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2. CONTRACT (HR0011-06-C-00	(Proc. Inst. Ident.) NO.	3. EFFECTIVE DA	TE	r 2006		4. REQUIS	ITION/PURCHASE REQUEST/		
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items or perform all the sheets for the considerat contract shall be subject (b) the solicitation, if any	services set forth or otherwise ident tion stated here in. The rights and ob- ito and governed by the following d y, and (c) such provisions, represent	ligations of the parties to this ocuments: (a) this award/cor	nuation ntract,	above, the con	is hereby accepted tract which consists	as to the items list of the following o	you which additions or changes are set forth is ed above and on any continuation sheets. This locuments: (a) the Government's solicitation	s award consum rr	
(Attachments are listed	porated by reference herein. herein.)			(D) this	award/contract, N	to runner contract	rual document is necessary.		
19A. NAME AN	D TITLE OF SIGNER (1	(ype or print)		20A. (b)(6)	NAME AND	TITLEOFO	CONTRACTING OFFICER		
		T			703-696-2434		EMAIL (b)(6)	In a m	
19B. NAME OF	CONTRACTOR	19C. DAT	E SIGNED	20B.	(b)(6)	TERON	TEDICA	08-Mar-	E SIGNED 2006
BY				BY_					
(Signature	re of person authorized to sign)					(Signature of	Contracting Officer)		
NSN 7540-01-152-8069			26 GPO 198:	-107 5 O - 469	-794			ANDARD FORM escribed by GSA	26 (REV. 4-85)

Section B - Supplies or Services and Prices

TOTAL EST.
COST PLUS
FIXED FIX

Phase I- The Contractor shall complete first generation system modeling and performance optimization with a system design and modeling effort, followed by a subsequent first generation component development effort (MOPA laser, detectors, PLL's) in accordance with the Attachment (1)--Statement of Work.

ITEM NO 000101 Funding for CLIN 0001

AO No. Q407/46

ACRN AA \$575,770.00

Page 3 of 35

ITEM NO	SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	TOTAL EST. COST PLUS FIXED FEE
0002	Reports and Deliverables	\$0.00	\$0.00	\$0.00
	Phase I Reports and Deliverables- Deliverables/Reports will be provided in accordance with the Attachment (1) Statement of Work.			NSP

ITEM NO SUPPLIES/SERVICES

0003 Phase II- Option 1

Phase II- The Contractor shall complete second generation system modeling and performance optimization in accordance with the Attachment (1)--Statement of Work.

ESTIMATED FIXED COST PLUS
COST FEE FIXED FEE

(D)(4)

\$3,769,705.00

ITEM NO 000301

Funding for CLIN 0003

AMOUNT

ITEM NO	SUPPLIES/SERVICES	ESTIMATED COST	FIXED FEE	TOTAL EST. COST PLUS FIXED FEE
0004	Reports and Deliverables	\$0.00	\$0.00	\$0.00
	Phase II Reports and Deliverables- Deliverables/Reports will be provided in accordance with the Attachment (1) Statement of Work.			NSP

Section C - Descriptions and Specifications

CLAUSES INCORPORATED BY FULL TEXT

C-1 Scope of Work

- (a) The Contractor shall furnish the necessary personnel, materials, facilities and other services as may be required to perform Contract Line Item Number (CLINs) 0001 and 0002 in accordance with the Statement of Work, Attachment 1 hereto, and as specified in the Contractor's proposal entitled "Coherent Locking of Diode Laser Arrays to Achieve High Power, Diffraction Limited Performance", dated April 23, 2005, including cost update dated January 31, 2006, copies of which are in possession of both parties.
- (b) The Contractor shall furnish the necessary personnel, materials, facilities and other services as may be required to perform Option Item 1, as stated in CLINs 0003 and 0004 respectively, if and to the extent exercised, in accordance with the Statement of Work, Attachment 1 hereto, and as specified in the Contractor's Proposal entitled "Coherent Locking of Diode Laser Arrays to Achieve High Power, Diffraction Limited Performance", dated April 23, 2005, including cost update dated January 31, 2006, copies of which are in possession of both parties.
- (c) In the event of an inconsistency between the provisions of this contract and the Contractor's proposal, the inconsistency shall be resolved by giving precedence in the following order: (1) the contract, (2) the attachments to the contract, and then (3) the Contractor's proposal.

(end of clause)

C-2 Reports and Other Deliverables

(a) The Contractor shall submit the following reports and other deliverables in accordance with the delivery schedule set forth in Section F. Reports and other deliverables shall be submitted in writing, as defined in FAR 2.101, or as specified below:

(1) R&D STATUS REPORT

This brief narrative, not to exceed five pages in length, shall contain the following:

- (i) For first report only; the date work actually started.
- (ii) Description of progress during the reporting period, supported by reasons for any change in approach reported previously
- (iii) Planned activities and milestones for the next reporting period.
- (iv) Description of any major items of experimental or special equipment purchased or constructed during the reporting period.
- (v) Notification of any changes in key personnel associated with the contract during the reporting period.
- (vi) Summary of substantive information derived from noteworthy trips, meetings, and special conferences held in connection with the contract during the reporting period.
- (vii) Summary of all problems or areas of concern.
- (viii) Related accomplishments since last report.
- (ix) Fiscal status, to include reporting of summary level financial data in the following format: (next page)

R&D STATUS REPORT PROGRAM FINANCIAL STATUS

Work Breakdown		Cur	Cumulative to Date At Completion			Completion
Structure or Task Element	Planned Expend	Actual Expend	% Budget Compl	At Compl	Latest Revised Estimate	Remarks
Subtotal:				··		
Management Reserve: Or Unallocated Resources:						
TOTAL:						_
Note: Budget a	at completion	changes only with	n the amount of ar	ny scope cha	anges. (Not a	affected by underrun or
Based on currer	ntly authorized	work:				
Is curr	ent funding suf	ficient for the cur	rent fiscal year (F)	()? (Explain	in narrative i	f "NO")
	YES NO					
What i	s the next FY	funding requireme	ent at current antic	ipated levels	5?	
	\$					
Have y	ou included in	the report narrati	ive any explanation	of the abov	e data and are	they cross-referenced?
	YES NO					

(2) ADDITIONAL MISC. DELIVERABLES

The Contractor shall deliver those items listed in the Contract Attachment (1)- Statement of Work under the paragrah entitled "Deliverables", as applicable. The contractor shall adhere to the schedule, as applicable, in the Statement of Work.

(3) SPECIAL TECHNICAL REPORT

These reports, prepared in accordance with the Contractor's format, shall document the results of a significant task, test, event or symposium.

(4) DD FORM 882, REPORT OF INVENTIONS AND SUBCONTRACTS

These reports shall be submitted in accordance with FAR 52.227-11 Patent Rights – Retention by the Contractor (Short Form) (JAN 1997)

(5) FINAL REPORT

This report, prepared in accordance with DFARS 252.235-7011, shall document the results of the complete effort and should be delivered at the completion of the contract. If the Government chooses to exercise the options under this contract, the due date for the final report is extended accordingly. Title pages shall include a disclaimer worded substantially as follows:

"The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the official policies, either expressly or implied, of the Defense Advanced Research Projects Agency or the U.S. Government."

The Final Technical Report summary shall include:

Task Objectives
Technical Problems
General Methodology (i.e., literature review, laboratory experiments, surveys, etc.)
Technical Results
Important Findings and Conclusions
Significant Hardware Development
Special Comments
Implications for Further Research
Standard Form 298, September 1988

- (b) Reports delivered by the Contractor in the performance of the contract shall be considered "Technical Data" as defined in Section I contract clauses entitled "Rights in Technical Data Noncommercial Items" and "Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation."
- (c) Bulky Reports shall be mailed by other than first-class mail unless the urgency of submission requires use of first-class mail. In this situation, one copy shall be mailed first-class and the remaining copies forwarded by less than first-class.
- (d) All papers and articles published as a result of DARPA sponsored research shall include a statement reflecting the sponsorship. In addition, a bibliography of the titles and authors of all such papers are to be included in the Final Technical Report
 - (1) The cover or title page of each of the above reports or publications prepared, will have the following citation:

Sponsored by Defense Advanced Research Projects Agency Microsystems Technology Office (MTO) Program: ADHELS ARPA Order No. Q407/46, Program Code: 5G10 Issued by DARPA/CMO under Contract No. HR0011-06-C-0029

(2) The title page shall include a disclaimer worded substantially as follows:

"The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the official policies, either expressly or implied, of the Defense Advanced Research Projects Agency or the U.S. Government."

