

ORDER FOR SUPPLIES OR SERVICES

1. CONTRACT PURCH ORDER/AGREEMENT NO. DAAE07-03-D-L001	2. DELIVERY ORDER/CALL NO. 0003	3. DATE OF ORDER/CALL (YYYYMMDD) 2004SEP27	4. REQUISITION/PURCH REQUEST NO. SEE SCHEDULE	5. PRIORITY DOA4
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6. ISSUED BY TACOM WARREN AMSTA-AQ-ABGD PAUL VESELENAK (586)574-7632 WARREN, MICHIGAN 48397-5000 EMAIL: VESELENP@TACOM.ARMY.MIL HTTP://CONTRACTING.TACOM.ARMY.MIL	CODE W56HZV	7. ADMINISTERED BY (if other than 6) DCMA HARTFORD 130 DARLIN ST EAST HARTFORD, CT 06108-3234	CODE S0701A	8. DELIVERY FOB <input type="checkbox"/> DESTINATION <input checked="" type="checkbox"/> OTHER (See Schedule if other)
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9. CONTRACTOR UTC FUEL CELLS, LLC 195 GOVERNORS HIGHWAY SOUTH WINDSOR, CT. 06074-2419 NAME AND ADDRESS TYPE BUSINESS: Large Business Performing in U.S.	CODE 1F2J4	FACILITY	10. DELIVER TO FOB POINT BY (Date) (YYYYMMDD) SEE SCHEDULE	11. X IF BUSINESS IS <input type="checkbox"/> SMALL <input type="checkbox"/> SMALL DISADVANTAGED <input type="checkbox"/> WOMAN-OWNED
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14. SHIP TO SEE SCHEDULE	CODE	15. PAYMENT WILL BE MADE BY DFAS - COLUMBUS CENTER DFAS-CO/NORTH ENTITLEMENT OPERATION P.O. BOX 182266 COLUMBUS OH 43218-2266	CODE HQ0337	MARK ALL PACKAGES AND PAPERS WITH IDENTIFICATION NUMBERS IN BLOCKS 1 AND 2
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16. TYPE OF ORDER	DELIVERY/ CALL <input checked="" type="checkbox"/>	THIS DELIVERY ORDER IS ISSUED ON ANOTHER GOVERNMENT AGENCY OR IN ACCORDANCE WITH AND SUBJECT TO TERMS AND CONDITIONS OF ABOVE NUMBERED CONTRACT.
	PURCHASE	Reference your <input type="checkbox"/> Oral <input type="checkbox"/> Written Quotation _____, Dated _____, furnish the following on terms specified herein.
ACCEPTANCE. THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.		

NAME OF CONTRACTOR	SIGNATURE	TYPED NAME AND TITLE	DATE SIGNED (YYYYMMDD)
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If this box is marked, supplier must sign Acceptance and return the following number of copies:

17. ACCOUNTING AND APPROPRIATION DATA/LOCAL USE
SEE SCHEDULE

18. ITEM NO.	19. SCHEDULE OF SUPPLIES/SERVICE	20. QUANTITY ORDERED/ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	SEE SCHEDULE CONTRACT TYPE: Cost Contract KIND OF CONTRACT: Research and Development Contracts				

* If quantity accepted by the Government is same as quantity ordered, indicate by X. If different, enter actual quantity accepted below quantity ordered and encircle.	24. UNITED STATES OF AMERICA MICHAEL L. CIONI /SIGNED/ CIONIIM@TACOM.ARMY.MIL (586)574-7070 BY: _____ CONTRACTING/ORDERING OFFICER	25. TOTAL	\$1,000,000.00
		26. DIFFERENCES	

27a. QUANTITY IN COLUMN 20 HAS BEEN
 INSPECTED RECEIVED ACCEPTED, AND CONFORMS TO CONTRACT EXCEPT AS NOTED

b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE	c. DATE (YYYYMMDD)	d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE
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e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE	28. SHIP. NO.	29. D.O. VOUCHER NO.	30. INITIALS
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f. TELEPHONE NUMBER	g. E-MAIL ADDRESS	<input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	32. PAID BY	33. AMOUNT VERIFIED CORRECT FOR
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36. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT.		<input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	31. PAYMENT	34. CHECK NUMBER
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a. DATE (YYYYMMDD)	b. SIGNATURE AND TITLE OF CERTIFYING OFFICER				
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37. RECEIVED AT	38. RECEIVED BY (Print)	39. DATE RECEIVED (YYYYMMDD)	40. TOTAL CONTAINERS	41. S/R ACCOUNT NUMBER	42. S/R VOUCHER NO.
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SUPPLEMENTAL INFORMATION

