



**COST PLUS FIXED FEE  
RESEARCH & DEVELOPMENT SUBCONTRACT**

**Subcontract No. SPECIMEN**

**BETWEEN**

**CALIFORNIA INSTITUTE OF TECHNOLOGY  
JET PROPULSION LABORATORY  
(The "Institute" or "JPL")  
4800 OAK GROVE DRIVE  
PASADENA, CALIFORNIA 91109-8099**

**AND**

**{ SUBCONTRACTOR'S NAME AND ADDRESS HERE }**

THIS CONTRACT FOR

**JUPITER ICY MOONS ORBITER  
RADIATION-HARDENED MEMORY DEVELOPMENT  
START UP READ ONLY MEMORY (SUROM)**

IS A

SUBCONTRACT UNDER JPL's NASA PRIME CONTRACT

TASK ORDER NO. 710741

| Version | Date    |
|---------|---------|
| Final   | 1/27/04 |

A DO - C9 Rating is assigned to this Subcontract under DMS Regulation 1

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The following documents are incorporated into and made a material part of this Subcontract.

GENERAL PROVISIONS: Cost-Reimbursement with Commercial Organizations Contract R 8/03, with Incorporated Exhibits.

- Management of Government Property in the Possession of Contractors, Form JPL 0968 R 1/99
- Release of Information, Form JPL 1737 R 9/99
- Affiliate Access Report, Form JPL 1943 R 2/00
- Notification to Prospective Contractors of JPL's Ethics Policies and Anti-Kickback Hotline, Form JPL 2385 R 7/91
- Certifications, Form JPL 2892 R 8/01
- Asbestos Notification, Form JPL 2895 R 9/98
- Notice of Potential Tax Withholding R 7/03

ADDITIONAL GENERAL PROVISIONS (AGPs)

Cost Accounting Standards and Administration of Cost Accounting Standards R 4/99 (REGULAR COVERAGE)

OR

Disclosure and Consistency of Cost Accounting Practices, and Administration of Cost Accounting Standards R 4/99 (MODIFIED COVERAGE)

New Technology R 8/01 (LARGE BUSINESS)

OR

Patent Rights - Retention By The Contractor (Short Form) R 4/99 (SMALL BUSINESS)

Safety And Health R 4/00

Security Requirements for Unclassified Automated Information Resources and Access to JPL's Controlled Facilities R 12/01

PREAMBLE

This Subcontract, entered into on \_\_\_\_\_ by and between the CALIFORNIA INSTITUTE OF TECHNOLOGY (hereinafter called the "Institute" or "JPL"), a corporation organized and existing under the laws of the State of California, and **Name of Subcontractor** (hereinafter called the "Subcontractor"), a corporation organized and existing under the laws of the State of **State of Subcontractors Incorporation** and constituting a subcontract under prime contract with NASA;

WITNESSETH THAT:

The Subcontractor agrees to furnish and deliver the supplies and perform the services set forth in this Subcontract for the consideration stated herein.