(3) All technical reports must (1) be prepared in accordance with American National Standards Institute (ANSI) Standard Z39.18; (2) include a Standard Form 298, August 1998; and (3) be marked with an appropriate Distribution Statement.

(end of clause)

Section D - Packaging and Marking

CLAUSES INCORPORATED BY FULL TEXT

D-1 Packaging and Marking

(a) All items shall be preserved, packaged, packed and marked in accordance with best commercial practices to meet the packing requirements of the carrier, and to ensure safe delivery at destination.(end of clause) Section E - Inspection and Acceptance

INSPECTION AND ACCEPTANCE TERMS

Supplies/services will be inspected/accepted destination by the Contracting Officer's Representative (COR) identified at Section G herein.

CLAUSES INCORPORATE UP BY REFERENCE

252,246-7000 Material Inspection And Receiving Report

MAR 2003

Section F - Deliveries or Performance

DELIVERY INFORMATION

CLIN	DELIVERY DATE	QUANTITY	SHIP TO ADDRESS	UIC
0001	18 mths. ADC		N/A FOB: Destination	
000101	18 mths. ADC		N/A FOB: Destination	
0002	N/A	N/A	N/A	N/A
0003	N/A	N/A	N/A	N/A
000301	36 mths. ADC		N/A FOB: Destination	
0004	N/A	N/A	N/A	N/A

CLAUSES INCORPORATED BY REFERENCE

52.247-34 F.O.B. Destination

NOV 1991

CLAUSES INCORPORATED BY FULL TEXT

F-1 Term of Contract

- (a) The term of the contract commences on the effective date of the contract and continues through eighteen (18) months thereafter.
- (b) The period of performance for Option 1, as set forth in CLINs 0003 and 0004, if and to the extent exercised, shall extend the base contract by an additional eighteen (18) months. (end of clause)

F-2 Reports and Other Deliverables

(a) Delivery of all reports and other deliverables shall be made to the addressee specified in F-3 entitled "Report Distribution" in accordance with the following:

Phase I

Item No.	Description	Due Date (on or before)
0001	Interim Reports	Quaterly commencing 3 months ADC
0001	Special Test Report	As Required
0001	Phase I Table Top Demonstration.	17 Months ADC
0001 final	DD Form 882, Report of Inventions	Interim reports submitted annually;
contract.	and Subcontracts	report submitted upon expiration of
0001	Final Report	Upon expiration of contract Phase I (see Article F-1)

Phase II (Option I if and to the extent exercised)

Item No.	Description	Due Date (on or before)
0003	Interim Reports	Quaterly
0003	Special Test Report	As Required
0003	Phase II Table Top Demonstration	35 Months ADC
0003 final	DD Form 882, Report of Inventions	Interim reports submitted annually;
contract.	and Subcontracts	report submitted upon expiration of
0003	Final Report	Upon expiration of contract Phase II(see Article F-1)

(end of clause)

F-3 Report Distribution

(a) DARPA/Microsystems Technology Office (MTO)

Attn: (6)(6)

3701 North Fairfax Drive
Arlington, VA 22203-1714
E-mail: (6)(6)
@ darpa.mil)
(one copy each report)

(b) DARPA/Microsystems Technology Office (MTO)
 Attn: ADPM
 3701 North Fairfax Drive
 Arlington, VA 22203-1714
 (one copy each report)

(c) DARPA/Library
3701 North Fairfax Drive
Arlington, VA 22203-1714
Email: library@darpa.mil
(one copy of the Final Technical Report)

(d) Defense Technical Information Center

(1) Email: TR@dtic.mil (one electronic copy of the Final Technical Report, if unclassified)

OR

(2) Attn: DTIC-BCS 8725 John J. Kingman Road, Suite 0944 Fort Belvoir, VA 22060-0944 (two hard copies of the Final Technical Report if unclassified)

(e) DARPA/CMO Attn: (b)(6) 3701 North Fairfax Drive

3701 North Fairfax Drive Arlington, VA 22203-1714 (one copy each report)

(e) AFDI AELA Attn:

Kirtland AFB, NM 87117-5776

(one copy each report, 0001AA and 0003AA)
(end of clause)

F-4 Notice Regarding Late Delivery

(a) In the event the Contractor anticipates difficulty in complying with the contract delivery schedule, the Contractor shall immediately notify the Contracting Officer in writing, giving pertinent details, including the date by which it expects to make delivery; PROVIDED, however, that this date shall be informational only in character and the receipt thereof shall not be construed as a waiver by the Government of any contract delivery schedule, or any rights or remedies provided by law or under this contract. (end of clause) Section G - Contract Administration Data

ACCOUNTING AND APPROPRIATION DATA

CLAUSES INCORPORATED BY FULL TEXT

G-1	Procuring	Office	Representativ	e
-----	-----------	--------	---------------	---

(a) The Procuring Office Representative is DARPA/CMO, 3701 North Fairfax Drive, Arlington, VA 22203-1714, telephone: 703-696-2434, e-mail: Office Representative is DARPA/CMO, 3701 North Fairfax Drive, Arlington, VA 22203-1714, telephone: 703-696-2434, e-mail: Office Representative is DARPA/CMO, 3701 North Fairfax Drive, Arlington, VA 22203-1714, telephone: 703-696-2434, e-mail:

G-2 Electronic Submission of Payment Requests

- (a) A cost voucher identified by contract number shall be submitted for payment directly via the Internet to Wide Area WorkFlow Receipt and Acceptance at https://wawf.eb.mil
- (b) Final cost vouchers shall be submitted for review and approval to DCAA:

DCAA San Fernando Valley Branch Office 6320 Van Nuys Boulevard, Federal Building, Room 2001 Van Nuys, CA 91401-2781 Phone: (818) 756-4330 E-mail: dcaa-fao4231@dcaa.mil

(end of clause)

G-3 Delegation of Authority for Contract Administration

 (a) DCMA Los Angeles, is hereby designated as the Contracting Officer's authorized representative for administering this contract in accordance with current directives.
 (end of clause)

G-4 Contracting Officer's Representative (COR)

(a) Performance of work under this contract shall be subject to the technical direction of
(a) Performance of work under this contract shall be subject to the technical direction of (b)(6) AFRL/DELO Kirtland AFB, NM 87117-5776, telephone (505) 846-1633, e-mail: -
@kirtland.af.mil . Such technical direction includes those instructions to the
Contractor necessary to accomplish the Statement of Work. The COR is not otherwise authorized to
make any representations or commitments of any kind on behalf of the Contracting Officer or the

Government. The COR does not have the authority to alter the Contractor's obligations or to change the specifications of the contract.

