

**AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT**1. Contract ID Code  
Firm Fixed Price

Page 1 Of 10

2. Amendment/Modification No.

P00003

3. Effective Date

2014APR02

4. Requisition/Purchase Req No.

SEE SCHEDULE

5. Project No. (If applicable)

6. Issued By

U.S. ARMY CONTRACTING COMMAND  
JAMES J. GIACCHINA  
WARREN, MICHIGAN 48397-5000  
HTTP://CONTRACTING.TACOM.ARMY.MIL

Code

W56HZV

7. Administered By (If other than Item 6)

DCMA MUNITIONS & SUPPORT SYSTEMS -  
SPRINGFIELD  
BLDG 93, ARDEC  
PICATINNY NJ 07806-5000

Code

S3101A

EMAIL: JAMES.J.GIACCHINA@US.ARMY.MIL

8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code)

SPECTREX, INC  
218 LITTLE FALLS RD  
CEDAR GROVE, NJ 07009-1294

9A. Amendment Of Solicitation No.

9B. Dated (See Item 11)

10A. Modification Of Contract/Order No.

W56HZV-13-C-0156

10B. Dated (See Item 13)

2013JAN30

Code 66558

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.

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

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).

C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of:

Mutual Agreement by Both Parties

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)

JOHN M. HOPFNER  
JOHN.HOPFNER@US.ARMY.MIL (586)282-7359

15B. Contractor/Offeror

15C. Date Signed

16B. United States Of America

16C. Date Signed

(Signature of person authorized to sign)

By \_\_\_\_\_ /SIGNED/  
(Signature of Contracting Officer)

2014APR02

NSN 7540-01-152-8070

30-105-02

STANDARD FORM 30 (REV. 10-83)

PREVIOUS EDITIONS UNUSABLE

Prescribed by GSA FAR (48 CFR) 53.243

**CONTINUATION SHEET****Reference No. of Document Being Continued****Page 2 of 10**

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MOD/AMD P00003

**Name of Offeror or Contractor:** SPECTREX, INC

## SECTION A - SUPPLEMENTAL INFORMATION

Buyer Name: JAMES J. GIACCHINA  
Buyer Office Symbol/Telephone Number: CCTA-ASG-B/(586)282-9736  
Type of Contract: Firm Fixed Price  
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 NEGOTIATED AMOUNT OF BASE:	\$285,900.00
PREVIOUS NEGOTIATED AMOUNT OF OPTION 1:	\$ 49,250.00
NEGOTIATED AMOUNT THIS ACTION:	\$ 0.00
TOTAL NEGOTIATED CONTRACT VALUE INCLUDING ALL OPTIONS:	\$335,150.00

PREVIOUS OBLIGATED CONTRACT AMOUNT:	\$335,150.00
OBLIGATED AMOUNT THIS ACTION:	\$ 0.00
TOTAL OBLIGATED CONTRACT AMOUNT:	\$335,150.00

1. This is a bilateral modification, at no additional cost to the Government.
2. The purpose of Modification P00003 is to extend the performance completion date for the option effort.
3. As a result of this modification, the contract is modified as follows:

a) SECTION B

- i. SubCLIN 0002AA performance completion date is extended:

FROM: 30-MAR-2014

TO: 20-APR-2014

b) SECTION C

- i. Contract Section C.6.1.4 Option Quantities is revised:

FROM: If the Contracting Officer exercises the option in Section H of this contract, the contractor shall provide up to an additional fifty (50) prototype extinguishers developed under this effort, along with required service parts and special tools to TARDEC no later than six (6) months after the option exercise to support further testing and integration.

TO: If the Contracting Officer exercises the option in Section H of this contract, the contractor shall provide up to an additional fifty (50) prototype extinguishers developed under this effort, along with required service parts and special tools to TARDEC no later than 20-APR-2014 to support further testing and integration.

c) SECTION F

- i. Contract Section F.2.1 is revised:

FROM: The period of performance for Option 1 shall be completed within 6-months of exercise of the option.

TO: The period of performance for Option 1 shall be completed no later than 20-APR-2014.

4. As a result of Modification P00003, the total contract value is neither increased nor decreased.
5. Except as provided herein, all other terms and conditions remain unchanged.

\*\*\* END OF NARRATIVE A0003 \*\*\*

CONTINUATION SHEET

Reference No. of Document Being Continued  
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Name of Offeror or Contractor: SPECTREX, INC

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT						
0002AA	<p>SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS</p> <p><u>OPTION 1 - EXTINGUISHERS (EXERCISED)</u></p> <p>SERVICE REQUESTED: SPECTREX SERVICES                      CLIN CONTRACT TYPE:                      Firm Fixed Price                      PRON: R33JS86ER3 PRON AMD: 01 ACRN: AB                      AMS CD: 633005221</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>                      <u>QUANTITY</u>                      <u>DATE</u></td> <td></td> </tr> <tr> <td>001                                      1                                      20-APR-2014</td> <td></td> </tr> </table> <p style="text-align: right;">\$                      49,250.00</p>	DLVR SCH	PERF COMPL	<u>REL CD</u> <u>QUANTITY</u> <u>DATE</u>		001                                      1                                      20-APR-2014		1	LO		\$ 49,250.00
DLVR SCH	PERF COMPL										
<u>REL CD</u> <u>QUANTITY</u> <u>DATE</u>											
001                                      1                                      20-APR-2014											

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SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1 The contractor, as an independent contractor and not as an agent of the Government, shall provide the necessary qualified personnel, facilities, material, equipment and services to accomplish the tasks defined herein.