## SCHEDULE

## ARTICLE 1. STATEMENT OF WORK AND DELIVERY INSTRUCTIONS

|  | <u>On or Before</u>                 |
|--|-------------------------------------|
| 1.0 The Subcontractor shall provide all resources necessary to adapt an existing component design or design, develop, test and deliver radiation-hardened start-up read-only memory (SUROM) components to provide start-up instructions for a microprocessor based avionics computer in accordance with Exhibits I, II, and III. |                                     |
| 1.1 Hardware.  |                                     |
| 1.1.1 Adapt an existing component design or design, fabricate and assemble SUROM components each with a minimum 1Mb (128kb X 8) memory, that will operate in accordance with Exhibit III "Start Up Read Only Mem (SUROM) Non-Volatile Memory Functional Requirements".   |                                     |
| 1.1.2 Test SUROM components in accordance with the requirements in Exhibit III.  |                                     |
| 1.1.3 In addition to the components tested per 1.1.2 above, deliver twenty-five (25) SUROM functionally tested components for JPL evaluation.  | Start of Contract plus<br>14 months |
| 1.1.4 In addition to the components tested per 1.1.2 above, deliver five (5) SUROM components which have received Destructive Physical Analysis packaged to illustrate findings.   | Start of Contract plus<br>14 months |
| 1.1.5 In addition to the components tested per 1.1.2 above, deliver fifteen (15) SUROM components packaged without lids. Intent is to permit potential users to view the product. Non-functional/ test components may be used for this purpose.  | Start of Contract plus<br>14 months |
| 1.1.6 Deliver one (1) Component Test Fixture or component interface card (Contractor configuration or 3U PCI). This fixture or card shall also allow testing of flight quality components to be developed and delivered under Phase 2.   | Start of Contract plus<br>14 months |
| 1.2 Product Assurance Activities.<br>The contractor shall provide, upon JPL request, access to Contractor fabrication, assembly and test locations and permit JPL Quality Assurance or designated representatives to perform surveillance and in-process inspection activities therein.  |                                     |

- 1.3 Project Management.  
Establish a management organization to support the requirements of this contract. Assign a Program Manager for the duration of this contract. The Program Manager shall be the individual responsible for all related Contractor effort and shall have the authority commensurate with that responsibility.
- 1.3.1 Conduct the following reviews at the Contractor's facility in accordance with the requirements identified in Exhibit II "Contract Plans and Deliverable Documentation" - Program Status Reviews and Reports.
- |         |   |                                    |
|---------|---|------------------------------------|
| 1.3.1.1 | Kickoff meeting in accordance with Exhibit II following contract award hosted by the Contractor with JPL (includes Phase 1 planning, architecture review, specification review, development tasking, data and deliverables review, program plan scope review and problem resolution). | Start of Contract plus 10 days     |
| 1.3.1.2 | Monthly Management Reviews.   | Start of Contract, one per month   |
| 1.3.1.3 | Teleconferences   | Start of Contract weekly           |
| 1.3.1.4 | Technical Interchange Meetings.   | One/quarter at Contractor facility |
| 1.3.1.5 | Preliminary Design Review.  | Start of Contract plus 9 months    |
| 1.3.1.6 | Phase 2 Planning Review.  | Start of Contract plus 18 months   |
- 1.3.2 Deliver Phase 1 Implementation Plan per Exhibit II DRD MA001. This Implementation Plan will be shared with all spacecraft contractors.
- Start of Contract plus 10 days
- 1.3.3 Technical Contract Direction.  
Accept in-scope direction provided by the JPL Contract Technical Manager (Identified by name in the contract) delivered through the JPL Contract Negotiator. A JPL technical direction memorandum (TDM) form or equivalent shall be utilized to document this technical direction. The contractor shall accept in-scope direction or reject out-of-scope direction in writing within three working days of receipt of the TDM.

- 1.3.4 Support to JPL Program Management.  
The contractor shall, at JPL request, travel to a designated JPL facility to participate in SUROM development-related activities. This support is estimated at one trip quarterly for one day of meetings.
- 1.3.5 Submit to the JIMO Project for review and approval prior to release all Contractor documents, e.g., reports, correspondence, papers, press releases, websites, etc., that mention or discuss the conduct or results of this contracted effort or the Project. These documents shall be submitted to the attention of the JPL Contract Negotiator.

- 1.4 Phase II (Planning)  
The Contractor shall prepare and deliver a Phase II Implementation Plan in accordance with Exhibit II DRD MA002 Start of Contract plus  
17 months
- 1.5 Final Report  
The Contractor shall prepare and deliver a final report in accordance with Exhibit II DRD MA008, summarizing activities that occurred after submission of the Phase II Implementation Plan and enabling close out of any remaining action items. Start of Contract plus  
19 months
- 1.6 Exhibits.  
The following Exhibits are hereby incorporated into and made a material part of this Contract.
  - 1.6.1 Exhibit I, Applicable Documents, Dated 1-27-04
  - 1.6.2 Exhibit II, Contract Plans and Deliverable Documentation, Dated 1-27-04
  - 1.6.3 Exhibit III Start Up Read Only Memory (SUROM) Non-Volatile Memory Functional Requirements, JPL D 27604 Dated 1-27-04
- 1.7 The Contractor shall bring any perceived conflict or inconsistency between or within any of the Exhibits to the attention of the JPL.