- (b) Technical direction shall not include any direction which:
 - (1) Constitutes additional work outside the scope of work;
 - (2) Constitutes a change as defined in Section I contract clause entitled "Changes";
 - (3) In any manner causes an increase or decrease in the total estimated cost or the time required for contract performance; or
- (4) Changes any of the stated terms, conditions, or specifications of the contract. (end of clause)
- G-5 Payment Instructions for Multiple Accounting Classification Citations
- (a) Payments under contract line items funded by multiple accounting classification citations shall be made from the earliest available fiscal year funding sources. The earliest assigned ACRN must be fully disbursed before making disbursements from a succeeding ACRN.
 (end of clause)

G-6 Incremental Funding

(a) This contract shall be subject to incremental funding with \$575,770 presently made available for performance under this contract. It is estimated that the funds presently available are sufficient to permit the Contractor's performance through April 16, 2006. Except in accordance with the Section I clause FAR 52.232-22, "Limitation of Funds," no legal liability of the part of the Government for payment of any money in excess of \$575,770 shall arise unless and until additional funds are made available by the Contracting Officer through a modification to this contract.
(end of clause)

G-7 Payment of Cost and Fee

- (a) As consideration for the proper performance of work required under this contract, the Contractor shall be paid as follows:
 - (1) Costs, as provided for under Section I contract clause titled "Allowable Cost and Payment" not to exceed the amount set forth as "Total Estimated Cost" in Section B, and subject further to those Section I clauses entitled "Limitation of Cost" or "Limitation of Funds".
 - (2) A fixed fee in the amount set forth as "Fixed Fee" in Section B, in accordance with the Section I contract clause entitled "Fixed Fee". The Contractor may bill on each invoice the amount of the fixed fee bearing the same percentage to the total fixed fee as the amount of cost billed bears to the total estimated cost.

(end of clause)

Section H - Special Contract Requirements

CLAUSES INCORPORATED BY FULL TEXT

H-1 Contracting Officer

(a) Notwithstanding any other provision of this contract, the Contracting Officer is the only individual authorized to redirect the effort or in any way amend or modify any of the terms of this contract. If, as a result of technical discussions, it is desirable to alter contract obligations or statement of work, a modification must be issued in writing and signed by the Contracting Officer.
(end of clause)

H-2 Type of Contract

(a) This is a Cost-Plus-Fixed-Fee completion contract. (end of clause)

H-3 Public Release or Dissemination of Information

- (a) There shall be no dissemination or publication, except within and between the Contractor and any subcontractors, of information developed under this contract or contained in the reports to be furnished pursuant to this contract without prior written approval of the COR. All technical reports will be given proper review by appropriate authority to determine which Distribution Statement is to be applied prior to the initial distribution of these reports by the Contractor. Papers resulting from unclassified contracted fundamental research are exempt from prepublication controls and this review requirement, pursuant to DoD Instruction 5230.27 dated October 6, 1987.
- (b) When submitting material for clearance for open publication, the Contractor must furnish DARPA Technical Information Officer, 3701 North Fairfax Drive, Arlington VA 22203-1714, telephone (703) 526-4163 with five copies and allow four weeks for processing. Viewgraph presentations must be accompanied with a written text. Whenever a paper is to be presented at a meeting, the Contractor must indicate the exact dates of the meeting or the Contractor's date deadline for submitting the material.
 (end of clause)

H-4 Key Personnel

- (a) The Contractor shall notify the Contracting Officer prior to making any change in key personnel. Key personnel are defined as follows:
 - (1) Personnel identified in the proposal as key individuals to be assigned for participation in the performance of the contract;
 - (2) Personnel whose resumes were submitted with the proposal; or
 - (3) Individuals who are designated as key personnel by agreement of the Government and the Contractor during negotiations.
- (b) The Contractor must demonstrate that the qualifications of the prospective personnel are equal to or better than the qualifications of the personnel being replaced. Notwithstanding any of the foregoing provisions, key personnel shall be furnished unless the Contractor has demonstrated to the satisfaction of the COR that the

qualifications of the proposed substitute personnel are equal to or better than the qualifications of the personnel being replaced.

(end of clause)

H-5 Restrictions on Printing

(a) Unless otherwise authorized in writing by the Contracting Officer, reports, data, or other written material produced using funds provided by this contract and submitted hereunder shall be reproduced only by duplicating processes and shall not exceed 5,000 single page reports or a total of 25,000 pages of a multiple-page report. These restrictions do not preclude the writing, editing, and preparation of manuscript or reproducible copy of related illustrative materials if required as part of this contract, or incidental printing such as forms or materials necessary to be used by the Contractor to respond to the terms of the contract. (end of clause)

H-6 Contractor Representations and Certifications

 (a) The Contractor's Representations and Certifications dated 30 January 2006 are incorporated herein by reference.
 (end of clause)

H-7 Insurance Schedule

(a) The Contractor shall maintain the types of insurance listed in FAR 28.307-2 (a), (b) and (c), with the minimum amounts of liability indicated therein. The types of insurance coverage listed in paragraphs (d) and (e) shall also be maintained when applicable.

(end of clause)

H-8 Travel

- (a) Reimbursement for travel-related expenses shall be in accordance with the Contractor's approved travel policy. The Federal Travel Regulations, Joint Travel Regulations (JT R), and Standardized Regulations as stated in FAR 31.205-46 will be used as a guide in determining reasonableness of per diem costs. Costs for travel shall to allowable subject to the provisions of FAR 31.205-46.
- (b) In connection with direct charge to the contract of travel-related expenses, the Contractor shall hold travel to the minimum required to meet the objectives of the contract, and substantial deviations from the amount of travel agreed to during contract negotiation shall not be made without the authorization of the Contracting Officer.

When applicable, the Contractor shall notify the COR of proposed travel of an employee beyond that agreed to during negotiations.

- (c) Approval of the Contracting Officer shall be obtained in advance for attendance by personnel at training courses, seminars, and other meetings not directly related to contract performance if the costs for the courses, seminars, and other meetings are charged to the contract.
- (d) All foreign travel shall be authorized and approved in advance, in writing, by the Contracting Officer. Request for such travel must be submitted to the Contracting Officer at least forty-five (45) days in advance of traveler's anticipated departure date, and shall include traveler's itimerary of United States Flag Air Carriers.

(end of clause)

H-9 Metric System

- (a) The Defense Advanced Research Projects Agency (DARPA) will consider the use of the metric system in all of its activities consistent with operational, economical, technical and safety requirements.
- (b) The metric system will be considered for use in all new designs. When it is deemed not to be in the best interest of the DoD to provide metric design, justification shall be provided.
- (c) Physical and operational interfaces between metric items and U.S. customary items will be designed to assure that interchangeability and interoperability will not be affected.
- (d) Existing designs dimensioned in U.S. customary units will be converted to metric units only if determined to be necessary or advantageous. Unnecessary retrofit of existing systems with new metric components will be avoided where both the new metric and existing units are interchangeable and interoperable. Normally, the system of measurement in which an item is originally designed will be retained for the life of the item.
- (e) During the metric transition phase hybrid metric and U.S. customary designs will be necessary and acceptable. Material components, parts, subassemblies, and semi-fabricated material, which are of adequate or when it is otherwise specifically determined to be in the best interest of the Department of Defense. Bulk materials will be specified and accepted in metric units when it is expedient or economical to do so.
- (f) Technical reports, studies, and position papers, (except those pertaining to items dimensioned in U.S. customary units) will include metric units of measurement in addition to or in lieu of U.S. customary units. With respect to existing contracts, this requirement applies only if such documentation can be obtained without an increase in contract costs.
- (g) Use of the dual dimensions (i.e., both metric and U.S. customary dimensions) on drawings will be avoided unless it is determined in specific instances that such usage will be beneficial. However, the use of tables on the document to translate dimensions from one system of measurement to the other is acceptable. (end of clause)

H-10 Consent to Subcontract

(a) Pursuant to the clause of the General Provisions entitled "Subcontracts (AUG 1998)," FAR 52.244-2, the Contracting Officer hereby consents to the placement of subcontract(s) with the following firm(s)/consultant(s) at the ceiling amounts specified:

NAME	Phase I (Base)	Phase II (Option 1)	Total Base + Option
California Institute of Technology Quintessence Photonics Corporation	(b)(4)		

- (b) Approval must be obtained from the Administrative Contracting Officer to increase the use or number of subcontractors from the level established in subparagraph 1.
 (end of clause)
- H-11 Government Furnished Property/Facilities and Services

