

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. Contract ID Code
Cost Plus Fixed Fee

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2. Amendment/Modification No. 03	3. Effective Date 2014FEB25	4. Requisition/Purchase Req No. SEE SCHEDULE	5. Project No. (If applicable)
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6. Issued By U.S. ARMY CONTRACTING COMMAND MONTY MCCLELLAND WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL EMAIL: MONTY.MCCLELLAND@US.ARMY.MIL	Code W56HZV	7. Administered By (If other than Item 6) DCMA MANASSAS 10500 BATTLEVIEW PKWY SUITE 200 MANASSAS VA 20109-2342	Code S2404A
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8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code) SCIENCE APPLICATIONS INTERNATIONAL CORPORATION 1710 SAIC DR MCLEAN, VA 22102-3701	<input type="checkbox"/>	9A. Amendment Of Solicitation No.
	<input type="checkbox"/>	9B. Dated (See Item 11)
	<input checked="" type="checkbox"/>	10A. Modification Of Contract/Order No. W56HZV-09-D-0153/0005
	<input type="checkbox"/>	10B. Dated (See Item 13) 2012SEP28
Code 5UTP8	Facility Code	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers

is extended, is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods:
(a) By completing items 8 and 15, and returning _____ copies of the amendments; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. **FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER.** If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. Accounting And Appropriation Data (If required)

NO CHANGE TO OBLIGATION DATA

**13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS
It Modifies The Contract/Order No. As Described In Item 14.**

<input type="checkbox"/>	A. This Change Order is Issued Pursuant To: The Contract/Order No. In Item 10A.	The Changes Set Forth In Item 14 Are Made In
<input type="checkbox"/>	B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b).	
<input type="checkbox"/>	C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of:	
<input checked="" type="checkbox"/>	D. Other (Specify type of modification and authority) Bilateral Mod Per Mutual Agreement	

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the Issuing Office.

14. Description Of Amendment/Modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

SEE SECOND PAGE FOR DESCRIPTION

Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. Name And Title Of Signer (Type or print)	16A. Name And Title Of Contracting Officer (Type or print) JOHN M. HOPFNER JOHN.HOPFNER@US.ARMY.MIL (586)282-7359		
15B. Contractor/Offeror (Signature of person authorized to sign)	15C. Date Signed	16B. United States Of America By _____ /SIGNED/ (Signature of Contracting Officer)	16C. Date Signed 2014FEB25

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MOD/AMD 03

Name of Offeror or Contractor: SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

SECTION A - SUPPLEMENTAL INFORMATION

Buyer Name: MONTY MCCLELLAND
Buyer Office Symbol/Telephone Number: CCTA-ASG-B/(586)282-9750
Type of Contract: Cost Plus Fixed Fee
Kind of Contract: Research and Development Contracts
Type of Business: Large Business Performing in U.S.
Surveillance Criticality Designator: C
Weapon System: No Identified Army Weapons Systems

*** End of Narrative A0000 ***

PURPOSE OF MOD: EXTEND PERIOD OF PERFORMANCE

PRIOR CONTRACT AMOUNT: \$2,597,830.55
CHANGES IN CONTRACT AMOUNT: \$ 0.00
CURRENT CONTRACT AMOUNT: \$2,597,830.55

1. The purposes of this bilateral modification are to:
 - a. Extend the period of performance (PoP) of TI-001 by 5 months at no additional expense to the Government;
 - b. Update the Scope of Work to include an additional report as consideration for the PoP extension.
2. To accomplish these purposes, the contract is changed as follows:
 - a. CLINs 1001AA and 3001AA performance completion date extended by 5 months from 27-SEP-2013 to 28-FEB-2014.
 - b. Section C Scope of Work is updated to include the following:

'C.5.12 A final report documenting the work accomplished on the oil system design IAW CDRL A003.'
3. As a result of this modification the total contract amount remains UNCHANGED.
4. All other terms and conditions of contract W56HZV-09-D-0153 DO 0005 remain UNCHANGED and in full force and effect.

