

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. Contract ID Code
Cost Plus Fixed Fee

Page 1 Of 8

2. Amendment/Modification No. P00003	3. Effective Date 2014JAN30	4. Requisition/Purchase Req No. SEE SCHEDULE	5. Project No. (If applicable)
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6. Issued By U.S. ARMY CONTRACTING COMMAND RACHEL HEANEY WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL EMAIL: RACHEL.HEANEY@US.ARMY.MIL	Code W56HZV	7. Administered By (If other than Item 6) DCMA BOSTON - AFCC 495 SUMMER STREET BOSTON MA 02210-2138	Code S2206A
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8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code) CHARLES RIVER ANALYTICS, INC. 625 MOUNT AUBURN ST STE 3 CAMBRIDGE, MA 02138-4555	<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-12-C-0049
	<input type="checkbox"/>	10B. Dated (See Item 13) 2012FEB21

Code 9W641 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 checked="" type="checkbox"/>	C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of:	FAR 43.202
<input type="checkbox"/>	D. Other (Specify type of modification and authority)	

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

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

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) LYNN M. BYRNE LYNN.M.BYRNE@US.ARMY.MIL (586)282-6553		
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 2014JAN30

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	PIIN/SIIN W56HZV-12-C-0049 MOD/AMD P00003	
Name of Offeror or Contractor: CHARLES RIVER ANALYTICS, INC.		

SECTION A - SUPPLEMENTAL INFORMATION

Buyer Name: RACHEL HEANEY
 Buyer Office Symbol/Telephone Number: CCTA-ASG-C/(586)282-9712
 Type of Contract: Cost Plus Fixed Fee
 Kind of Contract: Research and Development Contracts
 Type of Business: Other Small Business Performing in U.S.
 Surveillance Criticality Designator: C
 Weapon System: No Identified Army Weapons Systems

*** End of Narrative A0000 ***

MODIFICATION P00003

PREVIOUS OBLIGATED CONTRACT VALUE: \$738,299.51
 AMOUNT OF THIS ACTION: \$ 0.00
 TOTAL OBLIGATED CONTRACT VALUE: \$738,299.51

1. This modification P00003 to contract W56HZV-12-C-0049 is a bilateral supplemental agreement.
2. The purpose of this modification is to revise the Statement of Work language in Section C.2.1(p) and C.4.3, and extend the period of performance by six months at no additional cost to the Government.
3. As a result of this modification, the contract is revised as follows:

<u>Section</u>	<u>Revision</u>
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B CLIN 0001 completion date revised from 21-FEB-2014 to 22-AUG-2014.

C Paragraph C.2.1(p) is revised as follows:

REVISED FROM: "Demonstration: The dismounted operator following system shall be installed on a Government UGV provided that a suitable UGV is made available as Government Furnished Equipment (GFE) at least one month in advance of the demonstration. In the event that a Government UGV is not provided, the contractor shall install the system on a UGV of its choosing, which is capable of demonstrating the performance requirements in C.2.1 (a-o). Those performance requirement capabilities shall then be demonstrated."

REVISED TO: "Demonstration: The dismounted operator following system shall be installed on a Government UGV, located at TARDEC, for demonstration of the performance requirements in C.2.1(a-o), provided that a suitable Government UGV is made available at TARDEC at least one month in advance of the demonstration. The date and time for installation at TARDEC shall be mutually agreed upon between the COR and the contractor, but in any event, not later than 21 July 2014. In the event that a Government UGV is not provided, the contractor shall install the system on a UGV of its choosing, which is capable of demonstrating the performance requirements in C.2.1(a-o). Upon completion of the installation, those performance requirement capabilities in C.2.1(a-o) shall then be demonstrated."

C Paragraph C.4.3, the first sentence is revised to remove the reference to the Government vehicle being made available "as GFE" at least one month prior to the end of the contract.

F Paragraph F.1.1 is revised to extend the completion date from 21 FEB 2014 to 22 AUG 2014.

