext.	A-8	2/1/95 - 7/31/00
Options to Increase Level of Effort	C	2/1/95 - 7/31/00
Total, Phase-In, Init. Contr. and All Opts.	A-9	Phs. In - 7/31/00

Since all the A series forms are similar and all the B series forms are similar, only A-1, B-1, and C are shown in this attachment. See section L.35.C.1.a for information on obtaining diskettes containing the full set of forms, and instructions for completing the forms.

COST PROPOSAL SUMMARY

Solicitation 1-120-1150.3058

Proposer: \_\_\_\_\_

Initial Contract, February 1, 1995 through January 31, 1996

DIRECT LABOR COSTS:	Hours	Costs
Straight Time Direct Labor .....	_____	_____
Overtime Excluding Premium .....	_____	_____
Overtime Premium .....	_____	_____
Subcontract Direct Level of Effort Labor, if Any .....	_____	_____
<b>TOTAL DIRECT LABOR COST .....</b>		_____

FRINGES AND PAYROLL TAXES:

FICA .....	_____
FUI .....	_____
SUI .....	_____
Worker's Compensation .....	_____
General Liability Insurance .....	_____
Medical/Dental Insurance .....	_____
Life/Disability Insurance .....	_____
Paid Absence .....	_____
Other Fringe (Specify) .....	_____
Other Fringe (Specify) .....	_____
All Others Fringes (Itemize separately) .....	_____
<b>TOTAL FRINGES AND PAYROLL TAXES .....</b>	_____

OTHER:

Profit and Costs Other than Labor, in Direct Labor Subcontracts .....	_____
Specified Other Direct Costs in Accordance with B.4. of Contract .....	<u>700,000</u>
Allocated Labor Other than G & A .....	_____
Housing for Contract Manager and any necessary support .....	_____
City/County Business License Tax .....	_____
Costs not shown Elsewhere (Provide Separate Detail) .....	_____
<b>TOTAL OTHER .....</b>	_____

G & A .....	_____
FACILITIES CAPITAL COST OF MONEY .....	_____
<b>TOTAL COST .....</b>	_____
FIXED FEE .....	_____
<b>COST PLUS FIXED FEE .....</b>	_____

## LABOR COST SUMMARY

Solicitation 1-120-1150.3058

Proposer: \_\_\_\_\_

Initial Contract, February 1, 1995 through January 31, 1996

RFP Position Titles	No. Pos.	Hours	Rates	Costs
Contract Manager				
Real-Time Simul. Analysis and Progr. Mgr.				
Simulator Engineering, Oper. and Maint. Mgr.				
Senior Simulation Analyst				
Simulation Analyst				
Senior Simulation Programmer				
Simulation Programmer				
Simulator Systems Engineer				
Senior Simulator Systems Specialist				
Senior Computer Systems Specialist				
Simulator Systems Specialist				
Electronics Technician				
Other				
Total Straight-Time Labor				
Overtime (Excluding Premium)			2,000	
Overtime Premium				
Total Labor				

Include above any level of effort labor to be provided by subcontract, and show details on an attachment.



OPTIONS TO INCREASE THE LEVEL OF EFFORT

Solicitation 1-120-1150.3058  
 Proposer \_\_\_\_\_

	Initial Contract Period	First Ext Option Period	Second Ext Option Period	Third Ext Option Period	Fourth Ext Option Period	5 Yr. Total, Initial and Opt. 1 - 4	Ext Option Periods 5-10
TOTAL DIRECT LABOR HOURS.....	18,750	18,750	18,750	18,750	18,750	93,750	9,360
TOTAL DIRECT LABOR COSTS.....							
SUBCONTRACT DIRECT LEVEL OF EFFORT LABOR COSTS.....							
FRINGES AND PAYROLL TAXES.....							
OTHER:							
Profit and Costs Other than Labor, in Direct Labor Subcontracts...							
Allocated Labor Other than G & A.....							
City/County Business License Tax.....							
Costs not shown Elsewhere (Provide Separate Detail).....							
TOTAL OTHER.....							
G & A.....							
FACILITIES CAPITAL COST OF MONEY.....							
TOTAL COST.....							
FIXED FEE.....							
COST PLUS FIXED FEE.....							
COST PER LOE HOUR.....							
FIXED FEE PER LOE HOUR.....							

AMENDMENT OF SOLICITATION/ MODIFICATION OF CONTRACT		11. CONTRACT ID CODE	PAGE OF PAGES 1   4
2. AMENDMENT/MODIFICATION NO. 2	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
6. ISSUED BY National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-0001	CODE	7. ADMINISTERED BY (If other than Item 6)	CODE
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)  TO ALL CONCERNED		(y)  X	9A. AMENDMENT OF SOLICITATION NO. 1-120-1150.3058
			9B. DATED (SEE ITEM 11) 6/13/94
			10A. MODIFICATION OF CONTRACT/ORDER NO.
			10B. DATED (SEE ITEM 13)
CODE	FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

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

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

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A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

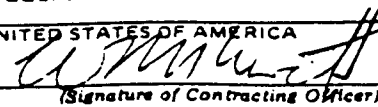
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

Subject: NASA Request for Proposal 1-120-1150.3058--Flight Simulation Support Services

The purposes of this amendment are to: (1) make amendments to the solicitation; (2) provide questions and answers; (3) provide information presented at the preproposal conference held on July 6, 1994, and (4) provide a list of preproposal conference attendees.

(CONTINUED ON ATTACHED PAGES)

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

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) WILLIAM R. KIVETT		
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY  (Signature of Contracting Officer)	16C. DATE SIGNED 7-11-94
(Signature of person authorized to sign)			

The following amendments are hereby made to the solicitation:

A. Section F, F.2, Page 10, is amended as follows to delete the reference to work orders:

"F.2 PLACE(S) OF PERFORMANCE (LaRC 52.212-98) (OCT 1992)

The place(s) of performance shall be:

NASA, Langley Research Center, Hampton, Virginia; and other sites as required."

B. Section H, H.1.A, Pages 10 and 11, is amended as follows to correct the periods to extend contained in the text:

"H.1 OPTIONS

A. Pursuant to the Section I clause entitled "Option to Extend the Term of the Contract (MAR 1989)," the Contractor hereby grants to the Government options to extend the term of the contract for four additional periods of 12 months each. Such options are to be exercisable by issuance of a unilateral modification no later than 30 calendar days prior to the expiration of the contract. Upon exercise of such option(s) by the Government, the following items will be increased by the amount specified below for each option period.

<u>Item</u>	<u>First Option Period</u>	<u>Second Option Period</u>	<u>Third Option Period</u>	<u>Fourth Option Period</u>
Period of Performance (Ref. F.1)	12 months	12 months	12 months	12 months
Level of Effort (Ref. B.2)	TBD hours	TBD hours	TBD hours	TBD hours
Estimated Cost (Ref. B.3)	\$	\$	\$	\$
Estimated Fee (Ref. B.3)	\$	\$	\$	\$

C. Section L, L.35.B, Page 102, entitled "B. TECHNICAL PROPOSAL - VOLUME I," is revised to read as follows:

"B. MISSION SUITABILITY PROPOSAL - VOLUME I"

D. Section L, L.35.C, 3. FACTOR 3 - RELEVANT EXPERIENCE AND PAST PERFORMANCE and 4. FACTOR 4 - OTHER CONSIDERATIONS on Pages 110 and 111 are revised as follows to reflect the proper numerical sequence:

"2. FACTOR 3 - RELEVANT EXPERIENCE AND PAST PERFORMANCE"

and

"3. FACTOR 4 - OTHER CONSIDERATIONS"

E. Section L, L.35.C.1.(k), on Page 110, is amended as follows to delete the hours associated with each one-month option to extend:

"(k) Options to Increase the Level of Effort - Use Form C for the costs of the options to increase the level of effort specified by B.2.A, as follows:

	<u>Period</u>	<u>LOE Hours</u>
Initial Contract	2/1/95 - 1/31/96 -	18,750
First Option to Extend	2/1/96 - 1/31/97	18,750
Second Option to Extend	2/1/97 - 1/31/98	18,750
Third Option to Extend	2/1/98 - 1/31/99	18,750
Fourth Option to Extend	2/1/99 - 1/31/00	18,750

It is estimated that the average labor cost for LOE hour options exercised will be at the weighted average straight-time rate of the following positions listed in Attachment 5: Simulation Analyst, Senior Simulation Programmer and Simulator Systems Engineer.

Please refer to the previous instructions for completing individual cost elements to make entries on Form C."

F. Attachment 4, Form C, Page 5 of Amendment No. 1, is also amended as follows to delete the column containing additional level of effort hours for each one-month option to extend (Options 5 through 10):

NOTE: Those offerors who have already received a Government-provided cost diskette should delete the information from Column AP of Form C. There are no additional level-of-effort hours for Options 5 through 10.

OPTIONS TO INCREASE THE LEVEL OF EFFORT

Solicitation 1-120-1150.3058  
 Proposer \_\_\_\_\_

	Initial Contract Period	First Ext.Option Period	Second Ext.Option Period	Third Ext.Option Period	Fourth Ext.Option Period	5 Yr. Total Initial and Opt. 1 - 4
TOTAL DIRECT LABOR HOURS .....	18,750	18,750	18,750	18,750	18,750	93,750
TOTAL DIRECT LABOR COSTS .....						
SUBCONTRACT DIRECT LEVEL OF EFFORT LABOR COSTS .....						
FRINGES AND PAYROLL TAXES .....						
OTHER:						
Profit and Costs Other than Labor, in Direct Labor Subcontracts ..						
Allocated Labor Other than G & A .....						
City/County Business License Tax .....						
Costs not shown Elsewhere (Provide Separate Detail) .....						
TOTAL OTHER .....						
G & A .....						
FACILITIES CAPITAL COST OF MONEY .....						
TOTAL COST .....						
FIXED FEE .....						
COST PLUS FIXED FEE .....						
COST PER LOE HOUR .....						
FIXED FEE PER LOE HOUR .....						

QUESTIONS AND ANSWERS

The enclosed written answers represent the Government's official response to all questions received.

The contract will have a 12 month base period and include four additional 12 month options to extend the term of the contract. The text of H.1.A on page 15 is incorrect and will be amended.

**(Q22) Page 17, H.3(a). This paragraph discussed key facilities. Does this refer to the contractor's offsite facility?**

The term "facilities" is defined in FAR 45.301 as property used for production, maintenance, research, development, or testing. It includes plant equipment and real property. It does not include material, special test equipment, special tooling, or agency-peculiar property.

NOTE: Any key personnel and/or facilities to be included in this provision will be negotiated.

**(Q23) Page 99, L.30. Is LaRC encouraging the use of uncompensated overtime?**

No, the decision to propose uncompensated overtime is at the discretion of the offeror. However, if proposed it should be consistent with your established policies and accounting practices.

**(Q24) Page 112, M.2. Will the government use the standard or the alternate method to score the proposals?**

As stated in M.2 on page 112, NASA reserves the right to evaluate proposals received using either of the two scoring methods. A determination has not been made at this time, since the number of proposals received usually dictates the decision.

**(Q25) Is there an in-place automated problem tracking system for program trouble reports and system malfunction reports? If yes, is documentation on the system available?**

Yes, the incumbent contractor provided the system which is proprietary.

**(Q26) Where are spare parts and assemblies stored, centralized in 1268A, or dispersed to each simulator site? Who has physical custody of the inventory and responsibility for inventory control, NASA or contractor? If the contractor, is this a function of the LOE (government estimated skill mix) or is this task to be accomplished by additional contractor personnel outside the government estimated skill mix?**

Dispersed to each simulator site.

The contractor has physical custody and responsibility for inventory control.

This requirement is specified in the Statement of Work and the administration of the inventory controls by either the government estimated staffing or additional personnel should be determined by the contractor.

**(Q27) Is the contractor responsible for procurement activity. If yes, is this a function of the LOE (government estimated skill mix) or is this task to be accomplished by additional contractor personnel outside the government estimated skill mix?**

The contractor will be responsible for the purchasing of the associated material, equipment and subcontracts as estimated in B.4 Specified Other Direct Costs on page 3.

It is the contractor's responsibility to determine who performs the procurement function within their company.

- (Q28) (i) If contractor responsibility, what is the average number of supply transactions per year. What are the percentages devoted to (a) modifications, (b) system hardware or software upgrades, and (c) repair parts and services. (This information is needed to determine staffing requirements for inventory control and supply activities.)

(ii) [Ref. L.35.C.1.c.(4).(d) Specified Other Direct Costs, page 109] The total amount of \$700,000 per year and 90%, 5%, 5% allocations are certainly clear. However, to assist in planning for supporting, coordinating and administering this substantial level of procurement activity, is it possible to obtain additional information (e.g., expected number of procurements of each type within the various ranges and approximate lead times anticipated)? Also, can you address to what degree this level of purchasing/procurement is a departure from experience on the current contract?

Additional information regarding the expected procurements is not available. The expected annual procurement level of \$700,000 represents an approximate 50% increase over current annual contract procurements. The number of procurements will be dependent on future requirements. It is estimated that the number of annual procurements could be approximately 100.

- (Q29) What indirect functions, e.g., security, admin, financial, logistics, etc., are required to be performed locally due to direct government interface requirements or other necessities?

The contractor should propose an organization that they determine best satisfies the Government requirements. The organization will be evaluated in accordance with Section M.3 of the RFP.

- (Q30) If you allow some substitution of work experience for academic requirements (i.e., Senior Simulation System Specialist), why not for all positions?

The RFP allows some substitution of work experience for academic requirements for all non-professional positions. See RFP page 131-133, Sections 3.2, 3.3, 3.4, and 3.5. It is the position of the Government that the degree requirements for the professional positions are necessary due to the theoretical content obtained from the academic course work.

- (Q31) Should administrative personnel who support required contractual reports be allowed to charge direct, and be included in the contract LOE?

See B.2.A and B.2.B, page 2; and L.35.C.1.c.(4).(a), page 108. If such personnel are normally charged as direct labor under your established accounting practices, their time supporting the contract should be included in the level of effort.