ACCEPTANCE APPENDIX

1. This Order 0003 is subject to all the terms and conditions of Contract DAAE07-03-D-L001 unless otherwise stated herein.
2. CLINs 0001AA and 0002AA are hereby established as shown on the attached continuation sheet, for Services and Travel, respectively, per the requirements of Task Order No. UTC-0003.

*** END OF NARRATIVE A 001 ***

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Name of Offeror or Contractor: UTC FUEL CELLS, LLC

DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

Task Order No. UTC- 0003

Ref: Contract No. DAAE07-03-D-L001 (the "Contract")

Estimated Hours: 7351

Estimated Completion Date: 31 January 2006

Total Government Funding: \$ 1,000,000

C.1.0 Task Order Objective:

This Task Order serves as a complement of Task Order UTC-0001, as modified, and Task Order UTC-0002, each as issued under the Contract. There is a need to further develop the Fuel Cell Power Plant ("FCPP") and Cell Stack Assembly ("CSA") technology for the medium/heavy duty vehicle fuel cell application program. A portion of the FCPP and CSA development work is included under this Task Order UTC-0003, as described in paragraph C.3.0, and further specified under task items #1 through #6.

C.2.0 Background

UTCFC has existing FCPP designs and technology. All activities and objectives under this Task Order exclude in all respects the design, development and verification of, or any other work relating to, FCPP technology which has been and/or will be funded by UTCFC. Unless explicitly included under this Task Order CSA work shall be excluded.

C.3.0 Description of Effort:

This Task Order encompasses FCPP system design improvements, as described in task item #1, which simplify the FCPP/vehicle interface, increasing FCPP self-sufficiency and self-protection, and improve overall performance. In addition, under this Task Order, UTCFC shall develop a FCPP installation and operation manual as described in task item #4. UTCFC shall also integrate, or have integrated, the FCPP breadboard fabricated in task item #7 under Task Order UTC-0001 Modification 02 ("FCPP Breadboard") into a UTCFC customer vehicle, and initiate durability demonstration of the FCPP in the field as described in task item #3. UTCFC shall collect FCPP performance and environmental data during vehicle field operation and perform data analysis as described in task items #2 and #5 under this Task Order. Finally, UTCFC shall perform specified "low cost CSA development", as described in task item #6 under this Task Order.

The task items for this Task Order are as follows:

- Task Item #1 - Power Converter Development
- Task Item #2 - FCPP/Vehicle Vibration Data Collection
- Task Item #3 - FCPP Breadboard/Vehicle Integration
- Task Item #4 - FCPP Installation and Operation Manual
- Task Item #5 - FCPP Data Collection and Analysis
- Task Item #6 - Low Cost CSA Development - 20-Cell Testing of CSA

Also included in this proposal is the effort for Program Tracking and Control for monitoring all task items and deliverables under this task order and monthly status reports.

C.3.1 Task Item #1 - Power Converter Development

The contractor shall develop and test a custom power converter that will convert the unregulated output voltage of the FCPP to a regulated high voltage to directly feed the high voltage components of the FCPP. The converter will facilitate the 120kW FCPP operation using a single 24 VDC low voltage supply. It is anticipated that this will simplify the FCPP/vehicle interface and that the power converter will improve the FCPP's self-sufficiency/self-sustainability and will simplify vehicle integration. This task includes the following activities:

- C.3.1.1 Design of the Power Converter Unit ("PCU")
- C.3.1.2 Fabrication and testing of the PCU at the component level
- C.3.1.3 Fabrication, testing and integration of the PCU into the FCPP Breadboard