J CDRLs A001 through A003 are revised to update the contract specialist from Marty Lynch to Rachel Heaney.

4. There is no funding associated with this modification. Therefore, the obligated amount of the contract remains unchanged at \$738,299.51

5. Except as specifically stated above, all other terms and conditions of contract W56HZV-12-C-0049 remain unchanged and in full force and effect.

*** END OF NARRATIVE A0003 ***

CONTINUATION SHEET

Reference No. of Document Being Continued
 PIIN/SIIN W56HZV-12-C-0049 MOD/AMD P00003

Name of Offeror or Contractor: CHARLES RIVER ANALYTICS, INC.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT						
0001	<p>SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS</p> <p><u>SERVICES LINE ITEM</u></p> <p>SERVICE REQUESTED: 2010.2(C) PH II STTR CLIN CONTRACT TYPE: Cost Plus Fixed Fee</p> <p>The contractor shall furnish all the supplies and services to accomplish the tasks specified in Section C - Description/Specification/Work Statement.</p> <p>Est. Cost: \$686,789.51* Fixed Fee: \$ 51,510.00 Total Amount: \$738,299.51*</p> <p>*Amount corrected by Mod P00003 to accurately reflect obligated amount.</p> <p>CLIN performance completion date revised by Mod P00003</p> <p>(End of narrative B001)</p> <p><u>Inspection and Acceptance</u> INSPECTION: Destination ACCEPTANCE: Destination</p> <p><u>Deliveries or Performance</u></p> <table border="0"> <tr> <td>DLVR SCH</td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>22-AUG-2014</td> </tr> </table> <p style="text-align: right;">\$ 738,299.51</p>	DLVR SCH	PERF COMPL	<u>REL CD</u>	<u>DATE</u>	001	22-AUG-2014	1	LO	Estimated Cost Fixed Fee Not to Exceed (Funding)	\$ 686,789.51 \$ 51,510.00 \$ 738,299.51
DLVR SCH	PERF COMPL										
<u>REL CD</u>	<u>DATE</u>										
001	22-AUG-2014										
000101	<p><u>SERVICES LINE ITEM</u></p> <p>PRON: R312C111R3 PRON AMD: 01 ACRN: AA AMS CD: 66550286100 (AMOUNT: \$ 374,986.00)</p>										
000102	<p><u>SERVICES LINE ITEM</u></p> <p>PRON: R322C226R3 PRON AMD: 03 ACRN: AB AMS CD: 665502861</p>										

CONTINUATION SHEET

Reference No. of Document Being Continued
PIIN/SIN W56HZV-12-C-0049 **MOD/AMD** P00003

Name of Offeror or Contractor: CHARLES RIVER ANALYTICS, INC.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	(AMOUNT: \$ 363,313.51)				

Name of Offeror or Contractor: CHARLES RIVER ANALYTICS, INC.

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

STATEMENT OF WORK

C.1. Introduction

C.1.1. The Contractor, acting as an independent contractor and not as an agent of the Government, shall provide the necessary personnel, facilities, materials and services to complete the efforts described in this SBIR Phase II Statement of Work.

C.1.2. In the Phase I effort (W56HZV-10-C-0442), the Contractor developed and demonstrated an algorithm for tracking and following a dismounted operator. In Phase II, the Contractor will further research, develop and deliver a prototype system that will allow an unmanned ground vehicle (UGV) to follow a dismounted operator and recognize their hand gestures.