- (Q32) In RFP section M.4.B, if the cost of initial period includes phase-in cost, wouldn't this favor the incumbent significantly and discourage competition?

Any proposed phase-in cost is a real cost to the Government and must be considered in probable cost. Since phase-in cost is just one cost of many costs considered and evaluated, it is not expected to favor the incumbent significantly nor discourage competition.



**(Q33) Does an Executive Summary count in the page count?**

Yes, refer to section L.35.A.3.b, page 101.

**(Q34) Including daily preflights what are the operating hours each day for the simulators?**

Normal operating hours for the simulators, including preflight testing, is from 7:30 a.m. to 5:00 p.m. Frequently there are research requirements to extend the workday until 12:00 a.m. midnight. Infrequently, weekend coverage has been performed due to research schedules and requirements.

**(Q35) Is off-shift maintenance required? If so, what are the personnel daily work schedules?**

Maintenance on the simulators is typically performed during unscheduled periods of activity on the normal operating hours 7:30 am to 5:00 p.m. Frequently due to simulation workload it is necessary to perform maintenance outside of the normal hours.

It is the contractor's responsibility to schedule their personnel to perform the required maintenance.

**(Q36) [Ref. RFP Attachment 6, Key personnel Minimum Requirements] The minimum requirements for the Key Personnel in terms of Education and Experience seem to be very clear and concise, although somewhat difficult to understand. The difficulty in understanding comes in noting that all three positions require exactly equal levels of education and experience i.e. Masters Degree (or equivalent) plus 10 years in (simulation systems or software) development (although for the Simulation Engineering, Operations and Maintenance Manager, it only says *design*) and 5 years of Management experience. While the symmetry is appreciated, doesn't it seem unusual to have the same minimum requirements for each of the three positions that appear to have such a wide variation in levels of responsibility?**

The minimum requirements for the key positions represents the Government estimate of the minimum requirements necessary for the individual position. The three key positions have specific technical responsibilities and have similar levels of responsibilities.

**(Q37) Is it correct that for the Simulator Engineering, Operations and Maintenance Manager key personnel position, the Government is looking for an individual that has a very broad flight simulator experience base (i.e., simulator system/subsystem conceptualization, analysis, specification, design, development, integration, verification, validation, enhancement, technology transition, upgrade, etc.), rather than an individual whose experience is strictly focused on Operations and Maintenance functions?**

In accordance with Attachment 6, page 134 of the RFP, the Simulator Engineering, Operations and Maintenance Manager should have strong experience in these areas.

**(Q38) Are there any preferred Operations and Maintenance standards, policies, procedures, etc. in place which should be adhered to during the performance of this contract? If so, what are they?**

No. In accordance with RFP, Exhibit A, page 51, the successful contractor must develop a Management and Operations plan for performance of work under the contract including maintenance procedures.

- (Q39) If there is representative list of projected typical purchases including costs that would occur over a one-year period, could you please provide a copy of the list so we can accurately assess the G&A and subcontracting support requirement?**

A representative list is not available. For a distribution of the specified ODC (plug numbers to be used in your proposal), refer to RFP L.35.C.1.c.(4).(d), page 109 and B.4, page 3.

- (Q40) The Key Personnel requirements appear to equate 24 hours of graduate credit hours and a BS Degree as equivalent to a Master Degree. Why the unusual requirement that is not consistent with standard academic protocol?**

It is the Government position that additional course work beyond the B.S. Degree is essential for the key positions. The standard MS programs consist of 24 credit hours for course work and 6 hours for thesis work.

The utilization of real-time simulation in research and development has expanded greatly due to significant increases in enabling technologies which allow much more realistic and complex simulations. While it is true that this is a support service contract, the LaRC research staff depends heavily on the contract staff to develop complex software and hardware subsystems and to participate in studies and analysis of resulting data. It is the position of the Government that the education received at the B.S. level does not provide the expertise and knowledge needed to handle the current and projected simulation research requirements, and that the required theoretical background can only be obtained at the M.S. level or equivalent level of education as defined in the RFP.

- (Q41) Section L.35.C.2 appears to be missing? Is it intended that the requested information and data for Relevant Experience and Past Performance and for Other Considerations be submitted as an integral part of Volume II, Business Proposal?**

There isn't any part missing from L.35.C. It was simply misnumbered. It is corrected by this amendment to the RFP.

Yes, the Business Proposal-Volume II should include Cost, Relevant Experience and Past Performance, and Other Considerations.

- (Q42) Is there a designated location at LaRC which could be used as a Shipping/Receiving area for contract purchases or must items be received off-site and transported to LaRC?**

There is a designated Shipping/Receiving area which can be used by the contractor.

- (Q43) Are there any minimum location requirements that correspond to Section L.32, Contractor's Off-site Facility?**

It is expected that the contract manager and additional indirect personnel will be housed in a location which will easily facilitate communication and interfacing with the Government as well as allow sufficient oversight and management of the work on a daily basis.

**(Q44) Does the word count include the words used as captions to the graphics and in the graphics themselves?**

Yes.

**(Q45) What is the contractor responsibility for E&S repair, maintenance and modification?**

None.

**(Q46) Page 108, Section L.35.C.1.c.(4).(a), the Government has requested each offeror to propose the productive man-year applicable to each company. In light of this request, please clarify the method used to normalize all offeror's proposed cost.**

The probable cost will include costs associated with each offeror's productive man-year. These costs are not expected to be normalized.

**(Q47) For the contractor maintained simulator facilities, how many contractor technicians are assigned per facility?**

Incumbent staffing is considered to be proprietary information.

**(Q48) Forty is minimum number of positions. If the 3 key persons are direct charging positions, does the minimum number become 43?**

As a minimum you should propose the 40 positions in Attachment 5 and the 3 positions in Attachment 6 regardless of whether they are proposed as direct or indirect (See page 108).

**(Q49) Are phase-in costs to be included in the initial 1411?**

A separate 1411 is required for phase-in and in addition phase-in cost should also be included in the 1411 for the total value (See page 107 on the RFP).

**(Q50) Page 108, Section L.35.C.1.c.(4).(a). For pricing purposes, will the Government please clarify whether offerors should propose the number of positions by job title as represented by Attachment 5 or should the offerors propose their own mix of staff totaling 40 people.**

Offeror should propose skill mix necessary for contract performance.

**(Q51) If an offeror proposes a different skill mix, how does the Government intend to evaluate the staff mix that is "optimum for contract performance"?**

The Government will evaluate whether or not a proposed different skill mix is "optimum for contract performance" based on the supporting rationale submitted by the offeror.

(Q52) Using Microsoft Word based on its 6.1 characters per word yields only 33,462 words in the page count vs. the 40,000 (option 1). Microsoft Word counts word in a file rather than per page. We store file by proposal section to the two digit level such as:

1.1 Introduction  
1.2 ...  
.  
.  
5.0 Key personnel

- (a) Can you offer clarification on the characters per word?
- (b) Can you amend your instructions to count words at section level rather than page level?

The solicitation doesn't require that word count be based on a specific number of characters (i.e. 6.1). Option 1, based on word count, on page 102, states "The word-count rules used by any commercial word processing software package are acceptable." We understand that Microsoft is capable of counting the number of words per page and in a document file.

An offeror may chose to use either option 1 which imposes a limit of 40,000 words or option 2 which imposes a limit of 100 pages.

(Q53) Are Consumable and repair parts for simulators, e.g. ICs, resistors, bulbs, etc., purchased by the contractor or requisitioned from LaRC supply? If from LaRC supply, what is the procedure?

If available from LaRC stock, a stock requisition form is initiated and submitted. If not available from stock, the contractor is responsible for purchasing the parts required.

COPIES OF PREPROPOSAL CONFERENCE VIEWGRAPHS

**Pre-proposal Conference**

**for**

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**Flight Simulation Support Services  
(FSS)**

---

**July 6, 1994**

**NASA Langley Research Center  
Hampton, Virginia 23681-0001**

# Flight Simulation Support Services (FSSS)

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## AGENDA

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9:00 a.m. - 9:05 a.m. - Welcome

9:05 a.m. - 9:50 a.m. - Technical Overview

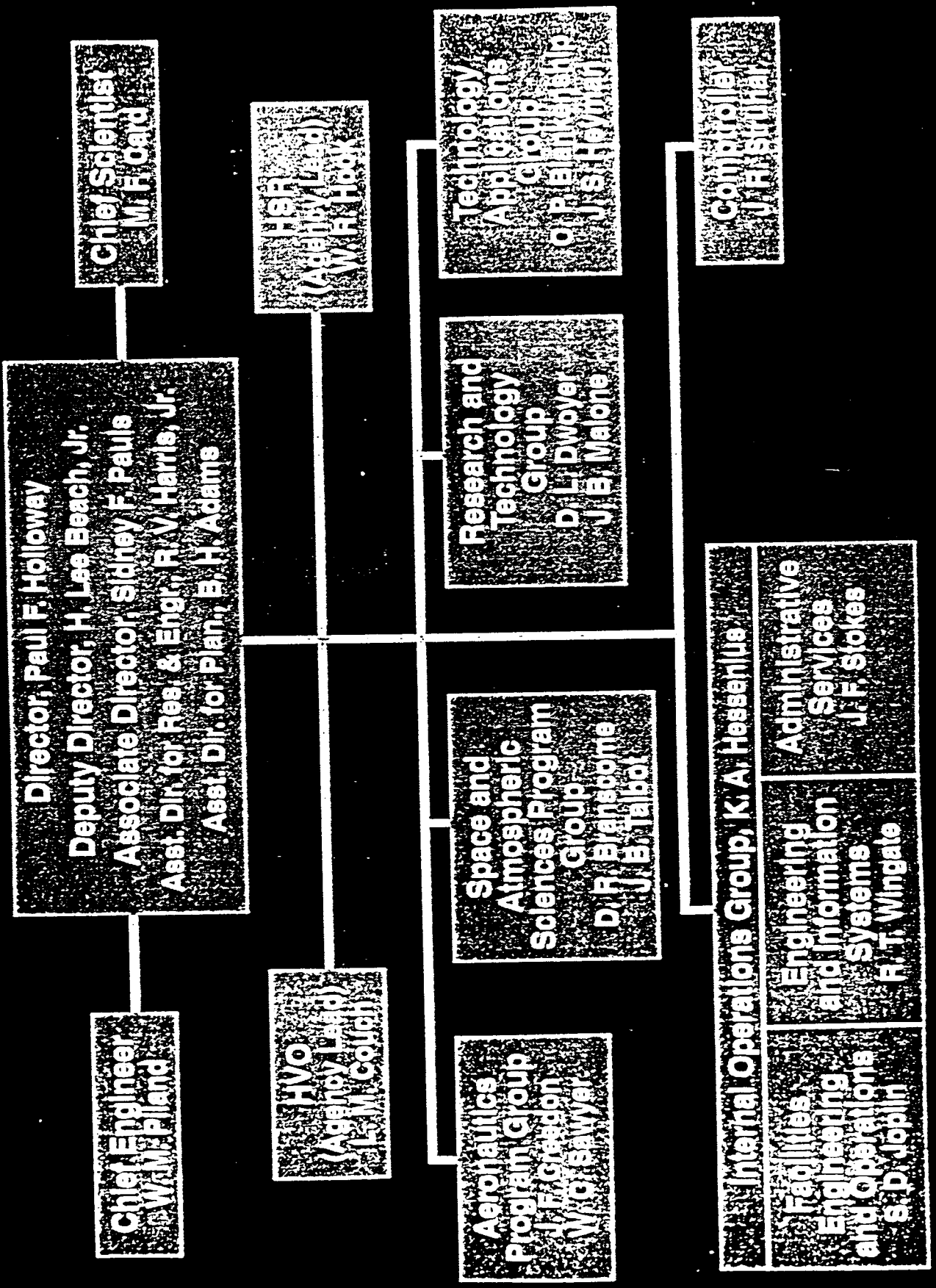
9:50 a.m. - 10:20 a.m. - Business Overview

10:20 a.m. - 11:00 a.m. - Tour

11:00 a.m. - 11:15 a.m. - Break

11:15 a.m. - 12:00 p.m. - Questions and Answers

# Langley Research Center



Director: Paul F. Holloway  
 Deputy Director: H. Lee Beach, Jr.  
 Associate Director: Sidney F. Pauls  
 Asst. Dir. for Res. & Engr.: R. V. Harris, Jr.  
 Asst. Dir. for Plan.: B. H. Adams