2.0 Delivery Requirements

- 2.1 Except as otherwise provided in this Subcontract, the point of inspection, acceptance and delivery of all supplies deliverable under this Subcontract shall be the Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena, California 91109. All such supplies shall be packaged, packed, boxed, or crated in such a manner to ensure safe delivery and shall be shipped prepaid and at the Subcontractor's expense to the point of delivery.
- 2.2 Time is of the essence in the performance of this Subcontract

**If New Technology is Applicable \*\*DELETE IF NOT\*\***

- 2.3 The Subcontractor shall furnish the cognizant JPL Negotiator with the annual and final reports of reportable items described in the Article entitled "New Technology." A copy of transmittal letters for those reports shall also be sent to the Intellectual Property Office (IPO). Interim report every 12 months commencing on Date of Subcontract-Final Report within three months of completion of work

**If Patent Rights is Applicable \*\*DELETE IF NOT\*\***

- 2.4 The Subcontractor shall provide the cognizant JPL Negotiator with the annual and final reports of subject inventions described in the Article entitled "Patent Rights - Retention by the Contractor (Short Form)." A copy of transmittal letters shall be sent to the Intellectual Property Office (IPO). Interim report every 12 months commencing on Date of Subcontract-Final Report prior to Subcontract completion

**If the Subcontractor may need Government-Owned Equipment to be furnished or acquired\*\*DELETE IF NOT\*\***

- 2.5 Form JPL 1419, "DOD Industrial Plant Equipment Requisition" At least 30 days prior to need for acquiring or fabricating item
- 2.6 If property is either furnished or acquired, the requirements of "Management of Government Property in the Possession of Contractors" Form JPL 0968 are applicable and NASA Form 1018 "NASA Property in the Custody of Contractors" (or equivalent) shall be submitted in accordance with the following schedule:
  - 2.6.1 Quarterly Submission commencing on date of Subcontract through completion
    - Reporting Period
    - Oct 1 thru Dec 31
    - Jan 1 thru Mar 31
    - Apr 1 thru June 30
    - Jul 1 thru Sept 30
 Three (3) Business days after reporting period
  - 2.6.2 Annual Submission commencing on date of Subcontract through completion
    - Reporting Period
    - Oct 1 thru Sept 30
 Annually, Fifteen (15) Business days after reporting period
  - 2.6.3 Annual Verification of Government-Owned/Subcontractor-Held Property Annually, 30 days after receipt of list from JPL thru Subcontract Completion
- 2.7 Form SF 294, "Subcontracting Report for Individual Contracts", SF 294 from date of Subcontract thru March 31 and September 30 and semiannually thereafter through Subcontract completion
- 2.8 Form SF 295, "Summary Subcontract Report" SF 295 from date of Subcontract thru September 30th and annually thereafter through Subcontract completion

3.0 Period of Performance

- 3.1 The period of performance shall extend through 19 months after date of contract.

4.0 JPL will:

- 4.1 Approve or disapprove documents in accordance with Exhibit II submitted by the Contractor within fifteen (15) working days of receipt at JPL except as specified otherwise in this contract.
- 4.2 Provide a JPL Mission Assurance representative to witness inspections and tests as JPL determines necessary.

ARTICLE 2. ALLOWABLE COSTS, FIXED FEE AND PAYMENT.