C.3.2 Task Item #2 - FCPP/Vehicle Vibration Data Collection

The contractor shall collect vibration data from the FCPP Breadboard, which will be installed and operated in a 40-foot transit bus that is operated by one of UTCFC's customers. This data will be analyzed and used to develop vibration profiles that can, in turn, be used to run accelerated life testing in future transportation programs. Activities relating to the vibration data collection consist of:

- C.3.2.1 Installing instrumentation (accelerometers) on the FCPP/vehicle for data collection
- C.3.2.2 Recording the vibration information during operation of the vehicle under real world operating conditions
- C.3.2.3 Analyzing the data that was recorded and evaluating the impact of the actual vibration profiles versus the design specification

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C.3.3 Task Item #3 - FCPP Breadboard/Vehicle Integration

The contractor shall integrate and operate the FCPP Breadboard in a 40-foot transit bus that is operated by one of UTCFC's customers. UTCFC will perform the following activities under this task item:

- C.3.3.1 Inspection and verification that all FCPP/vehicle interfaces comply with interface requirements
- C.3.3.2 Installation of the FCPP into the vehicle
- C.3.3.3 Verification of proper operation of vehicle/FCPP communications
- C.3.3.4 Road operation of the vehicle under various road conditions

C.3.4 Task Item #4 - FCPP Installation and Operation Manual

The contractor shall draft an installation and operation manual for the installation of a 120 kW FCPP into a vehicle. The manual content shall include: FCPP description, installation and operation instructions, procedures for routine maintenance items, FCPP transportation and storage instructions, and general safety information regarding FCPP handling.

C.3.5 Task Item #5 - FCPP Data Collection and Analysis

The contractor shall establish and analyze a database of FCPP data collected during the operation of buses operating with the 120 kW FCPP. The data to be collected and analyzed include: FCPP start/stops, hours of operation, FCPP performance characteristics including voltage and current, ambient temperature data, FCPP event history such as sensor faults or warnings, as well as information on component failures.

C.3.6 Task Item #6 - Low Cost CSA Development - 20-Cell Testing of CSA

The contractor shall perform the tasks specified in this task item #6 in support of low cost CSA development. UTCFC's activities under this task item will consist of:

C.3.6.1 UTCFC shall procure the material required for, and will fabricate, two (2) 20-cell test articles using low cost technology material, including the provision of manufacturing and engineering support for the assembly of the hardware. See section 5.0 for treatment of hardware procured and/or fabricated under this Task Order.

C.3.6.2 UTCFC shall create the test plans to support the testing of the 20-cell test articles.

C.3.6.3 UTCFC shall also conduct testing (and related engineering support) of 20-cell test articles pursuant to the completed test plan to verify conceptual and final design. Such testing will include:

- (i) Acceptance test
- (ii) Endurance test
- (iii) Accelerated testing (testing under cyclic load conditions)

C.4.0 Deliverables

The contractor shall provide the following deliverables under this task order:

C.4.1 Submit the Final Technical Report summarizing all work performed under this Task Order is due thirty (30) days after completion of the Task Order. The Final Technical Report shall summarize the work performed on each individual task item.

C.4.2 Submit the Monthly Performance and Cost Reports on work in progress. This report is due on the 15th of each month for the previous month's progress. Progress under all current Task Orders may be consolidated in one monthly report pursuant to Section C.3.1 of the Contract.

C.4.3 Submit a manual for installation and operation of a 120kW FCPP in a vehicle. This manual shall be delivered with the Final Technical Report.

C.4.4 Provide a non-functioning fuel cell display of a single cell to 20 cell configuration for display purposes only (which may not be inspected, disassembled, reverse engineered or otherwise altered following delivery) by the completion date of this task order.

C.4.5 Provide a non-proprietary video (minimum of 3 minutes) verifying successful integration of the FCPP into a vehicle by the completion date of this task order.

C.5.0 Additional Terms and Notes:

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C.5.1 UTCFC will provide no proprietary data (including data relating to the CSA or CSA technology) under this Task Order. All data provided hereunder shall be subject to the confidentiality and use requirements set forth in the Contract. UTCFC will deliver no software or technical data or documentation relating to software under this Task Order.