				F	Page 19 of 3.
Tiı	In accordance with the Section ne and Material, or Labor-Hour ovided for use in the performance	Contracts)", the follo	itled "Governm owing property,	ent Property (Cost Reimburg facilities and/or services sha	sement, all be
		OPERTY NOMENC	LATURE AWARD	<u>DELIVERY 1</u>	<u>O</u> 2
(end o	f clause)				
H-12	Proprietary Technical Data ar	nd Computer Softwar	e		
252	Any deliverable technical data asidered to be proprietary by the 2.227-7013 and 252.227-7014. f clause)	or computer software Contractor or subcor	e developed or a ntractors shall b	generated at private expense se delivered in accordance w	and ith DFARS
H-13	Consultants				
(a)	The contractor is authorized to	use the following co	nsultants to the	extent indicated:	
Na	me No	of Hours	Rate	Total Amount	
	m the level estimated in subpara clause) Exercise of Options	S			
Th Co	ne Government may exercise the contracting Officer and sent to the	option indicated beloe contractor on or bef	ow, in whole or ore the date sp	in part, by written notice signified:	gned by the
	OPTION NUMBER Option 1	DATE		i) months ADC	
H-15	Indirect Cost Ceiling				
(a) contrac	Effective on the date of contract tor shall not be entitled to reim!	award and not withs oursement of the follo	standing any ot owing:	ner provisions of this contrac	et, the
contrac	(1) Labor Overhead, tor's allowable direct labor cost				ne
Year 2,		tinistrative (G&A) ex	penses in exces	ss of for Year for Year	for
and act	In the event the final indirect could expense, the negotiated rate felause)	ost rates and actual G es and expenses will	&A expenses a be reduced to c	re less than the negotiated co onform to the lower rates and	eiling rates d expenses.

Section I - Contract Clauses

CLAUSES INCORPORATED BY REFERENCE

52.202-1	Definitions	JUL 2004
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 1995
52.203-7	Anti-Kickback Procedures	JUL 1995
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal	JAN 1997
	or Improper Activity	
52.203-10	Price Or Fee Adjustment For Illegal Or Improper Activity	JAN 1997
52.203-12	Limitation On Payments To Influence Certain Federal	SEP 2005
	Transactions	SEI 2003
52.204-4	Printed or Copied Double-Sided on Recycled Paper	AUG 2000
52.209-6	Protecting the Government's Interest When Subcontracting	JAN 2005
32.203 0	With Contractors Debarred, Suspended, or Proposed for	JAIN 2003
	Debarment	
52.211-15		OPP 1000
	Defense Priority And Allocation Requirements	SEP 1990
52.215-2	Audit and RecordsNegotiation	JUN 1999
52.215-2	Audit and RecordsNegotiation	JUN 1999
52.215-8	Order of PrecedenceUniform Contract Format	OCT 1997
52.215-12	Subcontractor Cost or Pricing Data	OCT 1997
52.215-13	Subcontractor Cost or Pricing DataModifications	OCT 1997
52.215-15	Pension Adjustments and Asset Reversions	OCT 2004
52.215-15	Pension Adjustments and Asset Reversions	OCT 2004
52.215-17	Waiver of Facilities Capital Cost of Money	OCT 1997
52.215-18	Reversion or Adjustment of Plans for Postretirement Benefits	JUL 2005
	(PRB) Other than Pensions	
52.215-19	Notification of Ownership Changes	OCT 1997
52.215-21	Requirements for Cost or Pricing Data or Information Other	
	Than Cost or Pricing DataModifications	
52.216-7	Allowable Cost And Payment	DEC 2002
52.216-8	Fixed Fee	MAR 1997
52.217-9	Option To Extend The Term Of The Contract	MAR 2000
52.219-3	Notice of Total HUBZone Set-Aide	JAN 1999
52.219-4	Notice of Price Evaluation Preference for HUBZone Small	JUL 2005
	Business Concerns	JOE 2003
52.222-1	Notice To The Government Of Labor Disputes	FEB 1997
52.222-2	Payment For Overtime Premiums	JUL 1990
52.222-3	Convict Labor	JUN 2003
52.222-21	Prohibition Of Segregated Facilities	FEB 1999
52.222-26	Equal Opportunity	
52.222-35		APR 2002
32.222-33	Equal Opportunity For Special Disabled Veterans, Veterans	DEC 2001
E0 000 00	of the Vietnam Era, and Other Eligible Veterans	TT.
52.222-36	Affirmative Action For Workers With Disabilities	JUN 1998
52.222-37	Employment Reports On Special Disabled Veterans,	DEC 2001
"0.000.0	Veterans Of The Vietnam Era, and Other Eligible Veterans	
52.223-6	Drug-Free Workplace	MAY 2001
52.223-14	Toxic Chemical Release Reporting	AUG 2003
52.225-13	Restrictions on Certain Foreign Purchases	FEB 2006

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	Utilization Of Indian Organizations And Indian-Owned	JUN 2000
	Economic Enterprises	
52.227-1	Authorization and Consent	JUL 1995
52.227-1 Alt I	Authorization And Consent (Jul 1995) - Alternate I	APR 1984
	Notice And Assistance Regarding Patent And Copyright	AUG 1996
		1100 1770
	Infringement	TINI 1007
	Patent RightsRetention By The Contractor (Short Form)	JUN 1997
52.228-7	InsuranceLiability To Third Persons	MAR 1996
52.232-9	Limitation On Withholding Of Payments	APR 1984
52.232-17	Interest	JUN 1996
52.232-20	Limitation Of Cost	APR 1984
52.232-22	Limitation Of Funds	APR 1984
52.232-23 Alt I	Assignment of Claims (Jan 1986) - Alternate I	APR 1984
		OCT 2003
52.232-25	Prompt Payment	
52.232-33	Payment by Electronic Funds TransferCentral Contractor	OCT 2003
	Registration	
52.233-1	Disputes	JUL 2002
52.233-3 Alt I	Protest After Award (Aug 1996) - Alternate I	JUN 1985
52.242-1	Notice of Intent to Disallow Costs	APR 1984
52.242-3	Penalties for Unallowable Costs	MAY 2001
52.242-4	Certification of Final Indirect Costs	JAN 1997
52.242-13	Bankruptcy	JUL 1995
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52.242-15	Stop-Work Order	AUG 1989
52.243-2 Alt V	ChangesCost-Reimbursement (Aug 1987) - Alternate V	APR 1984
52.244-2 Alt I	Subcontracts (Aug 1998) - Alternate I	JAN 2006
52.244-6	Subcontracts for Commercial Items	FEB 2006
52.245-5 Dev	Government Property (Cost-Reimbursement, Time-and-	MAY 2004
	Material, or Labor-Hour Contracts) Deviation	
52.245-9	Use And Charges	AUG 2005
52.246-1	Contractor Inspection Requirements	APR 1984
52.246-9	Inspection Of Research And Development (Short Form)	APR 1984
52.247-1	Commercial Bill Of Lading Notations	FEB 2006
52.247-63	Preference For U.S. Flag Air Carriers	JUN 2003
52.247-64	Preference for Privately Owned U.S Flag Commercial	FEB 2006
	Vessels	FED 2006
52.247-67	Submission Of Transportation Documents For Audit	FEB 2006
52.249-6	Termination (Cost Reimbursement)	MAY 2004
52.249-14	Excusable Delays	APR 1984
52.251-1	Government Supply Sources	APR 1984
52.252-6	Authorized Deviations In Clauses	APR 1984
52.253-1	Computer Generated Forms	JAN 1991
252.201-7000	Contracting Officer's Representative	DEC 1991
252.203-7001	Prohibition On Persons Convicted of Fraud or Other	DEC 2004
232.205-7001	Defense-Contract-Related Felonies	DEC 200.
252,203-7002		DEC 1991
	Display Of DOD Hotline Poster	
252.204-7000	Disclosure Of Information	DEC 1991
252.204-7003	Control Of Government Personnel Work Product	APR 1992
	Central Contractor Registration (52.204-7) Alternate A	NOV 2003
252.205-7000	Provision Of Information To Cooperative Agreement Holder	
252.205-7000	Provision Of Information To Cooperative Agreement Holder	sDEC 1991
252.209-7004	Subcontracting With Firms That Are Owned or Controlled	MAR 1998
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252.215-7000	Pricing Adjustments	DEC 1991