Chief Scientist  
M. F. Card

HSR  
(Agency Lead)  
W. R. Hook

Research and Technology Group  
D. L. Dwyer  
J. B. Malone

Technology Applications Group  
O. P. Blankenship  
J. S. Heyman

Controller  
J. H. Struffel

Chief Engineer  
W. M. Pfland

HVO  
(Agency Lead)  
L. M. Couch

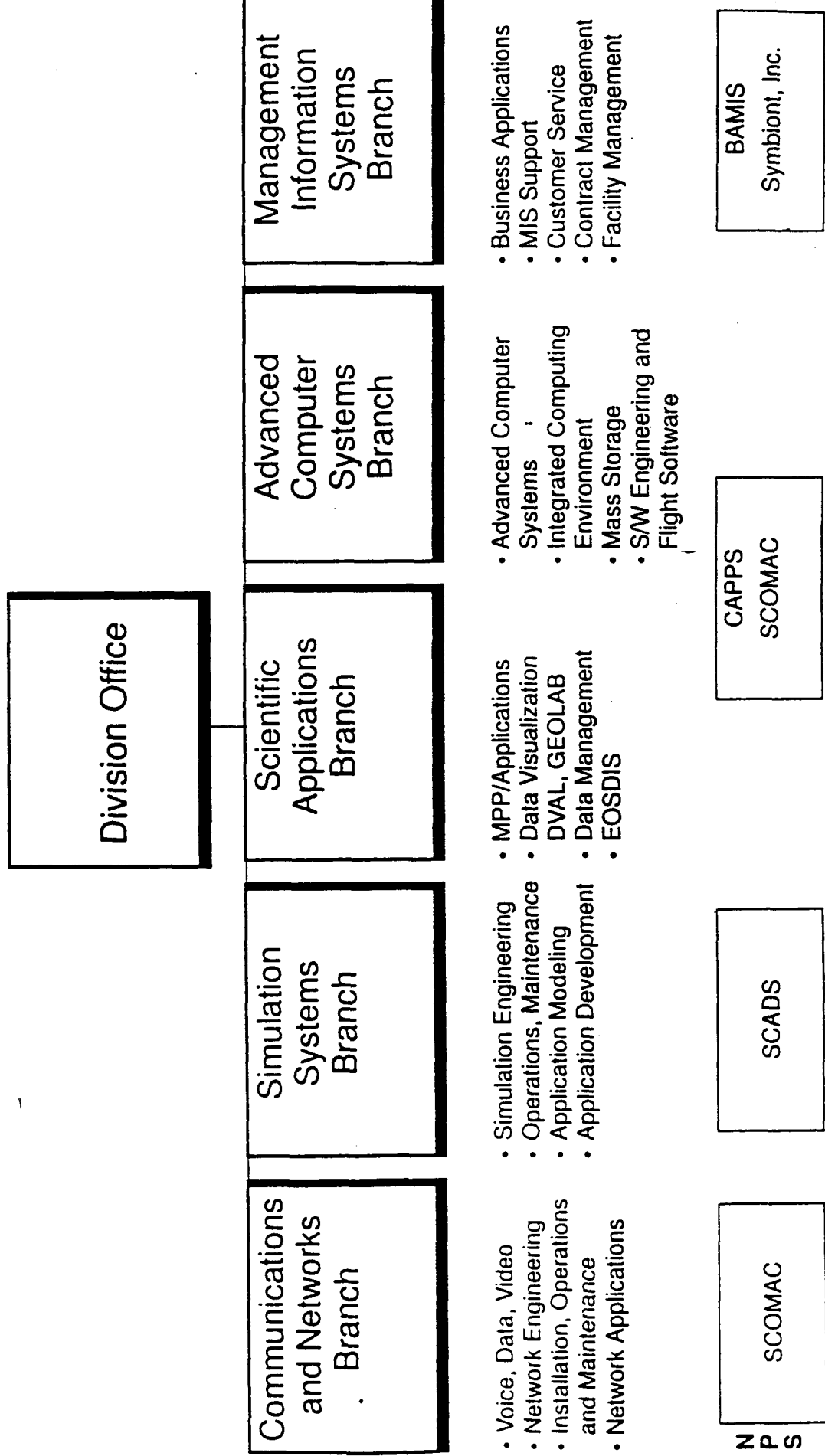
Aeronautics Program Group  
J. F. Greenough  
W. C. Sawyer

Space and Atmospheric Sciences Program Group  
D. R. Brinscome  
J. B. Tabot

Internal Operations Group, K. A. Hesselius		
Facilities Engineering and Operations S. D. Joblin	Engineering and Information Systems R. T. Wingate	Administrative Services J. F. Stokes



# INFORMATION SYSTEMS DIVISION



N  
P  
S

# Information Systems Division

F. Allario, Chief  
 (vacant), Asst. Head  
 J.N. Shoosmith, Chief Systems Analyst  
 F.J. Sansom, Sr. Systems Engineer  
 R.L. Yard, Sr. MIS Analyst  
 L.A. Lillard, Admin. Officer  
 J.J. Nagele, Sec.

L.V. Clark, IRM Officer

## Communications and Networks Branch

E.P. Riddle, Head  
 J.N. Nolan, Asst. Head

Network Development Team

## Simulation Systems Branch

B.R. Ashworth, Head  
 J.W. McManus, Asst. Head

Real-Time Systems Team  
 Simulator Sys. Eng. & Ops. Team  
 Simulator Systems & Ops. Team  
 Flight Simulation Applications Team

## Scientific Applications Branch

J.J. Lamblotte, Head  
 K.H. Jones, Asst. Head

High Performance Computing Team  
 Visualization Team  
 Data Management. Team  
 Geometry Team

## Advanced Computer Systems Branch

F.C. Thames, Head

## Management Information Systems Branch

(vacant), Head  
 F.L. Moore, Asst. Head

## Flight Simulation Support Services (FSSS)

# **SIMULATION SYSTEMS BRANCH**

- Supports LaRC Research Programs
- By:
  - providing flight simulation facilities and services
  - development of mathematical models
  - development of real-time computer programs
  - providing simulator engineering, operations, and maintenance
- Requires analysis, design, development, implementation, verification, and validation
  - of application software, hardware devices, and hardware/software interfaces
  - to form appropriate flight simulators to meet the specific research requirements

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# **FLIGHT SIMULATION SUPPORT SERVICES (FSS)**

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## **Technical Overview**

## **Flight Simulation Support Services (FSSS)**

---

# **TECHNICAL OVERVIEW OF REQUIREMENTS**

---

- **General Requirements**
- **Real-Time Simulation Analysis and Programming Services**
- **Engineering, Operation, and Maintenance Services**

## **Flight Simulation Support Services (FSSS)**

---

### **PURPOSE**

---

**To provide analysis, programming, engineering, and maintenance services for the flight simulation facility at Langley Research Center.**

# **GENERAL REQUIREMENTS**

---

- **Training of Contract Personnel to Perform Assigned Duties**
- **Prepare and Maintain Complete and Comprehensive Records for Software Programs and Hardware Equipment**
- **Project Progress Reports**
- **Security and Safety Requirements**
- **Support Up to Two Shift Operation**

## **Flight Simulation Support Services (FSSS)**

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# **REAL-TIME ANALYSIS AND PROGRAMMING SERVICES**

---

- **Derive and convert mathematical models of aircraft/spacecraft, their subsystems, and their operational environment into valid real-time computer programs.**
- **Design and develop computer graphics programs for cockpit displays and out-the-window visual systems.**
- **Design and develop computer programs for real-time input/output systems.**



# Flight Simulation Support Services (FSSS)

## **SIMULATION STUDY SEQUENCE OF EVENTS**

### CATEGORIES

Definition & Planning

### PHASES AND MILESTONES

4. Plans and Schedules  
(Project to Contractor for Execution)

Execution

5. Implementation (Computer Software Development and Verification -- Hardware Modifications and Checkout)
6. Simulation Modification if Required (Software or Hardware) Requires Information Requested on "Simulation Modification Requests" Form
7. Simulator Validation
8. Conducting Experiment
9. Analysis of Results and Reporting
10. Documentation of Simulation

## Flight Simulation Support Services (FSSS)

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# SIMULATION STUDY SEQUENCE OF EVENTS

---

### CATEGORIES

Definition & Planning

### PHASES AND MILESTONES

1. Initial Discussions
  - Justifications
  - Preliminary Scope
  - Technical Feasibility
2. General Description, Scope and Objectives, and Allocation of Responsibilities
  - Requires Information Requested on "Simulation Study Request" Form
3. Detailed Specifications
  - Math Model, Computation Techniques Consideration, Hardware, Validation, and Experiment Definition

(Project to Contractor for Planning)

## **Flight Simulation Support Services (FSSS)**

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# **SIMULATION STUDY REQUESTS**

---

- **75 - 80 Simulation Study Requests (SSR's)**
  - **55 active**
  - **25 - 30 in stand-by or closeout**
  - **15 - 20 new SSR's annually**
  
- **Real-Time Simulation Activity**
  - **Approximately 120 hrs/wk**
  - **Approximately 20 projects/wk**
  - **Activity varies from 8 hrs/day to 16 hrs/day**

## **Flight Simulation Support Services (FSSS)**

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# **ENGINEERING, OPERATION, AND MAINTENANCE SERVICES**

---

- **Design, Maintain, Modify, and Operate Simulator Facilities**
- **Maintain and Repair**
  - **Specialized Computing Facilities**
  - **Peripheral Equipment**
  - **Specialized Graphics Systems**
  - **High-Speed Real-time Data Network**
  - **Real-Time Intercom Communications System**

## **Flight Simulation Support Services (FSSS)**

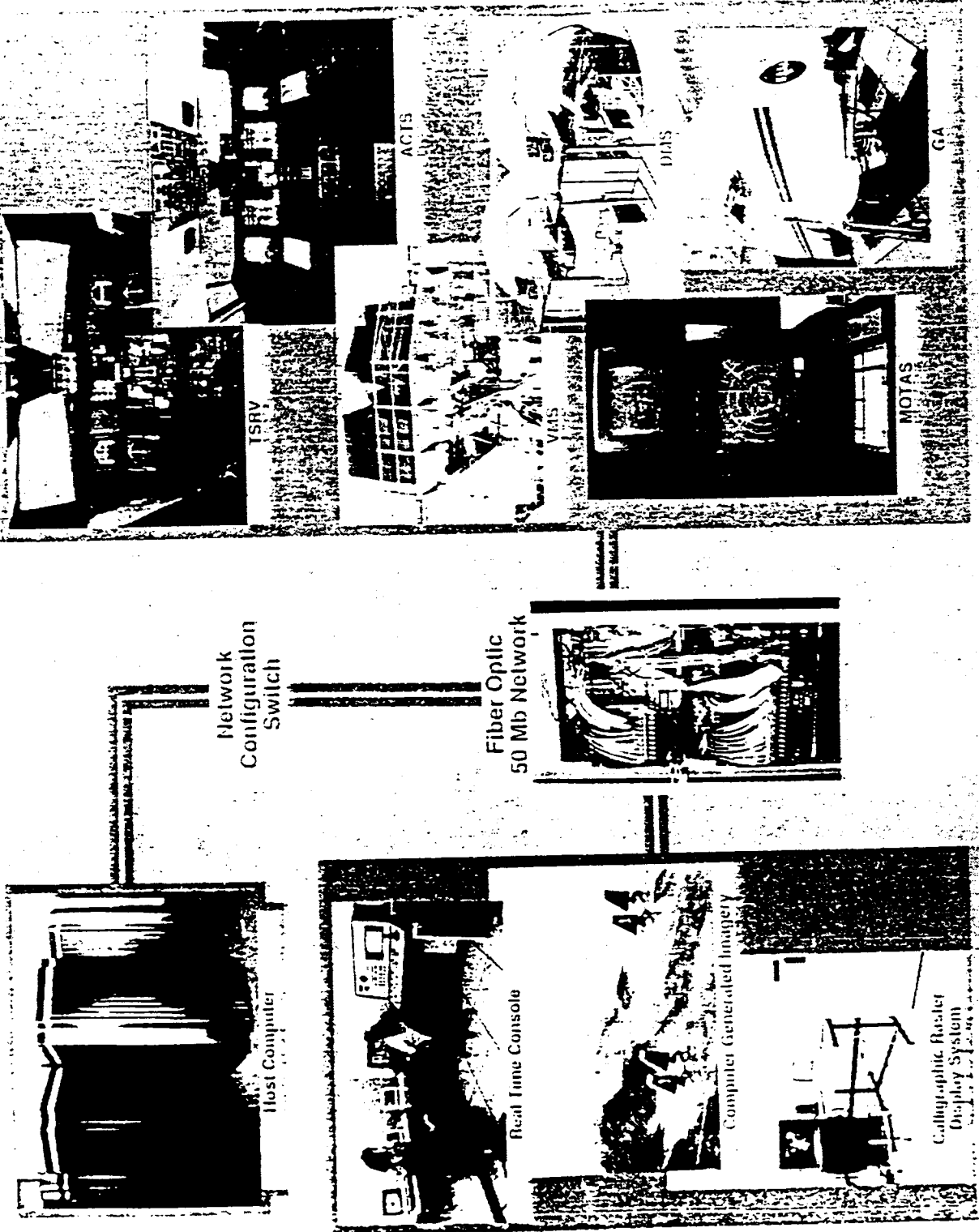
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# **FLIGHT SIMULATION FACILITIES**

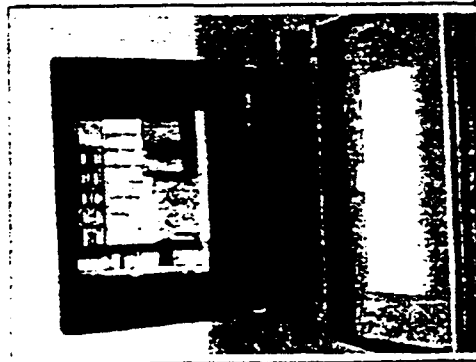
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- **Seven Flight Simulators**
- **Air Traffic Control Simulator**
- **CONVEX 3840, CONVEX 3820 Computers**
- **Advanced High-Speed Real-Time Data Network (ARTSS)**
- **Cockpit Heads-Down Graphics Displays - Calligraphic and Raster Systems**
- **Computer-Generated Out-The-Window Display Systems**
- **Motion Base**
- **Four Flight Simulation Control (Operating) Consoles**
- **Video Facilities and Video Distribution Network**

# LEAPING A VISION FACILITY

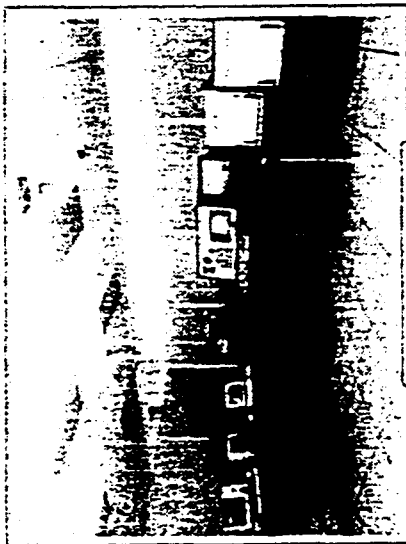


# REAL-TIME CONTROL FACILITY



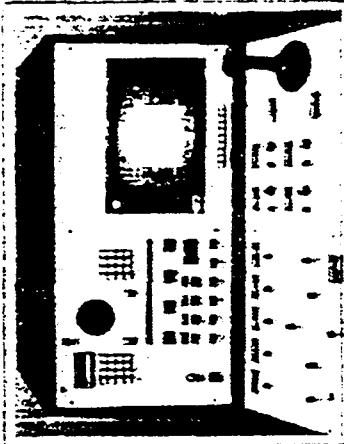
**Jupiter 12**

- High resolution color graphics system
- Control & monitor of real-time application programs
- Touch sensitive display of mode & function switches
- Programmable layout to meet research requirements