1.0 Estimated Cost and Fixed Fee.

|                 |        |
|-----------------|--------|
| Estimated Cost: | \$ TBD |
| Fixed Fee:      | \$ TBD |
| Total:          | \$ TBD |

Subject to any equitable adjustment which is otherwise provided for under the provisions of this Subcontract, the fixed fee stated above shall remain constant for the performance of the work under this Subcontract. There shall be no adjustment in the amount of fixed fee or any claim for increased fixed fee because of errors or omissions made in computing the estimated cost or the fact that the actual cost varies from the estimated cost.

The total amount allotted to this Subcontract is \$

2.0 Precontract Costs. There shall be no allowance for costs incurred prior to the date of this Subcontract. If this Definitive Subcontract has been preceded by a Letter Subcontract, the phrase "date of this Subcontract" as used in this paragraph 2.0 shall mean the effective date of the Letter Subcontract.

3.0 Payment of Fixed Fee. The fixed fee payable under this Subcontract shall be paid to the Subcontractor in monthly installments based upon the percentage of work completed as estimated by the Subcontractor and approved by JPL; subject, however, to the provisions of the "Allowable Cost and Payment" Article of this Subcontract.

4.0 Invoices. Invoices shall be submitted, in triplicate, to JPL Subcontract Payment Group, 4800 Oak Grove Drive, Pasadena, California 91109.

5.0 Billing Requirements:

All invoices submitted to JPL for the reimbursement of costs incurred for authorized work must conform to these requirements. All invoices submitted under this Subcontract should be COMMERCIAL type invoices. Billings prepared on a Public Voucher SF # 1034 form are not acceptable for payment purposes. The invoices should be numbered in a separate series for proper reference and must contain the following information:

- o Subcontractor's name and address
- o JPL Subcontract number
- o Total Subcontract value
- o Total allotted cost
- o Total allotted fee
- o Total allotted cost and fee
- o Invoice date
- o Invoice number
- o Billing Period of performance
- o Current and cumulative cost column
- o Major cost elements
- o Fixed fee earned and fee reserve/withhold
- o Indirect billing rates used, pool, and bases
- o Certification of invoice by authorized Subcontractor official, including printed name and telephone number

The Subcontractor must have an adequate accounting and billing system to capture the actual costs at the authorized level as stated in the Subcontract. The Subcontractor is responsible for tracking costs and ensuring they do not exceed the authorized amount allotted for the Subcontract and, if applicable, the Contract Work Order (CWO).

The Subcontractor is responsible for preparing and submitting invoices for reimbursement according to the terms of the Subcontract.

Invoices shall be submitted, in triplicate, to JPL Subcontract Payment Group, M/S 601-208, 4800 Oak Grove Drive, Pasadena, California 91109.

Each invoice shall include separate columns for current costs and fee, and cumulative costs and fee at both the Subcontract and, if applicable, the CWO summary level. Cumulative costs are necessary to ensure that the amounts billed do not exceed the total estimated ceiling costs of the Subcontract and/or the current Subcontract maximum authorized funding levels.

Each invoice shall include current and cumulative amounts billed by major cost elements, Subcontract reserves, and adjusted amounts claimed as of the date of billings.

**Detailed billing instructions and samples that will ensure the correct processing of your invoices can be found at the following link:** [http://acquisition.jpl.nasa.gov/pdf/CPFF\\_Billing.pdf](http://acquisition.jpl.nasa.gov/pdf/CPFF_Billing.pdf).

When submitting an invoice for the current billing period, include both costs and fixed fee on the same invoice. A backup detail of the fixed fee earned calculation shall be submitted along with the monthly invoice to demonstrate the percentage of completion to date by the Subcontractor.