*** END OF NARRATIVE A0004 ***

Name of Offeror or Contractor: SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

PERFORMANCE WORK STATEMENT

C.1.0 Purpose and Scope

C.1.1 The purpose of this requirement is to obtain a small, scalable, heavy fueled Wankel cycle combustion engine platform. Small is defined as less than 45 hp per rotor.

C.1.2 The objective of this Task Order, as carried out per this Statement of Work and per individual Technical Instructions to be issued hereunder, is to provide a small, scalable engine platform whose application will be for power generation as a ground vehicle auxiliary power unit or unmanned vehicle prime mover.

C.1.3 Period of Performance: Ordering Periods for issuance of individual Technical Instructions

Year 1	29 September 2012 through 28 September 2013
Year 2	29 September 2013 through 28 September 2014
Year 3	29 September 2014 through 28 September 2015

C.2.0 General

C.2.1 The Contractor shall not act or represent itself as an agent of the Government, nor shall it have authority to make decisions on behalf of or bind the Government to any agreements or commitments through its performance of any work under this Task Order or Contract.

C.2.2 When preparing technical reports, summaries, charts, briefing packages, and other written material under this Task Order, the Contractor shall use computer software whose format and version(s) are compatible with that used by G-4 (Microsoft Windows and Office Suite).

C.3.0 Program Requirements

C.3.1 The engine must be built from a base architecture so that the engine can easily be scaled from a single rotor to a dual rotor. The single rotor engine and the dual rotor engine shall maximize shared components. The engine requirements that must be simultaneously met are shown in Table 1.

Table 1

Requirements List

- #1 - Powerpack Dimensions
- #2 - Engine Shaft Power Levels
- #3 - Base Engine Scalable/Commonality
- #4 - Powerpack Weight
- #5 - Brake Specific Fuel Consumption
- #6 - JP-8/DF-2 Fuel Operation
- #7 - Brake Specific Oil Consumption
- #8 - Operating Temperature

Single Rotor Objective

- #1 - 12.5 height, 24 width, < 52 length
- #2 - 40hp (T), 45hp (O)
- #3 - N/A
- #4 - 90 lbs. (T), 75 lbs. (O)
- #5 - 0.55 lbs/hp hr (T), 0.5 lbs/hp hr (O)
- #6 - MIL-STD-83133G
- #7 - 4 grams/hp hr (T), 3.5 grams/hp hr (O)
- #8 - -20oF to 125oF

Dual Rotor Objective

- #1 - 12.5 height, 24 width, < 52 length
- #2 - 80hp (T), 90hp (O)
- #3 - At Least 85% (T), 95% (O) of Components Shared
- #4 - 125 lbs. (T), 100 lbs. (O)
- #5 - 0.55 lbs/hp hr (T), 0.5 lbs/hp hr (O)
- #6 - MIL-STD-83133G
- #7 - 4 grams/hp hr (T), 3.5 grams/hp hr (O)
- #8 - -20oF to 125oF

C.3.2 The engine platform shall operate on heavy fuels (DF-2, JP-8).

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C.3.3 The offeror must have demonstrated no less than 50 hours of operation on JP-8 or DF-2 with a similar or applicable engine prior to program initiation, demonstrating the offerors ability to operate Wankel engines on JP8/DF2. The 50 hours of operation is not a continuous test, and includes engineering development time. Supporting documentation shall be included for proposals to be deemed acceptable.

C.3.4 The power pack shall include all components required for the engine to operate, including any charge air system (turbocharger, supercharger), starting system, intake and exhaust manifolds, lubrication system, control system (electronics), output shaft, accessory driven components, etc.