**Control Console**

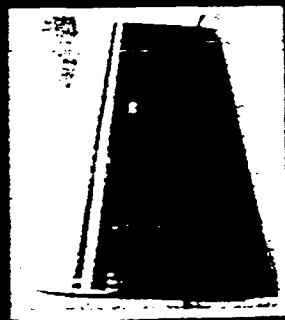
**Fiber Optic 50 Mbs Network**



**Engineer Control Console**

- Preliminary & final checkout of application programs
- Simplified aircraft application studies
- Voice communication via Intracom System
- Monitor pilot interactions

## Flight Simulation Computing System



**Agena**

2  
1  
2  
2

Independent Real-Time CPUs  
UNIX CPU  
Simultaneous Real-Time Applications  
Multiple CPUs to Real-Time Applications



**Gemini**

4  
1  
4  
2-4

# COMPUTER GENERATED IMAGE

Complex database



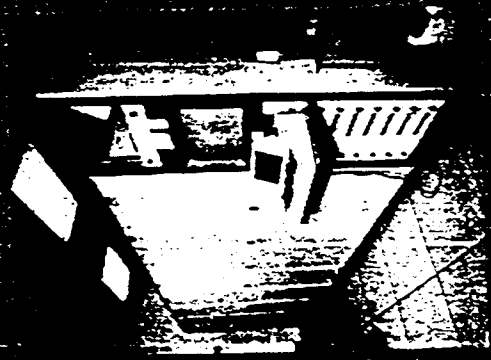
- Terrain
- Occulting
- High speed ATF
- Ease of modification

Aircraft modeling



- Target generation

Evans and Sutherland CT-6



- 2 eye points
- 4 channels
- Multiple line rates
- Gould 32/67

Environmental effects



- Weather
- Clouds
- Fog

Facilities supported



- DMS
- TSRV
- VMS
- ACS
- DC-9





Flight Simulation Support Services (FSSS)

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# TRANSPORT SYSTEMS RESEARCH VEHICLE

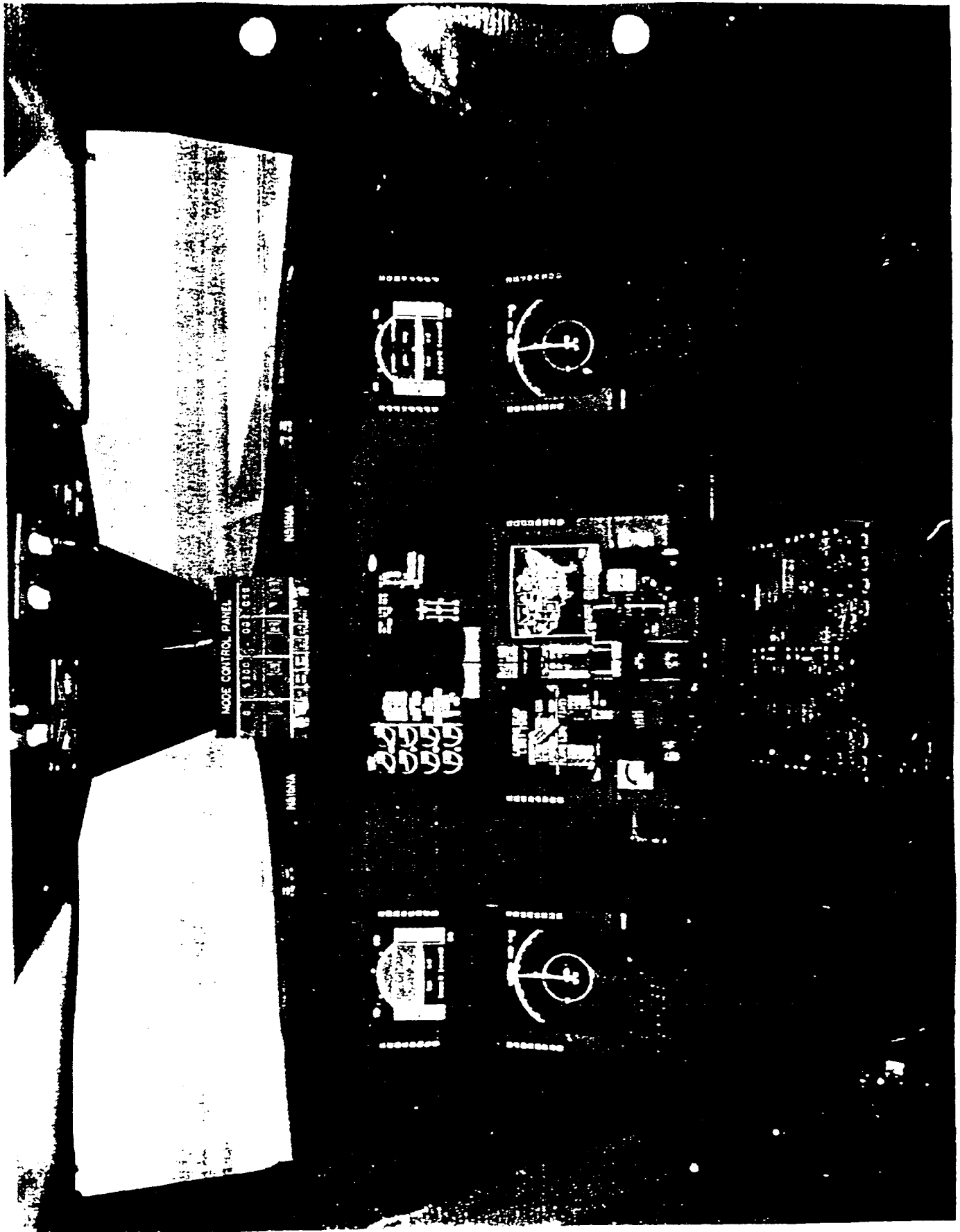
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TYPICAL APPLICATIONS:

- Cockpit Weather Information Needs
- Windshear Crew Procedures
- 4-D Total Energy Control System

VSA

100000



**Flight Simulation Support Services (FSSS)**

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# **ADVANCED CIVIL TRANSPORT SIMULATOR**

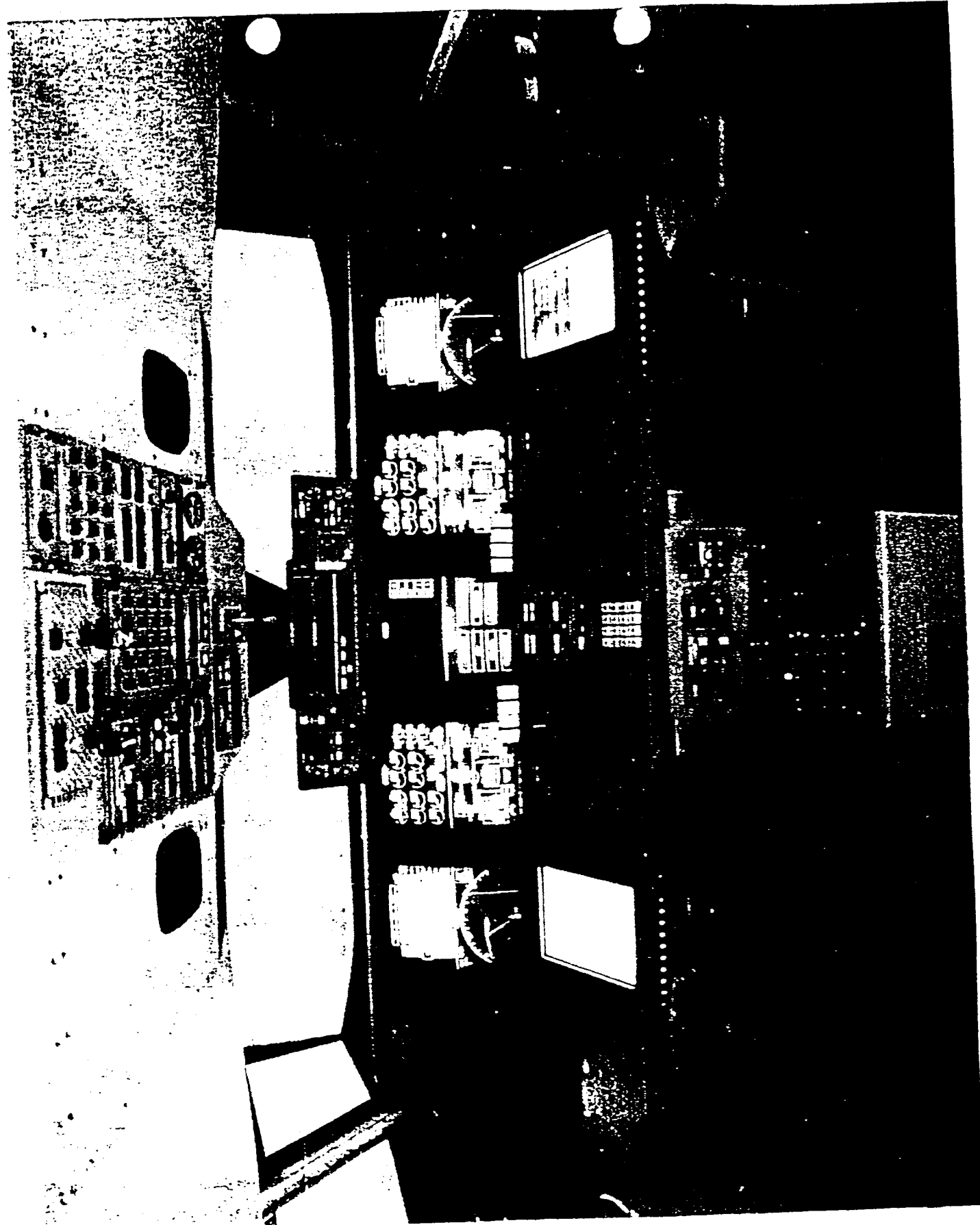
---

**TYPICAL APPLICATIONS:**

- **Cognitive Analysis of Pilotage**
- **Graphical Control Display Unit**

NASA

L-02-11214



**Flight Simulation Support Services (FSSS)**

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# **VISUAL MOTION SIMULATOR**

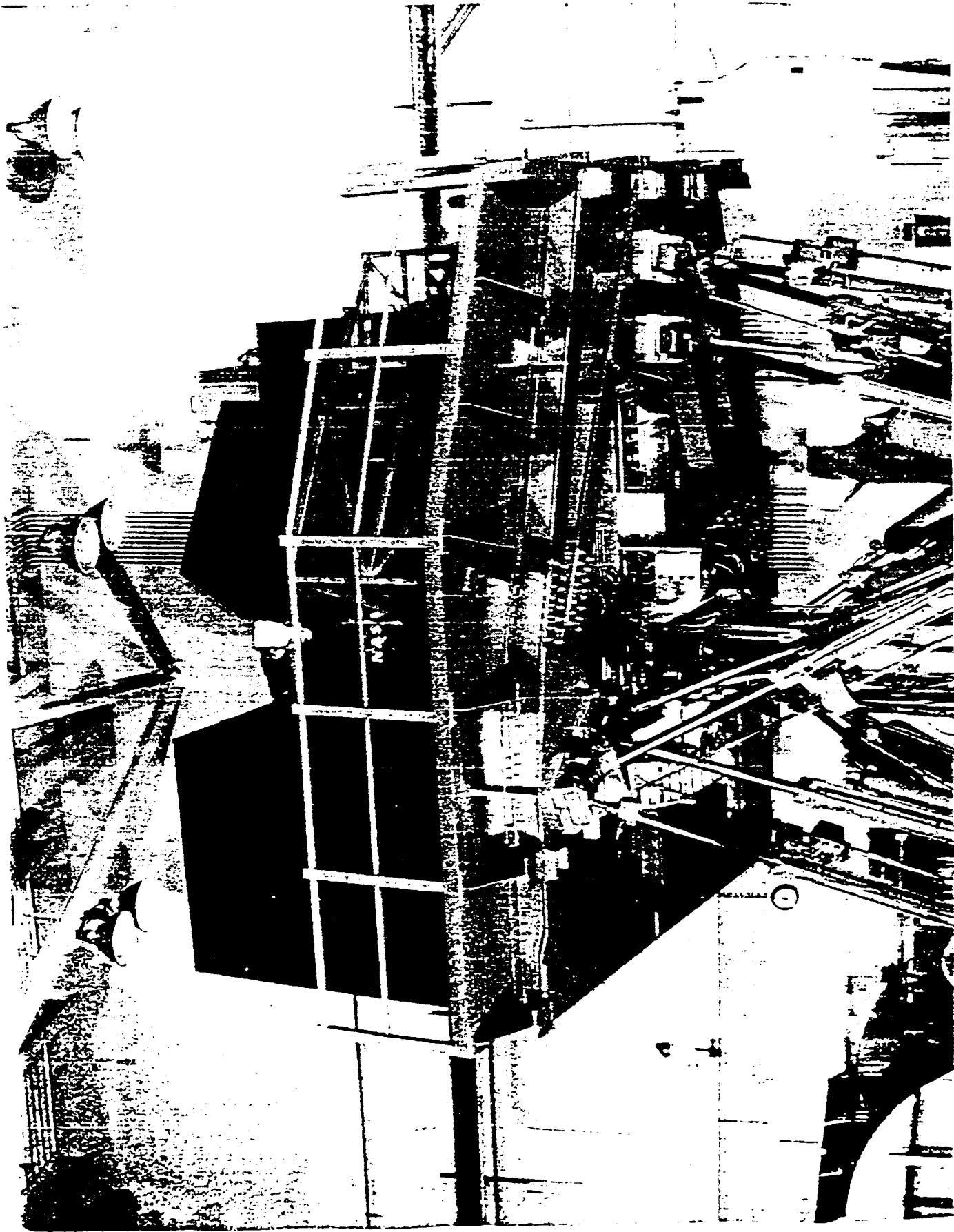
---

**TYPICAL APPLICATIONS:**

- High-Speed Civil Transport
- Personnel Launch System - Approach and Landing
- Generic Hypersonic Aerospacecraft