A copy of the approved indirect billing rates applicable to this Subcontract from the Subcontractor's cognizant government auditor must be submitted with the first invoice and whenever there is a rate change. If no cognizant government auditor is assigned, submit the proposed rates to the JPL negotiator and JPL Subcontractor Audit & Compliance Group, Mail Stop 601-207. When the Subcontractor adjusts the billing rates to reflect actual year-end allowable costs, the adjusted rates shall be submitted on a separate invoice. The Subcontractor must provide notice of the updated billing rate to the JPL Supplier Payment Group. Upon submission, the invoice will be reviewed for adequacy. Any invoice found not to be in compliance with this request will be deemed inadequate and will be returned for correction and resubmission. In accordance with paragraph (a)(2) of the ALLOWABLE COST AND PAYMENT General Provision, JPL may request additional documentation to support claimed costs.

Final annual incurred indirect cost rate proposals shall be submitted within 6 months after expiration of the Subcontractor's fiscal year, as required by the ALLOWABLE COST AND PAYMENT General Provision.

The completion invoice shall be marked "Final". The Subcontractor should not prepare or submit the final invoice until an audit has been completed of the Subcontractor's fiscal years during which costs under this Subcontract have been incurred. A separate column shall be prepared for each of the Subcontractor's fiscal years showing the major cost elements. Any direct costs questioned as a result of the audit of costs shall be excluded from the applicable Subcontractor's fiscal year billings. Fringe, overhead, and G&A shall be computed using the final rates and listed by Subcontractor's

fiscal year. Any amount billed in excess of the Subcontract value will be identified and subtracted from the total amount billed.

5.1 As assurance that a responsible official within your organization has reviewed your invoices, each invoice shall carry the following certification:

“I hereby certify that the above bill is correct and just, that payment therefore has not been received, and that the bill is presented with the knowledge that the amount paid hereunder will become the basis of a claim against the United States Government.”

\_\_\_\_\_  
Authorized Signature

*(Typed name of official)*

Telephone number:

6.0 Allowable Costs. For the purpose of determining the amounts payable to the Subcontractor under this Subcontract, the allowability of costs shall be determined in accordance with the General Provision (GP) of this Subcontract entitled "Allowable Cost and Payment;" provided, however, that in determining the allowability of costs, the advance understandings, if any, on particular items of cost set forth below shall be given effect. In the event of any inconsistency between such advance understandings and the cost principles referred to in the "Allowable Cost and Payment" GP referenced above, the cost principles shall prevail.

6.1 Direct Costs: No Advance Understanding

6.2 Indirect Costs: No Advance Understanding

## ARTICLE 3. SPECIAL PROVISIONS

1.0 Data Removal from Computers.

- 1.1 The Contractor shall completely overwrite or degauss the media containing all data (which can include sensitive, Privacy Act, proprietary, and mission critical data) from hard drives and other computer storage devices and remove licensed software from Government-owned computers before such computers leave the control of the Contractor organization by transfer or disposal. JPL data shall also be removed from Contractor-owned computers when the computer will be no longer used for work related to the NASA Jupiter Icy Moons Orbiter (JIMO) mission. The Contractor shall archive all data required to be retained, pursuant to the "Rights in Data - General" Article. Guidance on what constitutes mission-critical data and sensitive information (such as business and restricted technology information and scientific, engineering, and research information) is contained in NASA Procedure and Guidelines for Security of Information Technology (NPG) 2810, available on the worldwide web or from the JPL Negotiator. Proprietary data consists of trade secrets and other commercial or financial information confidential to the individual owner or organization. Proprietary data is normally labeled as such. Trade secrets or commercial or financial information that has been released to the public or is otherwise in the possession of persons other than the individual owner or organization is in the public domain and may no longer be entitled to proprietary protection.
- 1.2 The Contractor shall submit to JPL a written certification that media containing all JPL data has been overwritten or degaussed from computers when returned to JPL or disposed of.

2.0 Assignment, Novation and Transfer

- 2.1 This subcontract may be assigned, novated, or transferred to a successor-in-interest, a successor contractor to operate the Jet Propulsion Laboratory, or the Government.