C.2. Research and Development Requirements

C.2.1. The Contractor shall research, develop and deliver a hardware and software system that allows an unmanned ground vehicle to follow a dismounted operator and recognize his or her hand gestures; the hardware and software system shall have the following characteristics and performance capabilities:

- a) Sensors: The system shall use passive cameras for sensing.
- b) Communications: The system shall not require any electromagnetic radiation communications with the operator.
- c) Initialization: The system shall learn the appearance of the operator in less than 60 seconds of training.
- d) Operator Clothing/Fiducials: The system shall not require special clothing or the placement of fiducial symbols on the operator.
- e) Environments: The system shall operate in both indoor and outdoor environments.
- f) Variable Lighting: The system shall be capable of operating in the presence of different lighting conditions including: full sunlight, overcast, low light (> 10 Lux), and dappled lighting.
- g) Operating Speed: The system shall be capable of tracking and following the operator when the operator is running at 15 Kph.
- h) Operating Distance: The system shall be capable of tracking and following the operator from a distance of 50 meters.
- i) Path Following: The system shall be capable of both driving directly towards the operator and following the operators path.
- j) Occlusions: The system shall be capable of re-acquiring the operator after the operator has been occluded for up to 5 seconds, except for occlusion by similar looking objects.
- k) Similar Objects: The system shall be capable of tracking and following the operator in the presence of other similar looking objects, including other people, and shall be capable of re-acquiring the operator after the operator has been occluded for up to 2 seconds by a similar looking object.
- l) Operator Orientation: The system shall be capable of tracking and following the operator when viewed from all sides.
- m) Operator Shape Deformation: The system shall be capable of tracking and following the operator when the operator is walking, running and crouched.
- n) Gesture Recognition: The system shall be capable of recognizing gestures from the operator, at distances up to 50 meters, including: follow me, come to me, stop, go, closer, further, faster, slower.
- o) Vehicle Following: The system shall also be capable of following a designated vehicle, with the same characteristics and performance capabilities as for the dismounted human leader/operator in C.2.1 (b)-(l). For vehicle following, electromagnetic radiation communications are permitted only for replicating the gesture recognition commands in C.2.1 (n).
- p) Demonstration: The dismounted operator following system shall be installed on a Government UGV, located at TARDEC, for demonstration of the performance requirements in C.2.1(a-o), provided that a suitable Government UGV is made available at TARDEC at least one month in advance of the demonstration. The date and time for installation at TARDEC shall be mutually agreed upon between the COR and the contractor, but in any event, not later than 21 July 2014. In the event that a Government UGV is not provided, the contractor shall install the system on a UGV of its choosing, which is capable of demonstrating the performance requirements in C.2.1(a-o). Upon completion of the installation, those performance requirement capabilities in C.2.1(a-o) shall then be demonstrated.*

C.3. Meetings

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Name of Offeror or Contractor: CHARLES RIVER ANALYTICS, INC.		

C.3.1. The Contractor shall plan and conduct a one (1) day kickoff meeting to be held at TARDEC within thirty (30) days after contract award. The Contractor shall contact the COR a minimum of two (2) weeks in advance to coordinate the meeting. At the meeting, the contractor shall explain its intended approach for accomplishing the contract SOW.

C.3.2. Interim Progress Review

C.3.2.1 The Contractor shall plan and conduct one (1) interim progress review (IPR) meeting, which shall be held at TARDEC twelve (12) months after contract award. In the event that circumstances warrant, the COR and the Contractor may agree to an alternate location. In order to reduce travel costs, the Contractor shall coordinate with TARDEC the aforementioned meetings with other required meetings. At the meeting, the contractor shall describe its progress to date on the contract SOW and its plans for completing the contract SOW.

C.3.2.2. The Contractor shall contact the COR a minimum of two (2) weeks in advance to coordinate the meeting. At a minimum, the Contractor shall also invite the Procuring Contracting Officer (PCO) and the Contract Specialist listed on page (1) one of the contract and the Administrative Contracting Officer (ACO) listed in Section G of the contract.

C.3.3. Final Meeting and Demonstration

C.3.3.1 The Contractor shall plan and conduct the final meeting and a software/hardware demonstration, which shall be held at TARDEC. The meeting shall include a demonstration that the system is capable of all performance specifications described in Sections C.2.