I-90-13718

NASA



**Flight Simulation Support Services (FSSS)**

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# **DIFFERENTIAL MANEUVERING SIMULATOR**

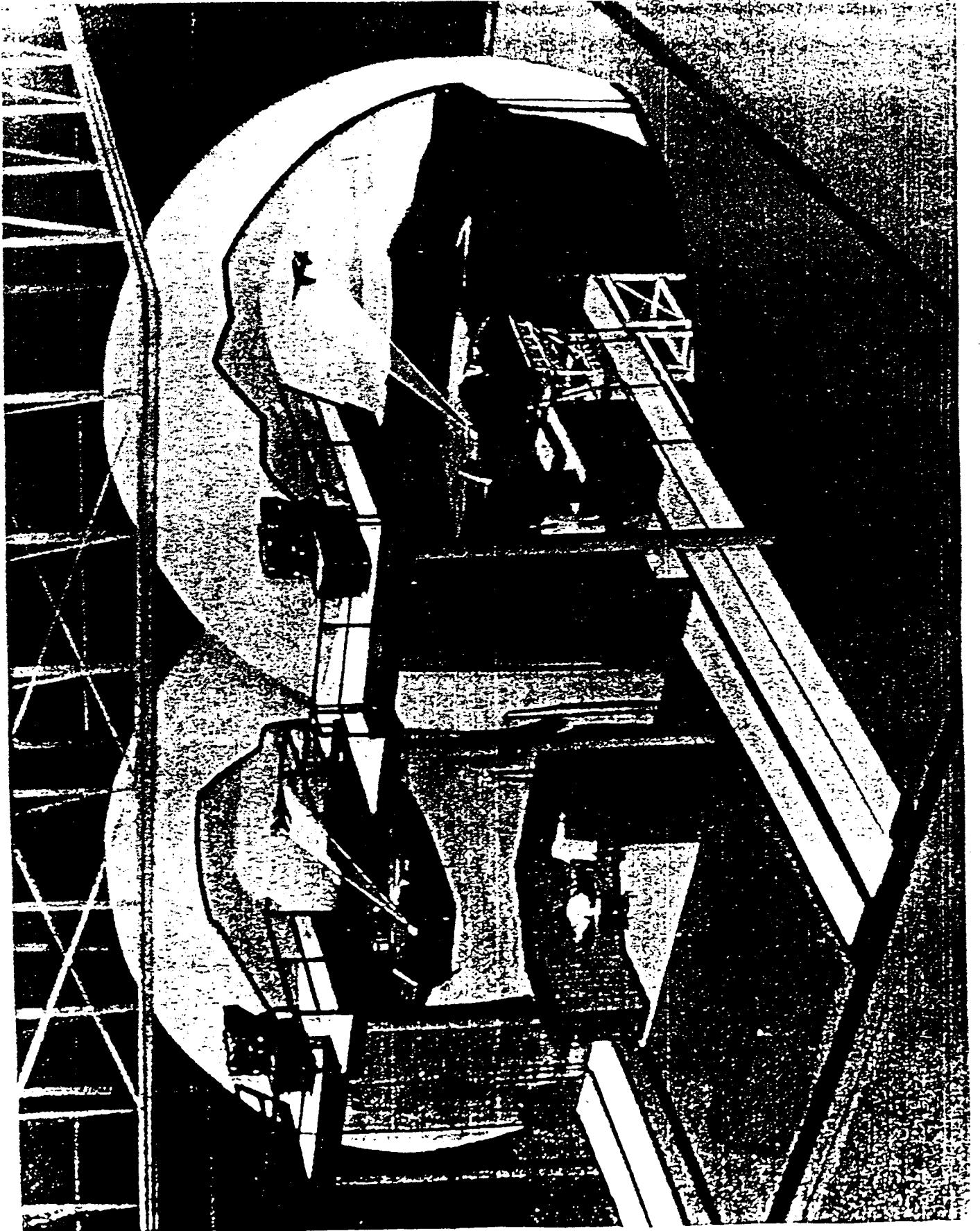
---

## **TYPICAL APPLICATIONS:**

- **F-18 High-Angle-of-Attack Augmentation**
- **Advanced Fighter Configurations**
- **2 vs. 1 Air Combat Simulation**
- **Tactical Guidance Research and Evaluation**
- **Agility Studies**
- **F16-XL**

1-90-10308

NASA







Flight Simulation Support Services (FSSS)

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# GENERAL PURPOSE FIGHTER SIMULATOR

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## TYPICAL APPLICATIONS:

- 2 vs. 1 Air Combat Simulation
- X-31 Drop Model

Flight Simulation Support Services (FSSS)

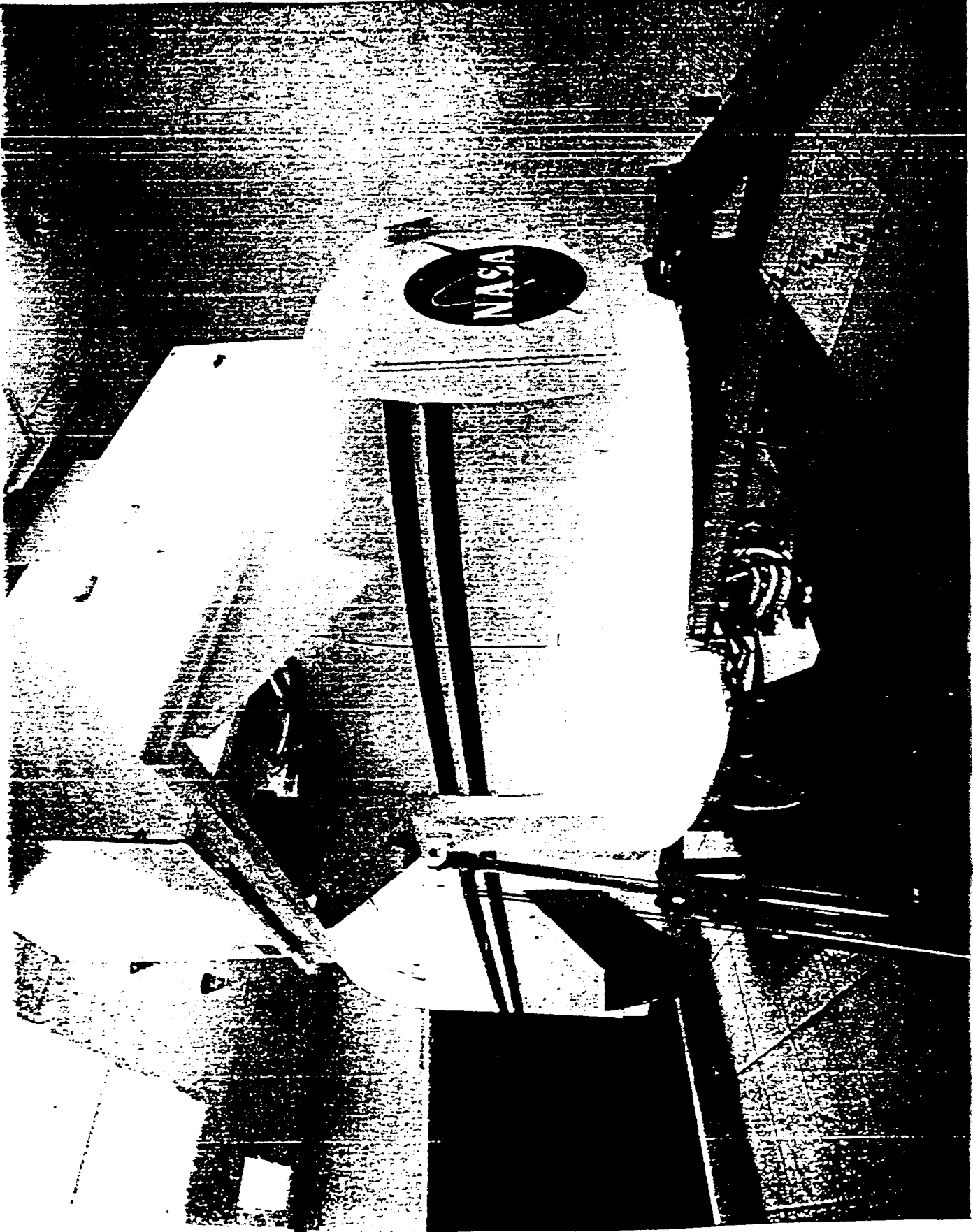
# **GENERAL AVIATION SIMULATOR**

## **TYPICAL APPLICATIONS:**

- Electronic Displays
- Highway in the Sky

NASA

-83-4.584



**Flight Simulation Support Services (FSSS)**

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# **MISSION ORIENTED TERMINAL ARE SIMULATION FACILITY**

---

## **TYPICAL APPLICATIONS:**

- **Cockpit Weather Information Needs**
- **Projects Requiring Air Traffic Control Interaction**

# MISSION ORIENTED TERMINAL AREA SIMULATION (MOTAS)



ATC Controller Station

- Prominent Features**
- 2000 line raster main display
  - Auxiliary display
  - Multi-function keyboard
  - Track ball
  - Multi-color capability



Main Display



Pseudo Pilot Station

## Terminal Area Aircraft Traffic



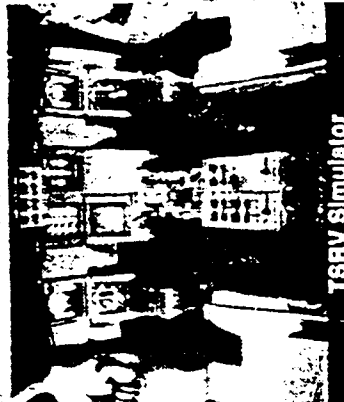
NASA B76

### Capabilities

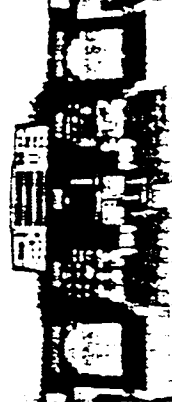
- Live Aircraft
- Fully Crewed Simulators

### Research Applications

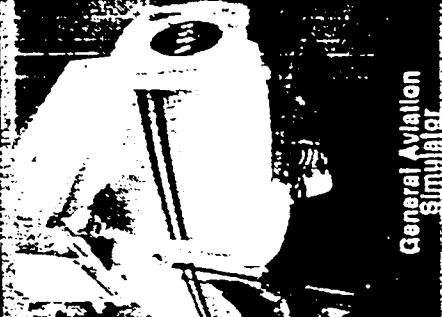
- Flight Management
- Flight Operations
- Control System Design
- Display System Design



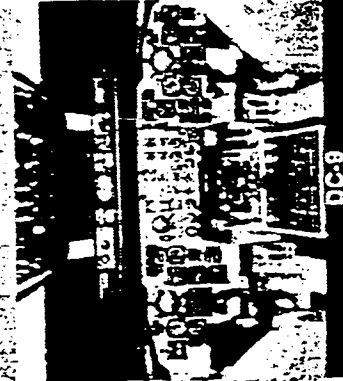
TSRV Simulator



Advanced Concepts Simulator



General Aviation Simulator



DC-8

## Flight Simulation Support Services (FSSS)

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# ANALYSIS AND REAL-TIME SUPPORT AREA

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### TYPICAL APPLICATIONS:

- Advanced Real-Time Subsystem (ARTSS) Highway
- Simulator Sites
- Flight Simulation Control (Operating) Consoles
- ARTSS Maintenance (Hardware and Software)
- Development of Real-Time Simulation Intercom
- Enhancement to Facilities
- Development of New Motion Base Drive Algorithms

## **Flight Simulation Support Services (FSSS)**

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# **MAJOR MODERNIZATIONS**

---

- **Advanced Computer-Generated Image System**
- **Cockpit Motion Facility**
- **Raster Display System**



## Flight Simulation Support Services (FSSS)

# ADVANCED COMPUTER-GENERATED IMAGE SYSTEM

- 3 Eyepoints
  - IGS-0 has 5 channels
  - IGS-1 and IGS-2 each have 3 channels
- Comprehensive Scene Modeling System (SMS) for data base modification/development
- State-of-the-art features
  - Full color photo-derived texture
  - Paged MIP texture for superior antialiasing
  - Low transport delay (~60 ms)
  - Round and flat earth data bases
  - Large altitude range data bases for earth to orbit capability
  - Proper occultation of all polygons in the data base
  - Calligraphic lights (on IGS-0 and IGS-1)
  - Enhanced weather effects (on IGS-0 and IGS-1)
- Delivery Schedule
  - IGS-0 will be delivered in August 1994, Final Acceptance in October 1994
  - IGS-1 will be delivered in January 1995, Final Acceptance in March 1995
  - IGS-2 will be delivered in January 1996, Final Acceptance in March 1996