252.215-7002 Cost Estimating System Requirements OCT 1998 252.219-7003 Small, Small Disadvantaged and Women-Owned Small APR 1996 252.219-7011 Notification to Delay Performance JUN 1998 252.223-7004 Drug Free Work Force SEP 1988 252.225-7012 Preference For Certain Domestic Commodities JUN 2004 252.225-7016 Restriction On Acquisition Of Ball and Roller Bearings JUN 2005 252.225-7025 Restriction on Acquisition of Forgings JUN 2005 252.225-7016 Restriction on Indian Organizations and Indian-Owned Economic Enterprises, and Native Hawaiian Small Business SEP 2004 252.227-7013 Rights in Technical Data—Noncommercial Items NOV 1995 252.227-7014 Rights in Moncommercial Computer Software Documentation Technical Data—Commercial Items NOV 1995 252.227-7016 Rights in Bid or Proposal Information JUN 1995 252.227-7017 Identification and Assertion of Use, Release, or Disclosure Restrictions JUN 1995 252.227-7019 Validation of Asserted Restrictions—Computer Software Documentary JUN 1995 252.227-7030 Technical Data—Withholding Of Payment MAR 2000			
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52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT (MAR 2000)

- (a) The Government may extend the term of this contract by written notice to the Contractor within (insert the period of time within which the Contracting Officer may exercise the option); provided that the Government gives the Contractor a preliminary written notice of its intent to extend at least days (60 days unless a different number of days is inserted) before the contract expires. The preliminary notice does not commit the Government to an extension.
- (b) If the Government exercises this option, the extended contract shall be considered to include this option clause.
- (c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed

(End of clause)

52.219-23 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (SEP 2005) ALTERNATE I (JUN 2003)

(a) Definitions. As used in this clause-

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

- (1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and
- (i) No material change in disadvantaged ownership and control has occurred since its certification;
- (ii) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (iii) It is identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net;
- (2) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or
- (3) Is a joint venture as defined in 13 CFR 124.1002(f).

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

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

United States means the United States, its territories and possessions, the Commonwealth of Puerto Rico, the U.S. Trust Territory of the Pacific Islands, and the District of Columbia.

- (b) Evaluation adjustment. (1) The Contracting Officer will evaluate offers by adding a factor of _____ [Contracting Officer insert the percentage] percent to the price of all offers, except—
- (i) Offers from small disadvantaged business concerns that have not waived the adjustment; and
- (ii) An otherwise successful offer from a historically black college or university or minority institution.
- (2) The Contracting Officer will apply the factor to a line item or a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b)(1) of this clause.
- (c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply to offers that waive the adjustment.

___Offeror elects to waive the adjustment.

- (d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for—
- (i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;
- (ii) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern;
- (iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or
- (iv) Construction by special trade contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.
- (2) A small disadvantaged business concern submitting an offer in its own name shall furnish in performing this contract only end items manufactured or produced by small business concerns in the United States or its outlying areas. This paragraph does not apply to construction or service contracts.

(End of clause)

52. 219-23 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (SEP 2005) ALTERNATE II (OCT 1998)

(a) Definitions. As used in this clause-

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

- (1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and
- (i) No material change in disadvantaged ownership and control has occurred since its certification;
- (ii) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and
- (iii) It is identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO-Net).
- (2) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or
- (3) Is a joint venture as defined in 13 CFR 124.1002(f).

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

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

(b) Evaluation adjustment. (1) The Contracting Officer will evaluate offers by adding a factor of _____ [Contracting Officer insert the percentage] percent to the price of all offers, except—

- (i) Offers from small disadvantaged business concerns that have not waived the adjustment; and
- (ii) An otherwise successful offer from a historically black college or university or minority institution.
- (2) The Contracting Officer will apply the factor to a line item or a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b) (1) of this clause.
- (c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply to offers that waive the adjustment.

____Offeror elects to waive the adjustment.

- (d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for—
- (i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;
- (ii) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern;
- (iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or
- (iv) Construction by special trade contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.
- (2) A small disadvantaged business concern submitting an offer in its own name agrees to furnish in performing this contract only end items manufactured or produced by small disadvantaged business concerns in the United States. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

52.222-2 PAYMENT FOR OVERTIME PREMIUMS (JUL 1990)

- (a) The use of overtime is authorized under this contract if the overtime premium cost does not exceed 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.
- * Insert either "zero" or the dollar amount agreed to during negotiations. The inserted figure does not apply to the exceptions in paragraph (a)(1) through (a)(4) of the clause.

(End of clause)

52.233-4 APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM (OCT 2004)

United States law will apply to resolve any claim of breach of this contract.

(End of clause)

52.247-1 COMMERCIAL BILL OF LADING NOTATIONS (FEB 2006)

When the Contracting Officer authorizes supplies to be shipped on a commercial bill of lading and the Contractor will be reimbursed these transportation costs as direct allowable costs, the Contractor shall ensure before shipment is made that the commercial shipping documents are annotated with either of the following notations, as appropriate:

(a) If the Government is sho	own as the consignor or the	consignee, the annotation shall be:
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"Transportation is for the _____ and the actual total transportation charges paid to the carrier(s) by the consignor or consignee are assignable to, and shall be reimbursed by, the Government."

(b) If the Government is not shown as the consignor or the consignee, the annotation shall be:
"Transportation is for the and the actual total transportation charges paid to the carrier(s) by the consignor or consignee shall be reimbursed by the Government, pursuant to cost-reimbursement contract no This may be confirmed by contacting"
(End of clause)

52.248-1 VALUE ENGINEERING (FEB 2000)

- (a) General. The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP's) voluntarily. The Contractor shall share in any net acquisition savings realized from accepted VECP's, in accordance with the incentive sharing rates in paragraph (f) below.
- (b) Definitions. "Acquisition savings," as used in this clause, means savings resulting from the application of a VECP to contracts awarded by the same contracting office or its successor for essentially the same unit. Acquisition savings include--
- (1) Instant contract savings, which are the net cost reductions on this, the instant contract, and which are equal to the instant unit cost reduction multiplied by the number of instant contract units affected by the VECP, less the Contractor's allowable development and implementation costs;
- (2) Concurrent contract savings, which are net reductions in the prices of other contracts that are definitized and ongoing at the time the VECP is accepted; and
- (3) Future contract savings, which are the product of the future unit cost reduction multiplied by the number of future contract units in the sharing base. On an instant contract, future contract savings include savings on increases in quantities after VECP acceptance that are due to contract modifications, exercise of options, additional orders, and funding of subsequent year requirements on a multiyear contract.
- "Collateral costs," as used in this clause, means agency cost of operation, maintenance, logistic support, or Government-furnished property.
- "Collateral savings," as used in this clause, means those measurable net reductions resulting from a VECP in the agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.
- "Contracting office" includes any contracting office that the acquisition is transferred to, such as another branch of the agency or another agency's office that is performing a joint acquisition action.
- "Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.
- "Future unit cost reduction," as used in this clause, means the instant unit cost reduction adjusted as the Contracting Officer considers necessary for projected learning or changes in quantity during the sharing period. It is calculated at the time the VECP is accepted and applies either (1) throughout the sharing period, unless the Contracting Officer decides that recalculation is necessary because conditions are significantly different from those previously anticipated or (2) to the calculation of a lump-sum payment, which cannot later be revised.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistics support. The term does not include the normal administrative costs of processing the VECP or any increase in this contract's cost or price resulting from negative instant contract savings.

"Instant contract," as used in this clause, means this contract, under which the VECP is submitted. It does not include increases in quantities after acceptance of the VECP that are due to contract modifications, exercise of options, or additional orders. If this is a multiyear contract, the term does not include quantities funded after VECP acceptance. If this contract is a fixed-price contract with prospective price redetermination, the term refers to the period for which firm prices have been established.