C.3.3.2 The Contractor shall contact the COR a minimum of two (2) weeks in advance to coordinate the meeting. At a minimum, the Contractor shall also invite the Procuring Contracting Officer (PCO) and the Contract Specialist listed on page (1) one of the contract and the Administrative Contracting Officer (ACO) listed in Section G of the contract

C.4. Deliverables

C.4.1. The Contractor shall submit bimonthly (every two months) progress reports in accordance with CDRL item A001. The first bimonthly progress report is due sixty (60) days after contract award.

C.4.2. The Contractor shall prepare and submit a draft and final technical report addressing all the technical information concerning the dismounted operator following system, described in Section C.2, in accordance with CDRL item A002. The report shall include the results of all tests performed on the system, technical specifications, interfaces, and diagrams of all components of the system, and instructions detailing the operation of all delivered software and hardware. The Contractor shall submit the draft technical report twenty-three (23) months after contract award. The COR has fourteen (14) days after receipt of the draft to review and comment. The Contractor shall deliver the final technical report fourteen (14) days after receipt of draft comments.

C.4.3. At the end of the contract, the Contractor shall deliver to the COR the prototype system, integrated into a Government vehicle, both hardware and software, as described in Section C.2, provided that the Government vehicle is made available *at least one month prior to the end of the contract. The delivered system shall be capable of all functions that are described in Section C.2. If a Government vehicle is not provided at least one month prior to the end of the contract, the hardware and software shall be delivered to the Government, but not integrated into a Government vehicle.

C.4.4. The Contractor shall deliver a draft and final SBIR Phase II Research and Development (R&D) Project Summary in accordance with CDRL Data Item A003. The Contractor shall reference the tailored DID DI-MISC-81612A.

*Revised by Modification P00003

*** END OF NARRATIVE C0001 ***

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SECTION F - DELIVERIES OR PERFORMANCE

F.1 PERIOD OF PERFORMANCE

F.1.1 All effort required under this contract, including delivery of the final technical report, shall be completed by 22 AUG 2014*.

F.1.2 If there is any conflict between Section B and Section F of this contract, Section F will prevail.

F.2 DATA DELIVERABLES

F.2.1 Delivery of data set forth in the contract shall be in accordance with the Contract Data Requirements List, DD Form 1423.

F.3 MATERIAL/HARDWARE DELIVERABLES

F.3.1 All materials/hardware required to be delivered under the contract shall be delivered FOB Destination to the following address:

US Army TARDEC
ATTN: Robert Karlsen, RDTA-RS, MS 264
6501 E. 11 Mile Rd.
Warren, MI 48397-5000

*Revised by Modification P00003

*** END OF NARRATIVE F0001 ***

CONTINUATION SHEET

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Name of Offeror or Contractor: CHARLES RIVER ANALYTICS, INC.

SECTION J - LIST OF ATTACHMENTS

<u>List of</u> <u>Addenda</u>	<u>Title</u>	<u>Date</u>	<u>Number</u> <u>of Pages</u>	<u>Transmitted By</u>
Exhibit A	CONTRACT DATA REQUIREMENTS LIST (CDRL)	22-JAN-2014	004	

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE:

- 1. DATA ITEM NO.....: A003
- 2. TITLE OF DATA ITEM.: Research and Development (R&D) Project Summary
- 3. SUBTITLE.....:
- 4. AUTHORITY.....: DI-MISC-81612A(T)
- 5. CONTRACT REFERENCE.: Section C.4.4
- 6. REQUIRING OFFICE...: RDTA-RS
- 7. DD250 REQ.....:
- 8. APP CODE.....:
- 9. DIST. STATEMENT REQUIRED.:
- 10. FREQUENCY.....: See Block 16
- 11. AS OF DATE.....: See Block 16
- 12. DATE OF FIRST SUB.: See Block 16
- 13. DATE OF SUBS. SUB.: See Block 16