# Flight Simulation Support Services (FSSS)

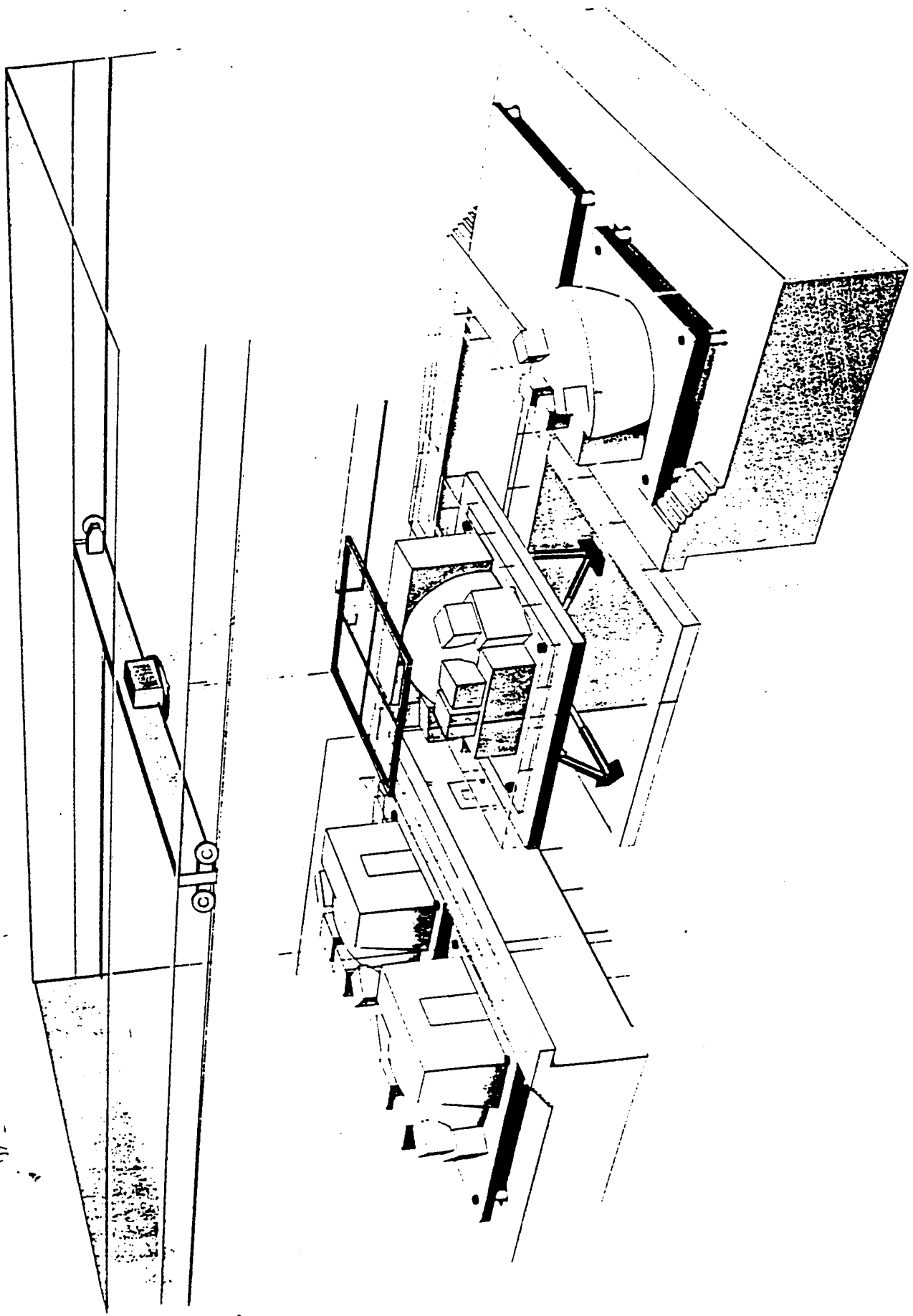
## COCKPIT MOTION FACILITY

Degree of Freedom	Displacement*	Velocity	Acceleration
Pitch	+28 deg -25 deg	+23 °/sec	+225°/s/s
Roll	+28 deg	+23 °/sec	+225°/s/s
Yaw	+38 deg	+30 °/sec	+225°/s/s
Vertical	+41 in	+32 in/sec	±1.0g
Lateral	+55 in	+38 in/sec	±0.7g
Longitudinal	+67 in -55 in	+38 in/sec	±0.7g

\*Non-Simultaneous Motion  
Payload 20,000 lbs.

L-04-1322

5/11



## Flight Simulation Support Services (FSSS)

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# RASTER DISPLAY SYSTEM

---

- Transport Systems Research Vehicle Cockpit Heads-Down Displays
  - Raster Cathode Ray Tubes
- Two Silicon Graphics Onyx/Reality Engine 2 Systems
  - Replace Terabit Eagle 1000 Calligraphic Display System

# Flight Simulation Support Services (FSSS)

## SOURCE EVALUATION COMMITTEE

**Chairman:** Jacob A. Houck

**Voting Members:** Randall D. Grove  
Dr. Bunnell T. McKissick  
Lemuel E. Meetze

**Non-Voting Members:** Staten R. Spruill

**Recorder:** Victoria I. Chung

**Non-Voting Ex-Officio Members:** Dr. Frank Allario  
Samuel A. McPherson  
Billy R. Ashworth  
Randy A. Manning  
Sandra S. Hense, GSA

F. John Sansom  
Mary Jane Yeager  
L. Joseph Connors  
John T. Bush  
Patricia J. Phillips, GSA

**Flight Simulation Support Services (FSSS)**

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# **PROPOSED NEW SIMULATORS**

---

- **High-Speed Civil Transport**
- **Boeing B-757**
- **General Aviation**

# CURRENT CONTRACT

**Contract No.:**

**NAS1-19119**

**Contract Type:**

**Cost-Plus-Fixed-Fee**

**Contractor:**

**Unisys Government Systems  
Systems Support Operations  
8008 Westpark Drive - WP2  
McLean, VA 22102**

**Period of Performance:**

**February 1, 1990  
January 31, 1995**

## **ACQUISITION OVERVIEW**

**REQUIREMENT: FLIGHT SIMULATION SUPPORT SERVICES**

**CONTRACT TYPE: COST-PLUS-FIXED-FEE (CPFF)**

**PERIOD OF PERFORMANCE (POP):  
INITIAL 12-MONTH PERIOD OF PERFORMANCE  
BEGINNING FEBRUARY 1, 1995 WITH FOUR 12-MONTH  
OPTION PERIODS.**

**SIX (6) ADDITIONAL ONE (1) MONTH PERIODS FOR  
EXTENDED SERVICES IF NEEDED.**

**FSSS**



## **LEVEL-OF-EFFORT (LOE)**

As a minimum, you must propose the labor hours necessary to provide the 40 positions set forth in the “Government Estimated Staffing” under Attachment 5 and the three positions set forth in Attachment 6, “Key Personnel”. Since the number of productive manhours per man-year varies among companies, you should propose a staff using your productive man-hours per year.

Note: “Direct labors hours”, to be included in B.2, A. of the contract schedule, will be those productive man-hours expended by contractor personnel in performing work under the contract that are charged as direct labor under the Contractor’s established accounting policy and procedures.

## **PROPOSAL PREPARATION INSTRUCTIONS**

- **THE MISSION SUITABILITY PROPOSAL IS LIMITED TO 40,000 WORDS OR 100 PAGES. (REFERENCE L. 35, PAGE 102)**
- **ARRANGE PROPOSAL IN SEQUENCE, FORMAT AND CONTENT CONSISTENT WITH ARRANGEMENT OF FACTORS AND ASSOCIATED SUBFACTORS SET FORTH IN ARTICLE M.3 TO FACILITATE EVALUATION.**
- **ENSURE THAT PROPOSAL CONTAINS ALL NECESSARY INFORMATION AND IS COMPLETE IN ALL RESPECTS. EVALUATION WILL BE BASED UPON MATERIAL PRESENTED AND NOT WHAT IS IMPLIED.**
- **ENSURE CONSISTENCY BETWEEN YOUR COST PROPOSAL AND MISSION SUITABILITY PROPOSAL. DISCREPANCIES MAY BE VIEWED AS A LACK OF UNDERSTANDING.**

**FSSS**

# **PROPOSAL PREPARATION INSTRUCTIONS (CONTINUED)**

## **COST PROPOSAL**

**Offerors and major subcontractors are required to submit:**

- **Fully executed and supported SF 1411's and all cost forms**
- **Provide cost data on floppy diskettes, 2 copies, formatted under MS DOS containing self-calculating spreadsheets (You must request a Government-provided diskette)**

**REFER TO PAGES 106 THROUGH 110 FOR DETAILED INFORMATION.**

**FSSS**

**PROPOSAL PREPARATION INSTRUCTIONS (CONTINUED)**

**PROPOSAL SUBMISSION: (REFERENCE L-35, PAGE 101)**

**DUE DATE: CLOSE OF BUSINESS  
(4:00 P.M.) JULY 28, 1994**

**PLACE: NASA LANGLEY RESEARCH CENTER  
9A LANGLEY BLVD.  
BUILDING 1195A, ROOM 103  
HAMPTON, VA 23681-0001**

**NUMBER OF COPIES:**

**ORIGINAL AND 12 OF VOLUME I - MISSION SUITABILITY  
PROPOSAL**

**ORIGINAL AND 12 OF VOLUME II - BUSINESS PROPOSAL**

**GOVERNMENT POINT OF CONTACT : STATEN R. SPRUILL  
804-864-2535  
FAX: 804-864-7709  
(REF: L-27, Page 98)**

**FSSS**

## **EVALUATION FACTORS (REFER TO M-3)**

**Two Volumes**

**Volume I - Mission Suitability Proposal**

**Factor 1 - Mission Suitability (Scored, Refer to M-4)**

<b><u>Subfactors</u></b>	<b><u>Weight</u></b>
<b>1. Organization</b>	<b>10%</b>
<b>2. Phase-in, Staffing and Continuing Personnel Management</b>	<b>25%</b>
<b>3. Professional Compensation Plan</b>	<b>15%</b>
<b>4. Operations Plan</b>	<b>30%</b>
<b>5. Key Personnel</b>	<b><u>20%</u></b>
	<b><u>100%</u></b>

**FSSS**

# **EVALUATION FACTORS - CONTINUED**

**Volume II - Business Proposal (non-scored)**

**Factor 2 - Cost**

**Factor 3 - Relevant Experience and Past Performance**

**Factor 4 - Other Considerations**

**Subfactor 1 - Financial Condition and Capability**

**Subfactor 2 - Contract Terms and Conditions**

**Subfactor 3 - Small Business and Small Disadvantaged  
Business Subcontracting Plan .**

**FSSS**

**SOURCE EVALUATION COMMITTEE SCHEDULE**

<b>Presolicitation Conference</b>	<b>1/14/94</b>
<b>RFP Issuance</b>	<b>6/13/94</b>
<b>Preproposal Conference</b>	<b>7/06/94</b>
<b>Proposals Due</b>	<b>7/28/94</b>
<b>Selection</b>	<b>10/18/94</b>
<b>Negotiation</b>	<b>11/08/94</b>
<b>Award</b>	<b>11/23/94</b>
<b>Contract Start</b>	<b>2/01/95</b>

**FSSS**

## **RELATIVE IMPORTANCE OF EVALUATION FACTORS**

- Overall, in the selection of a Contractor for negotiation leading to contract award, Mission Suitability, Cost, Relevant Experience and Past Performance and Other Considerations will be of essentially equal importance.
- Within Factor 2, Cost, the costs associated with the option for the additional level-of-effort and the six 1-month option periods may be considered of less significance than the costs for the initial period (including phase-in) and the first through fourth priced options to extend the contract term.



PREPROPOSAL CONFERENCE ATTENDEE LIST

# PLEASE SIGN IN

## NAME/PHONE NO.

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LOCKHEED ENGINEERING & SCIENCES CO  
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Lockheed  
144 Research Dr.  
Hampton VA 23666

AVIA Research  
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NSI/MANTECH  
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**(Q6) Section L.35.C.1.c.4.k, page 110:**

**Please clarify method of estimating costs of the Options to Increase Level of Effort. Are offerors to multiply the weighted average straight-time rate of the three positions listed for each contract option period times the Level of Effort increase (i.e., 18,750) resulting in a cost estimate for each contract option period?**

Yes, there should be a cost estimate for each extension option period; see H.1.B.2 on page 16.

**(Q7) I.7.a, page 31:**

**The Government states that "... overtime premium cost does not exceed NONE...". Please clarify the impact of no overtime premium as it relates to Fair Labor Standards Act for non-exempt employees.**

Overtime and overtime premium are permissible under the contract if it fits any of the criteria set forth in part (a) of clause 52.222-2.

**(Q8) Attachments 5 and 6:**

**Attachment 5 provides the number of estimated positions for non-key personnel. Attachment 6 presents the three key personnel positions for a program total of 43. Should offerors assume for pricing purposes, that there will be no change in this staffing level for the complete contract term?**

The Government will have options to increase the level of effort throughout the term of the contract. See H.1.B on page 15 and L.35.C.1.c.(4).(k) on page 110.

**(Q9) Please provide a detailed organization chart for the LaRC Analysis and Simulation Branch.**

The organization for the Simulation Systems Branch (SSB), previously called Analysis and Simulation Branch (ASB), was explained in the preproposal conference and is included in this amendment.

**(Q10) What are the Small Business and Small Disadvantaged Business subcontracting goals on this program, as percentages of the total contract value?**

No specific percentage has been established for this solicitation. However, offerors should reference I.18 NASA Small Disadvantage Business Goals (NASA 18-52.219-76) on page 45. The Government will evaluate the offeror's Small Business and Small Disadvantage Business Plan in accordance with Factor 4, Subfactor 3, pages 111 and 116.

**(Q11) Page 107 shows the initial contract period from 2/1/95 through 1/31/96, but page 126, Labor Cost Summary, shows a 2-year initial contract from 2/1/95 through 1/31/97. Which is correct?**

The initial contract period of 2/1/95 through 1/31/96 on page 107 is correct.

Amendment 1 to this solicitation corrected the cost forms included as attachment 4 beginning on page 124 through 127.

**(Q1) Sections B.4, page 3 and L.35.C.1.c.4.d, page 109:**

**In these sections the Government includes subcontractors as one of the costs included in the Government estimated Other Direct Costs. Does this exclude subcontractor costs that are already accounted for with respect to pricing the 40 staff positions and 3 Key Personnel positions? If no, please clarify method of estimating subcontract costs greater than \$700,000.**

Yes, this excludes subcontractor costs that are included in the Form A series line "Subcontract Direct Level of Effort Labor, if any".

**(Q2) C.1.A.2.f, page 5:**

**(a) Does this requirement allow for the payment of overtime premiums for response during nonregular shift operations?**

Yes.