C.3.5 Within three months of contract end, the Contractor shall conduct a 100 hour test at the Contractor's facility to demonstrate the engine's capabilities to meet the requirements in Table 1. The test shall be completed without incident and with no maintenance required. The test cycle will be ten repeats of the cycle defined in Appendix A. The test does not need to be continuous in the sense that it may be suspended at the end of a test and begun again at a later time at the beginning of the following segment after the recommended engine warm up procedure. At test completion, the engine shall be capable of meeting the requirements in Table 1.

C.3.6 The Contractor shall deliver the power pack to the Detroit Arsenal Propulsion laboratory. The hardware shall include one set of spare parts for the normal wear items. The Contractor shall be responsible for shipping the components to the Government site.

C.3.7 The Government shall conduct an additional 100 hour test to further demonstrate the engine capabilities. The Contractor shall provide support at the Detroit Arsenal Propulsion laboratory to ensure proper setup and operation of the engine. General test support shall be provided during the 100 hours of testing at the Detroit Arsenal Propulsion laboratory, to include any engine rebuilds needed prior to completion of the 100 hours. It is anticipated that support will be required for two days at the beginning of the test for setup and checkout, two days at the end of the test for teardown and documentation, and one day in the middle of the test for inspection and evaluation.

C.3.8 The Contractor shall integrate the single rotor option into an Auxiliary Power Unit (APU) designed for the space claim provided in Appendix B, meeting the requirements in Table 2.

Table 2

Measurable Metric	Fully Integrated Objective
Operational Temperatures	-25\ 'b0F to 125\ 'b0F MIL-STD-705C
Shock and Vibration	MIL-STD-810G
Space Claim	See Appendix A
Minimum Output Power	25kW electric @ 28 volts
Acoustic signature	MIL-STD-1474D Level 1 750m (T), 400m (O)

C.3.8.1 The APU must contain all necessary components within the space claim including the cooling system.

C.3.8.2 The APU shall be developed to a Technology Readiness Level (TRL) 6 by program end and meet the attached Performance Specification (Appendix C) for fielding an APU.

C.3.8.3 The Performance Specification provides details on APU configuration requirements.

C.3.8.4 The Contractor shall deliver three identical APUs for vehicle testing at the Tank Automotive Research, Development, Engineering Center, Yuma Proving Ground (YPG) or Nevada Automotive Test Center (NATC). The Contractor shall be responsible for shipping the APUs to the determined test site. The Government will provide test vehicles. The Contractor shall provide repairs at the test site, to include parts necessary to support the repairs.

C.3.8.5 A manufacturing plan shall be delivered to the government for the single rotor APU. The manufacturing plan should include how manufacturing will be adapted to changes in volume. It is expected that the volume of APUs will fluctuate over time, and it is also expected that the demand of APUs will return even after multiple years without a need.

C.3.9 The Contractor shall integrate the dual rotor option into an APU designed for the space claim provided in appendix B, meeting the requirements provided in Table 3.

Table 3 Dual Rotor APU Requirements

Measurable Metric	Fully Integrated Objective
Operational Temperatures	-25\ 'b0F to 125\ 'b0F MIL-STD-705C
Shock and Vibration	MIL-STD-810G
Space Claim	See Appendix B
Minimum Output Power	45kW continuous electric @ 600 volts
Acoustic signature	MIL-STD-1474D Level 1 750m (T), 400meters (O)

MIL-STD-705C can be found at [://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=35902](http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=35902)

MIL-STD-810G can be found at [://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=35978](http://assist.daps.dla.mil/quicksearch/basic_profile.cfm?ident_number=35978)

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C.3.9.1 The APU must contain all necessary components within the space claim with exception of a heat exchanger for the cooling system.

C.3.9.2 The APU shall be developed to a Technology Readiness Level (TRL) 6 by program end and meet the attached Performance Specification (Appendix C) for fielding an APU.

C.3.9.3 The Performance Specification provides details on APU configuration requirements.