"Instant unit cost reduction" means the amount of the decrease in unit cost of performance (without deducting any Contractor's development or implementation costs) resulting from using the VECP on this, the instant contract. If this is a service contract, the instant unit cost reduction is normally equal to the number of hours per line-item task saved by using the VECP on this contract, multiplied by the appropriate contract labor rate.

"Negative instant contract savings" means the increase in the cost or price of this contract when the acceptance of a VECP results in an excess of the Contractor's allowable development and implementation costs over the product of the instant unit cost reduction multiplied by the number of instant contract units affected.

"Net acquisition savings" means total acquisition savings, including instant, concurrent, and future contract savings, less Government costs.

"Sharing base," as used in this clause, means the number of affected end items on contracts of the contracting office accepting the VECP.

Sharing period, as used in this clause, means the period beginning with acceptance of the first unit incorporating the VECP and ending at a calendar date or event determined by the contracting officer for each VECP.

"Unit," as used in this clause, means the item or task to which the Contracting Officer and the Contractor agree the VECP applies.

"Value engineering change proposal (VECP)" means a proposal that-

- (1) Requires a change to this, the instant contract, to implement; and
- (2) Results in reducing the overall projected cost to the agency without impairing essential functions or characteristics; provided, that it does not involve a change--
- (i) In deliverable end item quantities only;
- (ii) In research and development (R&D) end items or R&D test quantities that is due solely to results of previous testing under this contract; or
- (iii) To the contract type only.
- (c) VECP preparation. As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (1) through (8) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

- (1) A description of the difference between the existing contract requirement and the proposed requirement, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, the effect of the change on the end item's performance, and any pertinent objective test data.
- (2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.
- (3) Identification of the unit to which the VECP applies.
- (4) A separate, detailed cost estimate for (i) the affected portions of the existing contract requirement and (ii) the VECP. The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under the Subcontracts paragraph of this clause, below.
- (5) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.
- (6) A prediction of any effects the proposed change would have on collateral costs to the agency.
- (7) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.
- (8) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known,
- (d) Submission. The Contractor shall submit VECP's to the Contracting Officer, unless this contract states otherwise. If this contract is administered by other than the contracting office, the Contractor shall submit a copy of the VECP simultaneously to the Contracting Officer and to the Administrative Contracting Officer.
- (e) Government action. (1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it shall not be liable for any delay in acting upon a VECP.
- (2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.
- (3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause and made either before or within a reasonable time after contract performance is completed. Until such a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral decision made solely at the discretion of the Contracting Officer.
- (f) Sharing rates. If a VECP is accepted, the Contractor shall share in net acquisition savings according to the percentages shown in the table below. The percentage paid the Contractor depends upon (1) this contract's type (fixed-price, incentive, or cost-reimbursement), (2) the sharing arrangement specified in paragraph (a) above (incentive, program requirement, or a combination as delineated in the Schedule), and (3) the source of the savings (the instant contract, or concurrent and future contracts), as follows:

(Figures in percent)							
Contract Type	Incentive (Voluntary)	Program Require (Mandatory)	ment			
	Instant Contract Rate	Concurrent and Future Contract Rate	Instant Contract Rate	Concurrent and Future Contrac Rate			
Fixed-price (includes fixed- price-award-fee; excludes other fixed-price incentive contracts)	(1) 50	(1) 50	(1) 25	25			
Incentive (fixed- price or cost) (other than award fee)	(2)	(1) 50	(2)	25			
Cost- reimbursement (includes cost- plus-award-fee; excludes other cost-type incentive Contracts)	(3) 25	(3) 25	15	15			

- (1) The Contracting Officer may increase the Contractor's sharing rate to as high as 75 percent for each VECP.
- (2) Same sharing arrangement as the contract's profit or fee adjustment formula.
- (3) The Contracting Officer may increase the Contractor's sharing rate to as high as 50 percent for each VECP.
- (g) Calculating net acquisition savings.
- (1) Acquisition savings are realized when (i) the cost or price is reduced on the instant contract, (ii) reductions are negotiated in concurrent contracts, (iii) future contracts are awarded, or (iv) agreement is reached on a lump-sum payment for future contract savings (see subparagraph (i)(4) below). Net acquisition savings are first realized, and the Contractor shall be paid a share, when Government costs and any negative instant contract savings have been fully offset against acquisition savings.
- (2) Except in incentive contracts, Government costs and any price or cost increases resulting from negative instant contract savings shall be offset against acquisition savings each time such savings are realized until they are fully offset. Then, the Contractor's share is calculated by multiplying net acquisition savings by the appropriate Contractor's percentage sharing rate (see paragraph (f) above). Additional Contractor shares of net acquisition savings shall be paid to the Contractor at the time realized.
- (3) If this is an incentive contract, recovery of Government costs on the instant contract shall be deferred and offset against concurrent and future contract savings. The Contractor shall share through the contract incentive structure in savings on the instant contract items affected. Any negative instant contract savings shall be added to the target cost or to the target price and ceiling price, and the amount shall be offset against concurrent and future contract savings.

- (4) If the Government does not receive and accept all items on which it paid the Contractor's share, the Contractor shall reimburse the Government for the proportionate share of these payments.
- (h) Contract adjustment. The modification accepting the VECP (or a subsequent modification issued as soon as possible after any negotiations are completed) shall--
- (1) Reduce the contract price or estimated cost by the amount of instant contract savings, unless this is an incentive contract;
- (2) When the amount of instant contract savings is negative, increase the contract price, target price and ceiling price, target cost, or estimated cost by that amount;
- (3) Specify the Contractor's dollar share per unit on future contracts, or provide the lump-sum payment;
- (4) Specify the amount of any Government costs or negative instant contract savings to be offset in determining net acquisition savings realized from concurrent or future contract savings; and
- (5) Provide the Contractor's share of any net acquisition savings under the instant contract in accordance with the following:
- (i) Fixed-price contracts--add to contract price.
- (ii) Cost-reimbursement contracts--add to contract fee.
- (i) Concurrent and future contract savings.
- (1) Payments of the Contractor's share of concurrent and future contract savings shall be made by a modification to the instant contract in accordance with subparagraph (h)(5) above. For incentive contracts, shares shall be added as a separate firm-fixed-price line item on the instant contract. The Contractor shall maintain records adequate to identify the first delivered unit for 3 years after final payment under this contract.
- (2) The Contracting Officer shall calculate the Contractor's share of concurrent contract savings by (i) subtracting from the reduction in price negotiated on the concurrent contract any Government costs or negative instant contract savings not yet offset and (ii) multiplying the result by the Contractor's sharing rate.
- (3) The Contracting Officer shall calculate the Contractor's share of future contract savings by (i) multiplying the future unit cost reduction by the number of future contract units scheduled for delivery during the sharing period, (ii) subtracting any Government costs or negative instant contract savings not yet offset, and (iii) multiplying the result by the Contractor's sharing rate.
- (4) When the Government wishes and the Contractor agrees, the Contractor's share of future contract savings may be paid in a single lump sum rather than in a series of payments over time as future contracts are awarded. Under this alternate procedure, the future contract savings may be calculated when the VECP is accepted, on the basis of the Contracting Officer's forecast of the number of units that will be delivered during the sharing period. The Contractor's share shall be included in a modification to this contract (see subparagraph (h)(3) above) and shall not be subject to subsequent adjustment.
- (5) Alternate no-cost settlement method. When, in accordance with subsection 48.104-4 of the Federal Acquisition Regulation, the Government and the Contractor mutually agree to use the no-cost settlement method, the following applies:
- (i) The Contractor will keep all the savings on the instant contract and on its concurrent contracts only.