C.2 General. The contractor shall provide the technical expertise necessary to support the development (to include designing, testing, and delivery) of common fire extinguishers to be used in automatic fire extinguishing systems (AFES) for the crew compartments of U.S. Army ground vehicles. This effort is for the development of the extinguisher only. The goal of this effort is to reduce the initial procurement cost and minimize the life-cycle cost of the extinguishers. The ultimate purpose is to reduce the overall logistic footprint of the Army fire suppression capability, while increasing reliability without compromising performance.

C.3 RESERVED

C.4 Threshold requirements herein are indicated by (T); these indicate required minimum levels of performance. Objective requirements are indicated by (O); these indicate desired levels of performance.

C.5 Extinguisher and Component Requirements:

C.5.1 The primary mode of extinguisher discharge shall utilize an AFES supplied electrical signal as defined herein.

- a) Electrical discharge (T)
- b) Electrical discharge and the capability to discharge mechanically (O).

C.5.1.1 If a mechanical-discharge capability is incorporated, the mechanical release mechanism shall release the extinguishing agent in response to a force of greater than 10 to less than 26 pound-force applied over 0.25 inches of travel at the activation point of the extinguisher.

C.5.2 The extinguishers shall be in conformance with MIL-STD-1472 Human Engineering over a range including all soldiers from a 5th percentile female up to a 95th percentile male, where all soldiers within the range are wearing Nuclear-Biological-Chemical (NBC) and cold weather protective clothing.

C.5.2.1 Extinguisher configuration will, to the maximum extent possible, utilize commercial components that are currently available in the commercial market.

C.5.2.2 The extinguisher configuration shall ensure functionality, ease and safety of operation, and maintenance.

C.5.3 Production extinguishers may be single-use or refillable devices, and the valve and cylinder can be integrated or separable. If the valve and cylinder can be separated while the cylinder is charged, then the valve must be able to be installed onto the cylinder while it is mounted in its normal vehicle position.

C.5.4 All extinguishers designed, tested and delivered under this contract shall be charged.

- a) The extinguisher shall be charged with 6.0 +0.1/- 0.0 lbs of heptafluoropropane (HFC-227ea) with 0.6 lb +/-0.05 lbs of sodium bicarbonate based dry chemical (T).
- b) The extinguisher design shall be capable of being charged with 7.0 +0.1/- 0.0 lbs of bromotrifluoromethane (Halon 1301) with up to 1.2 lb +/-0.05 lbs of sodium bicarbonate based dry chemical (O).

C.5.4.1 Extinguisher valve configuration capability:

- a) Side discharge (T). The extinguisher dimensions and discharge geometry shall comply with Appendix I (Attachment 0001).
- b) Combined discharge, to include both side and bottom discharge (O). The extinguisher dimensions and discharge geometry shall comply with Appendix I and Appendix II (Attachment 0002).

C.5.4.2 If the heptafluoropropane-based extinguisher relies on a charge pressure to operate, then it shall be charged with nitrogen to 900+25/-0 psi at 70 degrees F plus at least 10 to 15 psi He trace gas.

C.5.5 All extinguishers or pressurized cylinders (per C.5.4 above) shall be equipped with a means to prevent accidental discharge during shipping, installation and maintenance. Anti-recoil devices, shorting plugs, and lock pins shall be provided on each delivered extinguisher or pressurized cylinder. All safety components that are removed or disassembled to enable vehicle installation shall be tethered to the cylinder or valve (T). Safety components shall be integral and non-removable (O). A warning label per drawing 12314504 (Attachment 0003) shall be affixed to the extinguisher or pressurized cylinder.

C.5.6 Pressurized extinguishers shall include a pressure gauge and a simple pressure switch (T), or a pressure gauge and temperature compensated pressure switch (TCPS) (O).

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C.5.6.1 The pressure switch shall be closed to indicate a properly charged cylinder or extinguisher and shall signal low pressure by indicating an open circuit when the pressure has dropped to 570-620 psi for the simple pressure switch.

C.5.6.2 If the TCPS is supplied, then the TCPS shall be closed to indicate a properly charged cylinder or extinguisher, and shall signal low pressure by indicating an open circuit when the pressure has dropped:

- a) 100 psig (T) below the pressure of a fully charged extinguisher at all temperatures between -25 degrees F and 130 degrees F;
- b) 75 psig (O) below the pressure of a fully charged extinguisher at all temperatures between -25 degrees F and 130 degrees F.