C.5.2 (RESERVED)

C.5.3 UTCFC may, during the term of this Task Order and during the term of any concurrent Task Order, use the hardware, equipment, tooling and/or other materials procured or fabricated under this Task Order that qualifies as "Government property" under FAR 52.245-5 (Deviation, per DAR Tracking Number 99-00008, 13 July 99) (the "Property" or the "Government Property") for any of the purposes set forth herein or in any other concurrent Task Order issued under Contract DAAE07-03-D-L001.

C.5.4 TACOM and UTCFC agree that, upon the loss or destruction of, or damage to, any of the Property during its use under this Task Order or another Task Order issued under the Contract, TACOM and UTCFC shall agree upon a plan to repair or renovate the Property so damaged (if the parties determine that this is feasible). In the event that repair or renovation is undertaken, UTCFC shall be entitled to the equitable adjustment described in paragraphs (g)(6) and (h) of the above-referenced FAR provision, subject to the exclusions set forth in such provision. If the parties determine that repair or renovation of such Property is not feasible, the parties will negotiate the disposal or disposition of such Property, taking into account the circumstances under which the destruction or damage occurred, and also taking account of both (i) the Government's financial contribution to such Property, as well as (ii) UTCFC's interest in proprietary items, components, or processes that may be contained or embodied in such Property.

C.5.5 Upon completion of work on this Task Order, TACOM will review the Property in existence at that time, and determine a plan for subsequent use of such Property during the remainder of the period of performance of Contract DAAE07-03-D-L001. Such Property left in the possession of UTCFC will be added to the list of Government Property in possession of UTCFC under the Contract. UTCFC may request, in writing no later than three (3) weeks before proposed use, that any specific item(s) of such Property left in place at UTCFC be approved for UTCFC use outside of the Contract and/or in support of concurrent or subsequent Task Orders issued under the Contract. The Contracting Officer shall respond to such request within two (2) weeks of its receipt of UTCFC's request (agreement to such request shall not be unreasonably withheld). If the Contracting Officer rejects such request, the Contracting Officer shall provide reasons for such rejection.

C.5.6 In addition, with respect to Government Property that UTCFC would like to use for its own purposes during the duration of one or more Task Orders under the Contract, UTCFC and TACOM shall follow the request process specified in paragraph 5.3 as well as the procedures in paragraph 5.7.

C.5.7 With respect to any Government Property, described in paragraphs 5.5 and 5.6, above, UTCFC may be authorized to use such Property for its own purposes (that is, for development or other tasks outside of the Contract, for purposes not covered by this or any subsequent Task Order issued under the Contract), subject to the following;

(1) That UTCFC shall, in the case of each such proposed usage, submit to the contracting officer a written request for permission to use such Government Property. Each request must--

(i) identify the Government Property in question,

(ii) specify the period of time covered by the request, and

(iii) detail what use UTCFC plans to make of such Government Property, as well as the anticipated results or benefits from such use. Further, if a known or planned subsequent Task Order under the Contract also will involve use of such Government Property, then UTCFC also will--

(iv) specify in its request how it will ensure that its requested use will not interfere with the anticipated use per the Government Task Order.

If the contracting officer approves the request in writing, then UTCFC may use the specified Government Property as per its request, subject to subparagraphs (2) through (6) below.

(2) That any such use will (i) occur at no direct or indirect cost to the Government; and (ii) be permitted only on a strict non-interference basis, under which UTCFC's use of such Government Property will not interfere with, delay, or take precedence over any work covered by any Task Order issued under the Contract, that explicitly or implicitly requires or involves the use of such Government Property.

(3) That in the event UTCFC conducts any teardown of, or makes any modifications or configuration changes to such Government Property that impair or reduce the functionality of such Government Property below the performance levels attained by such Government Property as of the end of work under this Task Order, then UTCFC will, without cost to the Government, restore such Government Property to its full performance level, unless such teardown of, or modifications of configuration changes to the Government Property were authorized in accordance with section 5.7(1)(iii) hereof (in which case UTCFC will not be obligated to restore the Government Property).

(4) That UTCFC shall, without cost to the Government, rehabilitate such Government Property to eliminate the effects of any damage or, with respect to tooling only, wear, if any, that may occur during UTCFC's use of such Government Property pursuant to this paragraph 5.7.