**(b) If yes to (a), will FAR 52.222-2 in I.7 be modified to insert a dollar amount in (a) instead of "NONE"?**

No, because in accordance with FAR clause 52.222-2 included as I.7 on page 31, overtime premium will be paid for work which fits any of the criteria set forth in part (a) of the clause. Any responses to service or emergency calls during nonregular shift operations should fit one of the criteria set forth in part (a) of the clause.

**(c) Will employees be allowed to work from home to respond to emergency calls?**

Yes, as determined to be appropriate by the contractor.

**(Q3) I.1, page 24:**

**Should NASA FAR Supplement 18-52.219-75 be 18-52.219-76?**

Both NASA FAR Supplement clause 18-52.219-75 and 18-52.219-76 are included on page 24. Reference I.1 for 18-52.219-75 and I.2 clauses in full text, for 18-52.219-76.

**(Q4) M.2, page 112:**

**Should paragraph 407.6.d be 407.4.d?**

No, the paragraph 407.6.d is correct.

**(Q5) C.1(4)(a):**

**Are the 2,000 hours of overtime per year to be priced in accordance with L.30 on page 99?**

The required overtime should be priced in accordance with your overtime policy, cost accounting practices, and the FLSA (to the extent it applies). If uncompensated overtime, as defined in L.30, is identified in your proposal the instructions in L.30 are applicable.

**(Q12) Which simulators are maintained by the government and which by the contractor?**

The DMS, VMS, and CGI are presently maintained by NASA hardware personnel. All other sites are maintained and operated by contract personnel, however this could change due to changes in research requirements.

**(Q13) Please provide a mapping of the distribution of FSSS contractor positions across the simulators within the FSF.**

The distribution of the simulation support contract or positions reflects the organization of the incumbent contractor and is considered to be proprietary. Refer to L35.B.1.b.(4), page 104.

**(Q14) What types of PCs and workstations are available? Which staff positions have access to them?**

See Exhibit D , page 70. The majority of the PCs and workstations are 486s.

The PCs and workstations are available to the contractors for the required contracting work.

**(Q15) Please provide information about the LaRC simulator schedule.**

Simulator schedules are developed weekly based on research requirements. The typical weekly schedule consists of 3-hour blocks beginning at 8:00 a.m. Researchers may require simulation time to be more than one continuous block.

**(Q16) (i) If an offeror is to propose the optimum staff, please provide examples of sample work orders.**

**(ii) Please provide representative set of sample tasks upon which to base the proposed skill mix. It is not possible to reasonably estimate a skill mix based solely on the information in the Statement of Work, as the Statement of Work contains no information regarding the distribution of contractual effort across the various work areas. Without sample tasks, the incumbent contractor has an unfair advantage.**

The Government believes that the RFP, including the Statement of Work and Attachment 5, which provides the Government estimated staffing by major work areas, is sufficient for proposal purposes. However, if a company wishes to review tasks/work orders issued under the current contract, these tasks/work orders are available through the Freedom of Information Office, Mail Stop 115, Attention: Margaret Hunt. The offeror should propose a skill mix distribution that best fits its organization and meets the Government requirements.

**(Q17) (i) The Attachment 6, Key Personnel Minimum Requirements, appear to favor, unduly, incumbent personnel and experience. Has the job complexity changed, since the last RFP, to warrant the far more demanding minimum requirements? Would not the requirements from the last solicitation be appropriate?**

**(ii) The Key Personnel requirements are significantly broader and deeper in scope (i.e., work areas, work functions, technical disciplines and specific experience) in this RFP than in the RFP for the current contract. In particular, note the stringent and concurrent all-encompassing description for the Simulator Engineering, Operations and Maintenance Manager. How have the work functions changed to justify the more stringent requirements for the Key Personnel Managers?**

(iii) In the 1989 RFP for the previous contract, the three key personnel required B.S. degrees. While the total staff was reduced by more than 10 people, and the job responsibilities for key personnel do not seem to have changed significantly, they are now required to have M.S. degrees, or at least 24 units of graduate work. Since this is a support contract, not a research contract, what is the rationale for the higher education requirements?

The 1989 RFP included staff and a management position for the communications portion of the RFP. Since communications is not part of the FSSS requirements, the communications positions which were included in the 1989 RFP have been removed from the FSSS RFP.

The utilization of real-time simulation in research and development has expanded greatly due to significant increases in enabling technologies which allow much more realistic and complex simulations. While it is true that this is a support service contract, the LaRC research staff depends heavily on the contract staff to develop complex software and hardware subsystems and to participate in studies and analysis of resulting data. It is the position of the Government that the education received at the B.S. level does not provide the expertise and knowledge needed to handle the current and projected simulation research requirements, and that the required theoretical background can only be obtained at the M.S. level or equivalent level of education as defined in the RFP.

**(Q18) May the requested salary data for proposed Key Personnel be attached under separate cover?**

No, it should be included in the Mission Suitability Proposal in accordance with the requirement set forth in L.35.B.e.(4) on page 106 and be included in the Business Proposal as part of the supporting cost data.

**(Q19) Page 5, A.2.e. This paragraph includes a requirement, for the contractor, to handle and package hazardous waste. What hazardous wastes are anticipated? Will the contractor need special hazardous waste training?**

Hazardous wastes that would be handled under the proposed contract consists of hydraulic oil and cleaning fluids.

The Government will provide any specified training required for the handling and packaging of hazardous waste.

**(Q20) Page 10, F.2. This paragraph states that performance may be at "other sites as may be designated by work orders". Please provide examples of the "other sites".**

The reference to other sites refers to possible work areas consisting of potential test areas such as the Wallops Flight Facility. The reference to work orders in F.2 on page 10 will be deleted since there are no work orders being issued under this contract.

**(Q21) (i) Section H.1.A states that the options are "to extend the term of the contract for one additional period of 12 months, and one additional period of 24 months." The chart following shows four one-year option periods. Please clarify this apparent conflict.**

**(ii) Page 15, H.1.A. The option periods described in the text do not appear to be consistent with the table included in the same paragraph. The text describes two option periods of 36 months total. The table shows four option periods of 48 months total. Which is correct?**

AMENDMENT OF SOLICITATION/ MODIFICATION OF CONTRACT

2. AMENDMENT/MODIFICATION NO. 3	3. EFFECTIVE DATE NOV 02 1994	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
6. ISSUED BY National Aeronautics and Space Administration Langley Research Center Hampton, VA 23681-0001		7. ADMINISTERED BY (If other than Item 6)	

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)  TO ALL CONCERNED	(X)	9A. AMENDMENT OF SOLICITATION NO. 1-120-1150.3058
		9B. DATED (SEE ITEM 11) 6/13/94
		10A. MODIFICATION OF CONTRACT/OR NO.
		10B. DATED (SEE ITEM 13)
CODE		FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

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

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

12. ACCOUNTING AND APPROPRIATION DATA (If required)

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

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

E. IMPORTANT: Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office.

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

Subject: NASA Request for Proposal 1-120-1150.3058--Flight Simulation Support Services

The purpose of this amendment is to incorporate the latest revision to the Wage Determination. Consequently, the Contract Schedule is amended as follows:

(CONTINUED ON ATTACHED PAGE)

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

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) WILLIAM R. KIVETT
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED
(Signature of person authorized to sign)	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)
	16C. DATE SIGNED

# INSTRUCTIONS

Instructions for items other than those that are self-explanatory, are as follows:

(a) Item 1 (Contract ID Code). Insert the contract type identification code that appears in the title block of the contract being modified.

(b) Item 3 (Effective date).

(1) For a solicitation amendment, change order, or administrative change, the effective date shall be the issue date of the amendment, change order, or administrative change.

(2) For a supplemental agreement, the effective date shall be the date agreed to by the contracting parties.

(3) For a modification issued as an initial or confirming notice of termination for the convenience of the Government, the effective date and the modification number of the confirming notice shall be the same as the effective date and modification number of the initial notice.

(4) For a modification converting a termination for default to a termination for the convenience of the Government, the effective date shall be the same as the effective date of the termination for default.

(5) For a modification confirming the contracting officer's determination of the amount due in settlement of a contract termination, the effective date shall be the same as the effective date of the initial decision.

(c) Item 6 (Issued By). Insert the name and address of the issuing office. If applicable, insert the appropriate issuing office code in the code block.

(d) Item 8 (Name and Address of Contractor). For modifications to a contract or order, enter the contractor's name, address, and code as shown in the original contract or order, unless changed by this or a previous modification.

(e) Items 9, (Amendment of Solicitation No.—Dated), and 10, (Modification of Contract/Order No.—Dated). Check the appropriate box and in the corresponding blanks insert the number and date of the original solicitation, contract, or order.

(f) Item 12 (Accounting and Appropriation Data). When appropriate, indicate the impact of the modification on each affected accounting classification by inserting one of the following entries:

(1) Accounting classification .....  
Net increase \$ .....

(2) Accounting classification .....  
Net decrease \$ .....

NOTE: If there are changes to multiple accounting classifications that cannot be placed in block 12 insert an asterisk and the words "See continuation sheet"

(g) Item 13. Check the appropriate box to indicate the type of modification. Insert in the corresponding blank the authority under which the modification issued. Check whether or not contractor must sign this document. (See FAR 43.103.)

(h) Item 14 (Description of Amendment/Modification).

(1) Organize amendments or modifications under the appropriate Uniform Contract Format (UCF) section headings from the applicable solicitation or contract. The UCF table of contents, however, shall not be set forth in this document.

(2) Indicate the impact of the modification on the overall total contract price by inserting one of the following entries:

(i) Total contract price increased by \$ .....

(ii) Total contract price decreased by \$ .....

(iii) Total contract price unchanged.

(3) State reason for modification.

(4) When removing, reinstating, or adding funds identify the contract items and accounting classifications.

(5) When the SF 30 is used to reflect a determination by the contracting officer of the amount due in settlement of a contract terminated for the convenience of the Government, the entry in Item 12 of the modification may be limited to —

(i) A reference to the letter determination; and

(ii) A statement of the net amount determined to be due in settlement of the contract.

(6) Include subject matter or short title of solicitation/contract where feasible.

(i) Item 16B. The contracting officer's signature is not required on solicitation amendments. The contracting officer's signature is normally affixed last on supplemental agreements.

A. Section H, H.10, is deleted in its entirety and the following is incorporated in lieu thereof:

"H.10 WAGE DETERMINATIONS AND FRINGE BENEFITS (LaRC 52.237-90)  
(NOV 1990)

The Register of Wage Determinations and Fringe Benefits, Number 94-2544, Exhibit B, dated August 8, 1994 lists the wage rate and fringe benefits for designated labor classifications which shall be the minimum paid under this contract. See Exhibit B for a copy of this wage determination. This determination constitutes the 'attachment' as referred to in paragraph (a), Compensation, of the Section I clause entitled 'Service Contract Act of 1965.'

B. Attached hereto is the latest revision to Section J, Exhibit B, Register of Wage Determination and Fringe Benefits. WD's 87-0211 (Revision 14) and 87-0215 (Revision 15) are deleted and WD 94-2544 is substituted therefor. The Wage Determination will be effective on the contract February 1, 1995.

C. All subsequent cost proposals submitted should include any effects caused by the incorporation of this latest Wage Determination.

REGISTER OF WAGE DETERMINATIONS UNDER THE SERVICE CONTRACT ACT By direction of the Secretary of Labor

U.S. DEPARTMENT OF LABOR EMPLOYMENT STANDARDS ADMINISTRATION WAGE AND HOUR DIVISION WASHINGTON, D.C. 20210

Alan L. Moss Director Division of Wage Determinations

Wage Determination No.: 94-2544 Revision No.: 1 Date of Last Revision: 08/08/1994

State(s): North Carolina, Virginia

Area: NORTH CAROLINA COUNTIES OF CAMDEN, CHOWAN, CURRITUCK, GATES, PASQUOTANK, PERQUIMANS. VIRGINIA COUNTIES OF CHESAPEAKE, GLOUCESTER, HAMPTON, ISLE OF WIGHT, JAMES CITY, MATHEWS, NEWPORT NEWS, NORFOLK, POQUOSON, PORTSMOUTH, SOUTHAMPTON, SUFFOLK, SURRY, VIRGINIA BEACH, WILLIAMSBURG, YORK.

\*\* Fringe Benefits Required For All Occupations Included In This Wage Determination Follow The Occupational Listing \*\*

OCCUPATION CODE AND TITLE - ADMINISTRATIVE SUPPORT AND CLERICAL: MINIMUM HOURLY WAGE

Table with 2 columns: Occupation Code and Title, Minimum Hourly Wage. Lists various clerical and administrative roles such as Accounting Clerk, Court Reporter, and General Clerk with their respective hourly rates.