C.3.9.4 The Contractor shall deliver three identical units for vehicle testing at the Tank Automotive Research, Development, Engineering Center, Yuma Proving Ground (YPG) or Nevada Automotive Test Center (NATC). The Contractor shall be responsible for shipping the units to a determined test site. The Government will provide test vehicles. The Contractor shall provide support at the test site to include parts necessary to support the test.

C.3.9.5 A manufacturing plan shall be delivered to the Government for the dual rotor APU. The manufacturing plan should include how manufacturing will be adapted to changes in volume. It is expected that the volume of APUs will fluctuate over time, and it is also expected that the demand of APUs will return even after multiple years without a need.

C.4.0 Meetings

C.4.1 Start-of-Work Meeting. The Government Contracting Officers Representative (COR) shall convene a post-award Start-of-Work meeting within 15 days after award of this Contract to establish working relationships and responsibilities. The Contractor shall ensure that any major stakeholders attend the meeting.

C.4.2 Monthly telephone meetings with project updates will be held.

C.4.3 Mid program review. A review shall be held between 18 months and 20 months after contract award to review the status of the program.

C.4.4 Final program review. A review shall be held between 34 and 36 months after contract award to present the results of this contract and demonstrate the hardware capabilities.

C.5.0 Deliverables

The Contractor shall prepare all deliverables (e.g., reports and plans) in Contractor format, using best in-house practices to produce documents that are clearly written, describe accomplishments accurately, detail technical issues, and define risks and problems. In order to facilitate transition to a paperless reporting system, the Contractor shall submit reports in electronic format whenever possible. The first date of submission is 30 days after Contract award and the 10th day of each month thereafter.

C.5.1 A start of work meeting will be conducted IAW CDRL A001.

C.5.2 Monthly Performance Report will be submitted in accordance with (CDRL A004).

C.5.3 Contractor's Progress Status and Management Report shall be submitted quarterly IAW CDRL A002.

C.5.4 Draft final technical report shall be submitted IAW CDRL A003.

C.5.5 Mid program review shall be conducted IAW CDRL A005.

C.5.6 Final program review shall be conducted IAW CDRL A006.

C.5.7 All test incidents shall be reported to the government over the entire period of performance IAW CDRL A007.

C.5.8 Dual rotor powerpack tested to 100 hours and ready to test for another 100 hours at the Detroit Arsenal Propulsion Laboratory.

C.5.9 Three single rotor engine 25kW APUs developed to a TRL 6 level.

C.5.10 A manufacturing plan for the single rotor APU.

C.5.10 Three dual rotor engine 45kW APUs developed to a TRL 6 level.

C.5.11 A manufacturing plan for the dual rotor APU.

C.5.12 A final report documenting the work accomplished on the oil system design IAW CDRL A003. ****

C.6.0 Travel:

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The Contractor shall be required to travel to support the testing efforts described in the base effort, as well as option periods. In addition, travel to a Government facility for 2 meetings in the base effort and option periods is expected.

C.7.0 Government-Furnished Support:

No GFE provided.

C.8.0 Security:

All Contractor personnel must maintain a favorable background investigation before accessing the TACOM databases and local Area Network in accordance with AR 25-2 and AR 380-67. All information or data developed under this effort belongs to and is the property of the U.S. Government and shall be marked and handled as For Official Use Only (FOUO). The Contractor shall not release any information or data to third parties without the express written approval of the Procuring Contract Officer (PCO). The Contractor shall have access to Government data for the accomplishment of work under this agreement. The Contractor must sign a non-disclosure agreement.

C.9.0

Manpower Reporting Requirements to Account for Contract Services shall be reported in accordance with clause 52.237-4000.

C.10.0 Technical Instructions

C.10.1 Technical Instruction 1 (TI-001) added as Attachment 0002 in Section J.

C.10.2 Technical Instruction 2 (TI-002) added as Attachment 0003 in Section J.

**** Added on Modification 03.

*** END OF NARRATIVE C0001 ***