- (ii) The Government will keep all the savings resulting from concurrent contracts placed on other sources, savings from all future contracts, and all collateral savings.
- (j) Collateral savings. If a VECP is accepted, the Contracting Officer will increase the instant contract amount, as specified in paragraph (h)(5) of this clause, by a rate from 20 to 100 percent, as determined by the Contracting Officer, of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price, target price, target cost, or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer will be the sole determiner of the amount of collateral savings.
- (k) Relationship to other incentives. Only those benefits of an accepted VECP not rewardable under performance, design-to-cost (production unit cost, operating and support costs, reliability and maintainability), or similar incentives shall be rewarded under this clause. However, the targets of such incentives affected by the VECP shall not be adjusted because of VECP acceptance. If this contract specifies targets but provides no incentive to surpass them, the value engineering sharing shall apply only to the amount of achievement better than target.
- (1) Subcontracts. The Contractor shall include an appropriate value engineering clause in any subcontract of \$100,000 or more and may include one in subcontracts of lesser value. In calculating any adjustment in this contract's price for instant contract savings (or negative instant contract savings), the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs, and any value engineering incentive payments to a subcontractor, clearly resulting from a VECP accepted by the Government under this contract. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; provided, that the payments shall not reduce the Government's share of concurrent or future contract savings or collateral savings.
- (m) Data. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

"These data, furnished under the Value Engineering clause of contract...., shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations."

If a VECP is accepted, the Contractor hereby grants the Government unlimited rights in the VECP and supporting data, except that, with respect to data qualifying and submitted as limited rights technical data, the Government shall have the rights specified in the contract modification implementing the VECP and shall appropriately mark the data. (The terms "unlimited rights" and "limited rights" are defined in Part 27 of the Federal Acquisition Regulation.)

(End of clause)

52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

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

[www.com]

(End of clause)

52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES (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 <u>insert regulation name</u> (48 CFR _____) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

(End of clause)

252.204-7006 BILLING INSTRUCTIONS (OCT 2005)

When submitting a request for payment, the Contractor shall--

- (a) Identify the contract line item(s) on the payment request that reasonably reflect contract work performance; and
- (b) Separately identify a payment amount for each contract line item included in the payment request.

(End of clause)

Section J - List of Documents, Exhibits and Other Attachments

LIST OF ATTACHMENTS

Document Type Description

Attachment 1 Statement of Work

A. STATEMENT OF WORK

Phase I:

Phase	Work Summary I begins with a system design and modeling effort, followed by a
subsequent PLL's). A k	A Solitation College development offer Alone
	of Thase I is the demonstration of
	(b)(4)
(b)(4)	
task.	Table 8 summarizes the requirements for Telaris' subcontractors by

Tasks	Table 8: Contractor Requirements
1. (b)(4)	(b)(4)
2.	
3.	
5.	
6,	
7.	
8.	

Statement of Work Detail

Task 1: First generation system modeling and performance optimization

 relationship between closed loop emitter phase noise and noise at detector (detector noise, scattered and stray light background, scattered and stray light beating products)

- relationship between closed loop emitter phase noise and PLL circuit noise
- · relationship between closed loop emitter phase noise and DFB drive circuit noise
- relationship between laser linewidth, loop bandwidth, open loop emitter phase noise and closed loop emitter phase noise
- · range of RO, LO powers at detector/mixer for which locking occurs
- · beam propagation factor as a function of emitter phase noise
- level of acceptable spurious backreflections/scatter from lens array onto detector
- beam propagation efficiency for given level of power/phase imbalance between emitters, array geometry, laser asymmetry/astigmatism
- optimal loop filter response/transfer function/loop bandwidth/delay
- stability criterion for locking in presence of noise

Task 2: Design and Develop First Generation Component Technologies

- MOPA laser emitter design and fabrication (p side or junction side up)
- microlens array design and fabrication
- baffle design and fabrication approach
- · polarizer design and fabrication
- SiGe detector design and fabrication
- · electronics design and fabrication
- electronics integration approach
- detector integration approach

 design and fabrication of beam combining optics with

 black

 design and fabrication of beam combining optics with
- design and fabrication of reference laser beam expanding optics

Task 3: Demonstrate Locking of Two Lasers

- characterize reference and local MOPA laser chirp, linewidth, noise characteristics
- characterize photodetector
- integrate local laser, reference laser, detector, OPLL circuitry
- characterize relative phase error between two lasers
- · demonstrate and develop initial frequency acquisition process
- demonstrate long term locking stability

Task 4: Demonstrate individual MOPA elements

• MOPA laser emitter design and fabrication (p side or junction side down to facilitate heat conduction out of laser)

• conduct lifetime testing at (b)(4)

Task 5: Integrate first generation components into array

- MOPA laser array design and fabrication
- PLL design and fabrication
- · detector design and fabrication
- opto-mechanical-electrical design and integration
- develop alignment fixturing
- · develop alignment procedure
- · develop packaging procedure
- · conduct lifetime testing of array

Task 6: Demonstrate coherent locking and beam combining of [b](4)

- · characterize laser array linewidth, noise characteristics
- characterize output beam characteristics (phase and amplitude ripple)
- · develop tests, algorithms and hardware to program in optimal phase per emitter

Task 7: Characterization of laser array in relation of program's Phase I performance goals

- characterize beam combining efficiency
- · characterize beam propagation efficiency
- characterize electrical efficiency
- · characterize electrical power requirements of phase control electronics
- characterize total optical power

Task 8: Plan to improve Laser Performance Metric to >0.24 and power > 10 kW

- · review performance and design data
- · refine system level design
- · refine component level design

Table 9

System Design and Performance Value

(D)(4)

(b)(4) Page 4 of 6

Table 9 summarizes the design and performance parameters of Phase I. The quality of the wavefront will be experimentally determined by use of an optical beam profiling system and each factor contributing to the Laser Performance Metric will be characterized.

Phase II:

Statement of Work Summary

Following a similar approach as in Phase I, Phase II will begin with a system modeling effort building on the results of Phase I. This will be followed by a second generation component (laser, detector, PLL, lens) development effort. The output power of each laser will be increased to 2.5 W and the beam quality will be improved. We anticipate that the primary path to increase the power per emitter will be to

anticipate that the primary path to increase the pos	ver ner emitter will he to ((b)(4)
(b)(4)	Table 10

summarizes the requirements for Telaris' subcontractors by task.

Table 10

1401010	
Tasks Contractor Requirements	
(b)(4)	

Statement of Work Detail

Task 1: Second generation system modeling and performance optimization

- develop highly scaleable and parallel optical-electrical-mechanical integration approach
- system-level simulation of integrated approach

Task 2: Design and Develop Second Generation Component Technologies

- MOPA laser emitter design and fabrication (p side or junction side down)
- (b)(2
- design microlens array
- design microbaffle array
- characterize photodetectors

Task 3: Integrate second generation components into array

- MOPA laser array design and fabrication
- · PLL design and fabrication
- · detector design and fabrication
- · opto-mechanical-electrical design and integration
- · develop alignment fixturing
- · develop alignment procedure
- · develop packaging procedure
- · conduct array lifetime testing

Task 4: Demonstrate locking of 4900 elements

- (b)
- · develop acquisition procedure
- · characterize laser array linewidth, noise characteristics
- characterize output beam characteristics

Task 5: Characterization of laser array in relation of program's Phase II performance goals

- characterize beam combining efficiency
- characterize beam propagation efficiency
- characterize electrical efficiency
- characterize electrical power requirements of phase control electronics
- · characterize total optical power
- · characterize long term stability

Task 6: Proposed design approach to attain [6](4)

- review performance and design data
- · refine system level design
- · refine component level design
- simulate system level performance for coherent combining, wavelength combining, polarization combining approaches to "Phase III"

The key performance targets of Phase II are summarized in Table 11.