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(5) That UTCFC shall provide to the Government reports that summarize the efforts and results relating to the use of such Government Property pursuant to this paragraph 5.7, on a periodic basis as specified in UTCFC's request (in no event less frequently than quarterly). Such reports may be made in a separate section of each Performance & Cost Report issued under the contract, for a period in which any such Government Property was in use by UTCFC pursuant to this paragraph 5.7. or, if there are no active Task Orders at the time of such use, UTCFC shall provide separate reports to the Government.

(6) That the Contracting Officer may terminate or modify any such approval to use Government Property, either directly by written notice, or constructively by the issuance of subsequent Task Orders that explicitly involve or that otherwise require the use of such Government Property; provided that constructive termination shall take effect only if UTCFC approved use outside the Contract will interfere with the anticipated use under such subsequent Task Order.

(7)(a) The parties anticipate that UTCFC will ultimately tear-down the Breadboard fabricated under Task Order UTC-0001, Modification 2 (including the components fabricated under Task Order UTC-0002) at UTCFC's facilities at the end of its useful life. The parties agree that UTCFC will dispose of the Power Plant components following tear-down and the Government's abandonment of such components and that UTCFC will provide to the Government a report relating to the findings from such tear-down.

(7)(b) Subject to UTCFC compliance with the requirements of paragraph 5.7., the parties agree that the Government may authorize UTCFC to use tooling and other equipment that qualifies as Government Property under the above-referenced FAR clause outside of the Contract for the production of hardware for delivery to domestic and international customers so long as, in the case of international customers, UTCFC complies with applicable export control regulations.

C.5.8 Inspection rights under this Task Order UTC-0003 shall consist of the following:

1. Verification of procurement of materials described in this Task Order.
2. Verification that specified materials have been assembled into the following units:
 - two (2) 20 cell test articles;
 - Power converter unit for use with the FCPP Breadboard
3. Verification that the above-referenced units function in accordance with the performance requirements.

*** END OF NARRATIVE C 001 ***

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Name of Offeror or Contractor: UTC FUEL CELLS, LLC

DELIVERIES OR PERFORMANCE

DELIVERIES OR PERFORMANCE

F.1 Delivery

F.1.1 All items (reports) called for in the Task Order shall be delivered electronically to the following addressees:

GedeonM@tacom.army.mil
Veselenp@tacom.army.mil

F.1.2 Delivery of Data as set forth in the Task order shall be in accordance with the Contract Data Requirements List, DD Form 1423.

F.2 Performance

F.2.1 The period of performance for this Task Order shall be from the date of award through to January 31, 2006, including submission of the final technical report.

F.2.2 The contractor shall submit monthly Performance & Cost Reports on the 15th day of each month under the Task order, beginning on 15 November 2004. Each Performance & Cost Report shall cover the work performed during the previous month. Any work performed during the last month of performance under the Task Order shall be covered in the Final Report.

F.2.3 The Contractor shall submit the Final Technical Report by the completion date for this task order, as listed in F.2.1.

*** END OF NARRATIVE F 001 ***

CONTINUATION SHEET

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Name of Offeror or Contractor: UTC FUEL CELLS, LLC

CONTRACT ADMINISTRATION DATA

LINE	PRON/ AMS CD/ ITEM	OBLG ACRN	STAT	ACCOUNTING CLASSIFICATION	JOB ORDER NUMBER	ACCOUNTING STATION	OBLIGATED AMOUNT	
0001AA	R342C414R3 622601T2611	AA	1	21 42040000046N6N7EP622601255Y S20113	42C414	W56HZV \$	968,714.00	
0002AA	R342C414R3 622601T2611	AA	1	21 42040000046N6N7EP622601255Y S20113	42C414	W56HZV \$	31,286.00	
TOTAL							\$	1,000,000.00

SERVICE NAME	TOTAL BY ACRN	ACCOUNTING CLASSIFICATION	ACCOUNTING STATION	OBLIGATED AMOUNT
Army	AA	21 42040000046N6N7EP622601255Y S20113	W56HZV	\$ 1,000,000.00
TOTAL				\$ 1,000,000.00