WAGE DETERMINATION NO.:94-2544 (Rev. 1)

ISSUE DATE:08/08/1994 Page 2 of 9

01342	Stenographer II	\$ 9.86
01400	Supply Technician	\$ 10.00
01420	Survey Worker(Interviewer)	\$ 9.81
01460	Switchboard Operator- Receptionist	\$ 8.08
01531	Travel Clerk I	\$ 6.31
01532	Travel Clerk II	\$ 6.69
01533	Travel Clerk III	\$ 7.06
01551	Typist I	\$ 7.42
01552	Typist II	\$ 8.92
01611	Word Processor I	\$ 8.73
01612	Word Processor II	\$ 9.80
01613	Word Processor III	\$ 10.97

**AUTOMATIC DATA PROCESSING:**

03010	Computer Data Librarian	\$ 8.26
03041	Computer Operator I	\$ 8.26
03042	Computer Operator II	\$ 9.58
03043	Computer Operator III	\$ 11.83
03044	Computer Operator IV	\$ 13.70
03045	Computer Operator V	\$ 14.56
03071	Computer Programmer I 1/	\$ 11.02
03072	Computer Programmer II 1/	\$ 13.62
03073	Computer Programmer III 1/	\$ 16.20
03074	Computer Programmer IV 1/	\$ 19.39
03101	Computer Systems Analyst I 1/	\$ 17.62
03102	Computer Systems Analyst II 1/	\$ 20.28
03103	Computer Systems Analyst III 1/	\$ 23.23
03160	Peripheral Equipment Operator	\$ 8.26

**AUTOMOTIVE SERVICE:**

05005	Automobile Body Repairer, Fiberglass	\$ 14.05
05010	Automotive Glass Installer	\$ 12.82
05040	Automotive Worker	\$ 12.82
05070	Electrician, Automotive	\$ 13.42
05100	Mobile Equipment Servicer	\$ 11.59
05130	Motor Equipment Metal Mechanic	\$ 14.05
05160	Motor Equipment Metal Worker	\$ 12.82
05190	Motor Vehicle Mechanic	\$ 14.05
05220	Motor Vehicle Mechanic Helper	\$ 10.95
05250	Motor Vehicle Upholstery Worker	\$ 12.82
05280	Motor Vehicle Wrecker	\$ 12.82
05310	Painter, Automotive	\$ 13.42
05340	Radiator Repair Specialist	\$ 12.82
05370	Tire Repairer	\$ 11.59
05400	Transmission Repair Specialist	\$ 14.05

**FOOD PREPARATION AND SERVICE:**

07010	Baker	\$ 8.68
07041	Cook I	\$ 7.85
07042	Cook II	\$ 8.68
07070	Dishwasher	\$ 6.05
07100	Food Service Worker	\$ 6.05
07130	Meat Cutter	\$ 8.68
07250	Waiter/Waitress	\$ 6.58

WAGE DETERMINATION NO.:94-2544 (Rev. 1) ISSUE DATE:08/08/1994 Page 3 of 9

**FURNITURE MAINTENANCE AND REPAIR:**

09010 Electrostatic Spray Painter	\$ 13.42
09040 Furniture Handler	\$ 10.95
09070 Furniture Refinisher	\$ 13.42
09100 Furniture Refinisher Halper	\$ 10.95
09110 Furniture Repairer, Minor	\$ 12.19
09130 Upholsterer	\$ 13.42

**GENERAL SERVICES AND SUPPORT:**

11030 Cleaner, Vehicles	\$ 6.05
11060 Elevator Operator	\$ 6.05
11090 Gardener	\$ 7.75
11121 Housekeeping Aide I	\$ 5.93
11122 Housekeeping Aide II	\$ 6.49
11150 Janitor	\$ 6.05
11180 Laborer	\$ 9.68
11210 Laborer, Grounds Maintenance	\$ 6.58
11240 Maid or Houseman	\$ 5.52
11270 Pest Controller	\$ 8.25
11300 Refuse Collector	\$ 6.05
11360 Window Cleaner	\$ 6.58

**HEALTH:**

12010 Ambulance Driver	\$ 8.75
12040 Emergency Medical Technician	\$ 9.13
12070 Licensed Practical Nurse	\$ 8.82
12100 Medical Assistant	\$ 7.88
12130 Medical Laboratory Technician	\$ 7.88
12160 Medical Record Clerk	\$ 7.88
12190 Medical Record Technician	\$ 10.92
12220 Nursing Assistant	\$ 7.02
12250 Pharmacy Technician	\$ 9.83
12280 Phlebotomist	\$ 7.88
12311 Registered Nurse I	\$ 10.92
12312 Registered Nurse II	\$ 13.36
12313 Registered Nurse II, Specialist	\$ 13.36
12314 Registered Nurse III	\$ 16.16
12315 Registered Nurse III, Anesthetist	\$ 16.16
12316 Registered Nurse IV	\$ 19.37

**INFORMATION AND ARTS:**

13002 Audiovisual Librarian	\$ 14.56
13011 Exhibits Specialist I	\$ 13.06
13012 Exhibits Specialist II	\$ 15.87
13013 Exhibits Specialist III	\$ 17.63
13041 Illustrator I	\$ 13.06
13042 Illustrator II	\$ 15.87
13043 Illustrator III	\$ 17.63
13050 Library Technician	\$ 11.02
13071 Photographer I	\$ 10.40
13072 Photographer II	\$ 13.06
13073 Photographer III	\$ 15.87
13074 Photographer IV	\$ 17.63
13075 Photographer V	\$ 21.32

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**LAUNDRY, DRY CLEANING, PRESSING:**

15010 Assembler	\$ 5.18
15030 Counter Attendant	\$ 5.18
15040 Dry Cleaner	\$ 6.30
15070 Finisher, Flatwork, Machine	\$ 5.18
15090 Presser, Hand	\$ 5.18
15100 Presser, Machine, Dry Cleaning	\$ 5.18
15130 Presser, Machine, Shirts	\$ 5.18
15160 Presser, Machine, Wearing Apparel, Laundry	\$ 5.18
15190 Sewing Machine Operator	\$ 6.71
15220 Tailor	\$ 7.11
15250 Washer, Machine	\$ 5.57

**MACHINE TOOL OPERATION AND REPAIR:**

19010 Machine-tool Operator (Toolroom)	\$ 14.05
19040 Tool and Die Maker	\$ 15.57

**MATERIALS HANDLING AND PACKING:**

21010 Fuel Distribution System Operator	\$ 12.82
21020 Material Coordinator	\$ 12.19
21030 Material Expediter	\$ 12.19
21040 Material Handling Laborer	\$ 7.44
21071 Forklift Operator	\$ 9.05
21100 Shipping/Receiving Clerk	\$ 8.85
21130 Shipping Packer	\$ 8.85
21150 Stock Clerk	\$ 8.85
21210 Tools and Parts Attendant	\$ 10.95
21400 Warehouse Specialist	\$ 10.54

**MECHANICS AND MAINTENANCE AND REPAIR:**

23010 Aircraft Mechanic	\$ 14.05
23040 Aircraft Mechanic Helper	\$ 10.95
23060 Aircraft Servicer	\$ 12.19
23070 Aircraft Worker	\$ 12.82
23100 Appliance Mechanic	\$ 13.42
23120 Bicycle Repairer	\$ 11.59
23125 Cable Splicer	\$ 14.05
23130 Carpenter, Maintenance	\$ 13.42
23140 Carpet Layer	\$ 13.42
23160 Electrician, Maintenance	\$ 15.57
23181 Electronics Technician, Maintenance I	\$ 13.99
23182 Electronics Technician, Maintenance II	\$ 14.31
23183 Electronics Technician, Maintenance III	\$ 15.33
23260 Fabric Worker	\$ 12.19
23290 Fire Alarm System Mechanic	\$ 14.05
23310 Fire Extinguisher Repairer	\$ 11.59
23340 Fuel Distribution System Mechanic	\$ 14.05
23370 General Maintenance Worker	\$ 8.75
23400 Heating, Refrigeration and Air Conditioning Mechanic	\$ 14.05

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23430 Heavy Equipment Mechanic	\$ 14.05
23460 Instrument Mechanic	\$ 14.05
23500 Locksmith	\$ 13.42
23530 Machinery Maintenance Mechanic	\$ 14.05
23550 Machinist, Maintenance	\$ 14.05
23580 Maintenance Trades Helper	\$ 10.95
23640 Millwright	\$ 14.05
23700 Office Appliance Repairer	\$ 13.42
23740 Painter, Aircraft	\$ 13.42
23760 Painter, Maintenance	\$ 13.42
23790 Pipefitter, Maintenance	\$ 14.05
23800 Plumber, Maintenance	\$ 13.42
23820 Pneudraulic Systems Mechanic	\$ 14.05
23850 Rigger	\$ 14.05
23870 Scale Mechanic	\$ 12.82
23890 Sheet-metal Worker, Maintenance	\$ 14.05
23910 Small Engine Mechanic	\$ 12.82
23930 Telecommunications Mechanic I	\$ 14.05
23940 Telecommunications Mechanic II	\$ 15.22
23950 Telephone Lineman	\$ 14.05
23960 Welder, Combination, Maintenance	\$ 14.05
23965 Well Driller	\$ 14.05
23970 Woodcraft Worker	\$ 14.05
23980 Woodworker	\$ 12.22

## PERSONAL NEEDS:

24570 Child Care Attendant	\$ 6.01
24600 Chore Aide	\$ 4.91
24630 Homemaker	\$ 8.33

## PLANT AND SYSTEM OPERATION:

25010 Boiler Tender	\$ 14.05
25040 Sewage Plant Operator	\$ 13.42
25070 Stationary Engineer	\$ 14.05
25190 Ventilation Equipment Tender	\$ 10.95
25210 Water Treatment Plant Operator	\$ 13.42

## PROTECTIVE SERVICE:

27004 Alarm Monitor	\$ 7.21
27010 Court Security Officer	\$ 9.68
27040 Detention Officer	\$ 9.68
27070 Firefighter	\$ 10.50
27101 Guard I	\$ 6.03
27102 Guard II	\$ 7.21
27130 Police Officer	\$ 12.28

## TECHNICAL:

29010 Air Traffic Control 2/ Specialist, Center	\$ 21.67
29011 Air Traffic Control 2/ Specialist, Station	\$ 14.94
29012 Air Traffic Control 2/ Specialist, Terminal	\$ 16.46
29020 Archeological Technician	\$ 15.87
29030 Cartographic Technician	\$ 15.87
29040 Civil Engineering Technician	\$ 15.87

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29061 Drafter I	\$ 9.24
29062 Drafter II	\$ 10.40
29063 Drafter III	\$ 13.06
29064 Drafter IV	\$ 15.87
29070 Embalmer	\$ 17.63
29081 Engineering Technician I	\$ 10.36
29082 Engineering Technician II	\$ 11.63
29083 Engineering Technician III	\$ 13.02
29084 Engineering Technician IV	\$ 16.12
29085 Engineering Technician V	\$ 19.72
29086 Engineering Technician VI	\$ 23.86
29090 Environmental Technician	\$ 15.87
29210 Laboratory Technician	\$ 11.83
29240 Mathematical Technician	\$ 15.87
29330 Mortician	\$ 17.63
29390 Photooptics Technician	\$ 15.87
29480 Technical Writer	\$ 19.39
29620 Weather Observer, Senior 3/	\$ 12.80
29621 Weather Observer, Combined 3/ Upper Air and Surface Programs	\$ 11.83
29622 Weather Observer, Upper Air 3/	\$ 11.83

**TRANSPORTATION/MOBILE EQUIPMENT  
OPERATION:**

31030 Bus Driver	\$ 9.15
31100 Driver Messenger	\$ 8.70
31200 Heavy Equipment Operator	\$ 14.05
31290 Shuttle Bus Driver	\$ 8.75
31300 Taxi Driver	\$ 7.29
31361 Truckdriver, Light Truck	\$ 8.75
31362 Truckdriver, Medium Truck	\$ 9.15
31363 Truckdriver, Heavy Truck	\$ 9.65
36364 Truckdriver, Tractor-Trailer	\$ 10.15

**MISCELLANEOUS:**

99005 Aircraft Quality Control Inspector	\$ 15.22
99020 Animal Caretaker	\$ 7.00
99030 Cashier	\$ 5.93
99040 Child Care Center Clerk	\$ 7.50
99050 Desk Clerk	\$ 7.00
99260 Instructor	\$ 17.63
99300 Lifeguard	\$ 5.36
99350 Park Attendant (Aide)	\$ 6.73
99400 Photofinishing Worker	\$ 6.01
99500 Recreation Specialist	\$ 13.04
99510 Recycling Worker	\$ 7.41
99610 Sales Clerk	\$ 5.36
99630 Sports Official	\$ 5.36
99658 Survey Party Chief	\$ 7.85
99659 Surveying Technician	\$ 7.50
99660 Surveying Aide	\$ 4.91
99690 Swimming Pool Operator	\$ 8.68
99720 Vending Machine Attendant	\$ 7.41
99730 Vending Machine Repairer	\$ 8.68
99740 Vending Machine Repairer Helper	\$ 7.41

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reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$4.25 per week (or \$.85 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

**\*\* NOTES APPLYING TO THIS WAGE DETERMINATION \*\***

**Source of Occupational Titles and Descriptions:**

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations," Fourth Edition, January 1993, as amended by First Supplement December 1993, unless otherwise indicated. This publication may be obtained from the Superintendent of Documents, at 202-783-3238, or by writing to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Copies of specific job descriptions may also be obtained from the appropriate contracting officer.

**REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE  
(Standard Form 1444 (SF 1444))**

**Conformance Process:**

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. (See Section 4.6 (C) (vi)) When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation(s) and computes a proposed rate(s).

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**\*\* Fringe Benefits Required For All Occupations Included In  
This Wage Determination \*\***

**HEALTH & WELFARE:** Life, accident, and health insurance plans, sick leave, pension plans, civic and personal leave, and savings and thrift plans. Minimum employer contributions costing an average of \$2.56 per hour computed on the basis of all hours worked by service employees employed on the contract. May include such benefits as severance pay.

**VACATION:** 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 10 years; 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or successor, wherever employed, and with predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 4.173)

**HOLIDAYS:** Minimum of ten paid holidays per year: New Year's Day, Martin Luther King Jr.'s Birthday, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. (A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

- 1/ Does not apply to employees employed in a bona fide executive, administrative, or professional capacity as defined and delineated in 29 CFR 541. (See 29 CFR 4.156)
- 2/ **NIGHT DIFFERENTIAL:** An employee is entitled to pay for all work performed between the hours of 6:00 P.M. and 6:00 A.M. at the rate of basic pay plus a night pay differential amounting to 10 percent of the rate of basic pay.
- 3/ **NIGHT PAY & SUNDAY PAY:** If you work at night as a part of a regular tour of duty, you will earn a NIGHT DIFFERENTIAL and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employee (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

**\*\* UNIFORM ALLOWANCE \*\***

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to

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2) After contract award, the contractor prepares a written report listing in order proposed classification title(s), a Federal grade equivalency (FGE) for each proposed classification(s), job description(s), and rationale for proposed wage rate(s), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.

3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b)(2) of Regulations 29 CFR Part 4).

4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.

5) The contracting officer transmits the Wage and Hour decision to the contractor.

6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.