HR0011-06-C-00029 Attachment No. 1 Page 6 of 6

System Design a Paran	neters	Value	

AMENDMENT OF SOLIC	CITATION/MODII	FICATION OF CONTRA	CT	I. CONTRACT	ID CODE	PAGE OF PA
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00001	28-Mar-2006	Q407/46				
ISSUED BY COD DARPA CMO ATTN: [OX6) 3701 NORTH FAIR FAX DRIVE ARLINGTON VA 22203-1714	E HR0011	7. ADMINISTERED BY (If other than in DCMA LOS ANGELES P.O. BOX 9608 MISSION HILLS CA 91346-9608	tem6)	coi	DE S051	2A
NAME AND ADDRESS OF CONTRACT	OR (No., Street, County,	State and Zip Code)		A. AMENDM	ENT OF SC	DLICITATION
2118 WILSHIRE BLVD #238 SANTA MONICA CA 90403-5784				B. DATED (S	EE ITEM I	1)
						CT/ORDER NO.
			- 47	10B. DATED	SEE ITEM	13)
ODE 4AFP6	IFACILITY CO	DE APPLIES TO AMENDMENTS OF		08-Mar-2006		
Offer must acknowledge receipt of this amendme (a) By completing Items 8 and 15, and returning or (c) By separate letter or telegram which inclu RECEIVED ATTHE PLACE DESIGNATED F REJECTION OF YOUR OFFER. If by virtue of provided each telegram or letter makes reference	copies of the amendme des a reference to the solicitation OR THE RECEIPTOF OFFERS this amendment you desire to ch	ent; (b) By acknowledging receipt of this as n and amendment numbers. FAILURE OF Y S PRIOR TO THE HOUR AND DATE SPE lange an offer already submitted, such chang	TENDENCE TO THE TENDENCE TO TH	each copy of the of OWLEDGMENT Y RESULT IN e by telegram or le	TO BE	
. ACCOUNTING AND APPROPRIATIO	ON DATA (If required)					
See Schedule						
		TO MODIFICATIONS OF CONTE				
A. THIS CHANGE ORDER IS ISSUED P CONTRACT ORDER NO. IN ITEM	URSUANT TO: (Specify	authority) THE CHANGES SET FC			MADE IN T	HE
B. THE ABOVE NUMBERED CONTRA office, appropriation date, etc.) SET C. THIS SUPPLEMENTAL ACREEME. D. OTHER (Specify type of modification	FORTH IN ITEM 14, PUI NT IS ENTERED INTO P	RSUANT TO THE AUTHORITY (as changes	in paying
Limitation of Funds Clause						
IMPORTANT: Contractor X is no	t, is required to si	ign this document and return	сор	ies to the issuin	g office.	
4. DESCRIPTION OF AMENDMENT/Mowhere feasible.) Modification Control Number: ewar incremental Funding. See page 2. **See page 2.** **See page 2.** **See page 3.** **See page 4.** **See page 4.** **See page 5.** **See page 6.** **See page 6.** **See page 7.* **See page 7.* **See page 8.* **See page 9.* **	ecrno06481		s unchanged a	and in full force and	d effect.	or print)
JA. NAME AND THEE OF SIGNER (1)	pe or print)	(b)(6) TEL 703-696-2434	JI CON I	EMAIL (b)(6)	CLIK (1 ype	or prair)
5B. CONTRACTOR/OFFEROR	15C. DATE SIGNI				6	C. DATE SIGN
(Signature of person authorized to sign)				4	28-Mar-2006
XCEPTION TO SF 30		30-105-04		ST	ANDARD F	ORM 30 (Rev.
PPROVED BY OIRM 11-84		30.100-07		Pre	escribed by C R (48 CFR)	SA .

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

Incremental funding in the amount of \$2,108,445 is hereby provided to incrementally fund Contract Line Item Number (CLIN) 0001. Accordingly, Section B-2, Allotment of Funds, is restated as follows:

- (a) For the purposes of paragraph (b) of the "Limitation of Funds" clause in Section I of this contract:
 - (1) the amount available for payment and allotted to this incrementally funded contract is \$2,684,215; and
 - (2) the items provided for by such amount are CLIN 0001
 - (3) the period of performance for which it is estimated that such amount will provide is through September 8, 2007.

SECTION G - CONTRACT ADMINISTRATION DATA

Accounting and Appropriation

Summary for the Payment Office

As a result of this modification, the total funded amount for this document was increased by \$2,108,445.00 from \$575,770.00 to \$2,684,215.00.

SUBCLIN 000102:

Funding on SUBCLIN 000102 is initiated as follows:

ACRN: AB

Acctng Data: 9760400 1320 Q407 P6G10 2525 DPAC 6 5097 S12136 62702E

Increase: \$2,108,445.00

Total: \$2,108,445.00

(End of Summary of Changes)

AMENDMENT OF SOLICIT	TATION/MODII	FICATION OF CONTRAC	Т	1, CONTRACT	ID CODE	PAGE OF	PAGES 2
2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.			5. PROJECT	NO (If applica	
P00002	16-Jun-2006	Q407/46					
DARPA CMO [(b)(6) ATTN: 3701 NORTH FAIRFAX DRIVE ARLINGTON VA 22203-1714	7. ADMINISTERED BY (If other than item DCMALOS ANGELES P.O. BOX 9608 MISSION HILLS CA 91346-9608	P.O. BOX 9608					
NAME AND ADDRESS OF CONTRACTOR TELARIS INC 2116 WILSHIRE BLVD #238 SANTA MONICA CA 90403-5784 ODE 4AFP6 The above numbered solicitation is amended as set for Offer must acknowledge receipt of this amendment process of the second process of	FACILITY CO THIS IT EM ONLY The in Item 14. The hour and the reference to the solicitation THE RECEIPT OF OFFERS	DE APPLIES TO AMENDMENT'S OF SC d date specified for receipt of Offer scified in the solicitation or as amended by one snt; (b) By acknowledging receipt of this amen a and amendment numbers. FAILURE OF YOU S PRIOR TO THE HOUR AND DATE SPECI	X X X X X X X X X X	s extended, [owing methods: each copy of the of OWLEDGMENT RESULT IN	EE ITEM I CONTRACTORY (SEE ITEM is not extended; TO BE	T/ORDER	
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C. THIS SUPPLEMENT AL AGREEMENT Section H-10 "Consent to Subcontract" and D. OTHER (Specify type of modification and	d Mutual Agreement o						
4. DESCRIPTION OF AMENDMENT/MODI where feasible.) Modification Control Number: ew arecn The purpose of this modification is to conse amount of There is no change to Additionally, this modification exempts the s California (USC) from DFAR clause 252.204 page tw o (2).	FICATION (Organize mo06704 nt to the use of Univer the total estimated or ubcontract universitie	rsity of Southern California (USC), as ost-plus-fixed-fee amount of the cont is California Institute of Technology (a subco	ontractor, at a a result of this d) and Univers	ject matter not-to-exce modification sity of South	n. nern	
xcept as provided herein, all terms and conditions of the SA. NAME AND TITLE OF SIGNER (Type 5B. CONTRACTOR/OFFEROR		16.A. NAME AND TITLE OF (b)(6) TEL: 703-696-2434	-		ICER (Type	C. DATE S	
(Signature of person authorized to sign)	_	(Signature of Contracting	Officer)			16-Jun-2006	,
EXCEPTION TO SF 30		30-105-04	,		ANDARD F	ORM 30 (R	ev 10.

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

1. SECTION H - SPECIAL CONTRACT REQUIREMENTS

The following have been modified as noted in bold:

H-10 Consent to Subcontract

(a) Pursuant to the clause of the General Provisions entitled "Subcontracts (AUG 1998)," FAR 52.244-2, the Contracting Officer hereby consents to the placement of subcontract(s) with the following firm(s)/consultant(s) at the ceiling amounts specified:

NAME	Phase I (Base)	Phase II (Option 1)	Total Base + Option
California Institute of Technology Quintessence Photonics Corporation University of Southern California	(b)(4)		
** (***********************************			

(b) Approval must be obtained from the Administrative Contracting Officer to increase the use or number of subcontractors from the level established in subparagraph 1. (end of clause)

(End of Summary of Changes)