3.0 Technical Discussions During Subcontract Performance

- 3.1 The subcontractor shall ensure that JPL will be able to conduct detailed bilateral technical discussions with subcontractor personnel and lower tier subcontract personnel based on JPL's expertise as set forth in this subcontract. The subcontractor shall ensure that satisfying this requirement regardless of foreign or domestic participation in the work does not lead to any delay in meeting the delivery schedule.

ARTICLE 4. OPTIONS

1.0 Phase 2 Option

1.1 The Contractor hereby grants to JPL the option to add the task of design, fabrication, and delivery of flight qualifiable SUROMs per the statement of work in paragraph 1.3 below. The Contractor further grants that JPL may, at its discretion, modify the contract fee structure. Preliminary written notice of JPL’s intent to exercise this option will be provided sixty (60) days prior to the expiration date of the period of performance specified herein. Such written notice will not be deemed to commit JPL to exercise the option.

1.1.1 A bilateral agreement for the option shall be negotiated and executed prior to the expiration date of the period of performance specified in Article 1 of this Contract. In the event that a bilateral agreement has not been executed prior to the expiration date specified in Article 1 of this Contract, JPL retains the right to unilaterally extend the period of performance prior to the expiration date specified in Article 1 of this Contract by written notice to the Contractor. The unilateral extension shall not exceed a three (3) month period.

1.2 Exercise of the option is contingent upon:

1.2.1 The availability of funds at JPL approved and released by the Government.

1.2.2 The viability of the Phase 2 Implementation Plan (MA 002) submitted in Phase 1.

1.3 Option Statement of Work

On or Before

(1.3.1) Adapt the Phase 1 design and fabricate and assemble SUROM components each with a minimum 1Mb (128kb x 8) memory that shall operate in accordance with Exhibit III

(1.3.2) Test SUROM components from paragraph 1.3.1 above in accordance with the requirements in Exhibit III.

(1.3.3) In addition to the components tested per 1.3.2 above, deliver twenty-five (25) functionally tested SUROM components for JPL evaluation.

Exercise of Option plus  
14 months

(1.3.4) In addition to the components tested per 1.3.2 above, deliver five (5) SUROM components which have received Destructive Physical Analysis packaged to illustrate findings.

Exercise of Option plus  
14 months

(1.3.5) In addition to the components tested per 1.3.2 above, deliver fifteen (15) SUROM components packaged without lids. Intent is to permit potential users to view the product. Non-functional/ test components may be used for this purpose.

Exercise of Option plus  
14 months

(1.3.6) Permit and support a JPL pre-cap inspection of the initial quantities of the radiation-hardened SUROM components. Notify the JPL Quality Assurance Representative at least five (5) working days

in advance of hardware inspection opportunities.

(1.3.7) Conduct reliability assurance analyses in accordance with JIMO reliability analysis document JPL 982-00037

(1.3.7.1) Phase II kickoff meeting, hosted by the Contractor, in accordance with Exhibit II (includes Phase II planning, architecture review, specification review, development tasking, data and deliverables review, program plan scope review and problem resolution).

Exercise of Option plus 1 month

(1.3.7.2) Critical Design Review.

Exercise of Option plus 17 months

(1.3.8)Final Report  
The Contractor shall prepare and deliver a final report in accordance with Exhibit II DRD MA008, summarizing activities that occurred after CDR enabling close out of any remaining action items.

Exercise of Option plus 18 months

IN WITNESS WHEREOF, the parties hereto have executed this Subcontract as of the day and year first above written.

CALIFORNIA INSTITUTE OF TECHNOLOGY

CALIFORNIA INSTITUTE OF TECHNOLOGY

By \_\_\_\_\_  
{ TYPED NAME OF JPL SIGNATORY HERE }  
\_\_\_\_\_  
(Title)

{ TYPED NAME OF SUBCONTRACTOR HERE }

By \_\_\_\_\_  
(Signature)  
\_\_\_\_\_  
(Typed Name)  
\_\_\_\_\_  
(Title)

Instructions to Subcontractor: Do not insert date on Preamble page.