14. DISTRIBUTION A. ADDRESSEES B. COPIES: DRAFT FINAL
In distributing the electronic report, according to the schedule in Block 16 below, the Contractor shall deliver one (1) copy to the Government personnel listed below:

Robert Karlsen, Contracting Officer's Representative (COR), E-mail: robert.e.karlsen.civ@mail.mil

Rachel Heaney, Contract Specialist, E-Mail: rachel.r.heaney2.civ@mail.mil

paul Sullivan, Administrative Contracting Officer (ACO), E-mail: paul.sullivan@dcma.mil@mail.mil

15. TOTAL:

16. REMARKS:

a. The contractor must submit a publicly releasable SBIR Phase II R&D Project Summary at the end of contract. The summary is an unclassified, non-sensitive, and non-proprietary summation of results that is intended for public viewing on the Army SBIR / STTR Small Business Portal. It should address the Data Item requirements on a summary basis and must not exceed 700 words.

Since the Department of Defense (DOD) will be publishing the summary, it must not contain any proprietary, classified, or ITAR restricted data. The summary must be submitted electronically and be in HTML format.

b. The Contractor shall deliver one (1) draft "SBIR Phase II R&D Project Summary" twenty-three (23) months after contract award. The COR shall review the draft project summary and return it to the Contractor within fifteen (15) days of receipt with comments. The Contractor shall submit one (1) final "SBIR Phase II R&D Project Summary" within fifteen (15) days after receipt of draft comments (24 months after contract award).

Note Tailoring: DID DI-MISC-81612A is tailored by deleting the underlined text as noted in Attachment 002 to the contract.

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE :

***** THE FOLLOWING INSTRUCTION APPLIES TO ALL REPORTS DELIVERABLE UNDER THE CONTRACT *****

Prepare the reports in Contractor format. Submit the reports using any of the following electronic formats:

- (1) Files readable using these Microsoft* Office XP or Microsoft* Office 2002 & lower Products: Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print or scan images of spreadsheets are not acceptable. Please see security note below for caution regarding use of macros.
- (2) Files in Adobe PDF (Portable Document Format). When scanning documents, scanner should be set to 200 dots per inch.
- (3) Files in HTML (Hypertext Markup Language) Format. HTML documents must not contain active links to Internet websites or web pages for reference information. All linked information must be contained within your electronic report, and be accessible offline.
- (4) Other electronic formats. Before preparing your report in any other electronic format, please e-mail the COR, with an e-mail copy-furnished to amsta-idg@tacom.army.mil, to obtain a decision as to the format's acceptability. This e-mail must be received by the COR not later than ten (10) calendar days before the draft report's due date. All alternate methods must be at no cost to the Government.
- (5) Please note that we can no longer accept .zip files due to increasing security concerns.

NOTE. Macros: The virus scanning software used by our e-mail systems cannot always distinguish a macro from a virus. Therefore, sending a macro embedded in an e-mail message or an e-mail attachment may cause the e-mail report to be quarantined.

Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, another acceptable media is a 650 megabyte CD ROM. Identify the software application and version used to create each file submitted.

- (1) E-MAIL. Maximum size of each e-mail message shall be three and one-half (3.5) megabytes. Previously "zipped" files were accepted, but due to security concerns these zipped attachments cannot be received through our mail system. You may use multiple e-mail messages if necessary, however, you must annotate the subject lines in this manner: "Message 1 of 3, 2 of 3, 3 of 3."
- (2) 650 MEGABYTE CD ROM to be delivered via U.S. Mail or other carrier. The Contractor shall label all submitted disks with the Contract number, the Contractor's name and address, and a contact's phone number. Exterior mailing envelopes containing disks must be addressed to the following address:

U.S. Army TARDEC
Robert Karlsen
RDTA-RS/MS 264
6501 East 11 Mile Road
Warren, MI 48397-5000

NOTE: Please select only one type of electronic media to transmit each report. For instance, do not submit a report via e-mail and CD-ROM.

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