C.5.7 The leakage rate of the extinguisher or pressurized cylinder shall not exceed

- a) 0.1 ounce per year (equivalent to 10<sup>-6</sup> SCC He/sec) (T);
- b) 0.0 ounces per year (O).

C.5.8 If the extinguisher is re-usable, its refill capabilities and procedures shall be compatible with existing Army recharge equipment (NSN 4210-01-474-6206, TB 9-4210-245-50). Any adaptors shall be separately identified and available

C.5.9 Cylinders shall not require hydrostatic testing more frequently than every 12 years and shall be designed to remain in service indefinitely unless they are damaged or need to be refilled or recharged.

C.5.10 Extinguishers charged per C.5.4.a shall not weigh more than

- 23 lbs fully charged and operable (T),
- 18 lbs fully charged and operable (O).

C.5.11 Pressurized cylinders for all extinguishers shall meet all applicable Department of Transportation (DOT) requirements including CFR Title 49 Part 180 Subpart C and DOT Special Permits.

C.5.12 Pressurized cylinders for all extinguishers shall meet the non-shatterability requirements of MIL-DTL-7905 Cylinder, Steel, Compressed Gas, Non-Shatterable, Seamless, 1800 PSI and 2100 PSI.

C.5.13 Cylinders shall be marked and color coded in accordance with MIL-STD-101 Color Code for Pipelines and for Compressed Gas Cylinders.

C.5.13.1 The exterior surface of each pressurized cylinder for all extinguishers shall be primed with Chemical Agent Resistant Coating (CARC) per MIL-P-53022.

C.5.13.2 The exterior surface of each cylinder body for all extinguishers shall be painted red (no. 11136 or 11105) per FED-STD-595 over the CARC primer.

C.5.13.3 The exterior surface of each cylinder body for all extinguishers shall have two adjacent two inch wide bands applied to its circumference, colors per FED-STD-595, after the red topcoat has been applied per C.5.13.2. The band closest to the cylinder neck or valve shall be gray (no. 16187 or 26307) and the other band shall be black (no. 17038).

C.5.14 Safety.

C.5.14.1 Each extinguisher or pressurized cylinder shall be equipped with a safety relief device to vent internal pressure before it reaches a level that could cause damage to the extinguisher or injury to personnel. The relief device shall not activate at temperatures below 180 degrees F.

C.5.14.2 The discharge from the extinguisher shall result in a pressure of less than 20 psig at 5 inches and an acceleration of less than 8G averaged within 30 ms or less at 12 inches from the integrated extinguisher discharge outlet.

C.5.14.3 Impulse noise levels during extinguisher discharge shall be no more than 165 dB (T), 140 dB (O) measured 12 inches from the extinguisher discharge outlet.

C.5.14.4 The extinguisher or pressurized cylinder shall not discharge materials or items that could cause physical injury to crewmembers. The extinguisher shall not eject solid fragments larger than 300 microns in diameter under any circumstances.

C.5.15 The extinguisher shall begin to discharge within 10ms after receiving a releasing signal.

C.5.15.1 Within 200ms after receiving a releasing signal, the cylinder pressure shall be no greater than 36% of its initial level.

C.5.15.2 After discharge, the residual agent content shall not exceed 1.5% by weight of the initial charge. The residual pressure in the extinguisher shall not exceed the agent vapor pressure at all temperatures between -60 degrees F and 160 degrees F.

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- C.5.16 Electrical interfaces shall be via a MS3112E12-3PN or MS3470W12-3PN connector.
- C.5.17 Releasing Signal and Continuity Monitoring
  - C.5.17.1 Pin A. The extinguisher shall discharge when an activation signal with amplitude of between 16 and 30 volts, providing at least
    - a) 10A (T),
    - b) 3.5A (O),
 is received with respect to Pin B (Return) with a duration of at least 30ms .
  - C.5.17.2 The extinguisher shall be compatible with a continuity sensing signal between pins A and B that shall not exceed 5mA.
  - C.5.17.3 Pin B, Return
  - C.5.17.4 Pin C, Pressure monitor. When the cylinder is pressurized, the pressure switch shall be closed with respect to pin B and rated for at least 0.1 A.
  - C.5.18 The extinguisher shall be designed for high reliability. The Mean Time Between Failure (MTBF) for the extinguisher shall not be less than 100,000 hours. The MTBF for electrical and pyrotechnic components shall be calculated using MIL-HDBK-217F and available manufacturer reliability test data. The MTBF for mechanical assemblies shall be based on mechanical parts extracted from the Non-Electronics Parts Reliability Database (NPRD) available through the Reliability Information Analysis Center (.theriac.org). The supplier shall support the MTBF results with available field return data and a Design Failure Mode Effects Analysis (DFMEA) per SAE J1939. The supplier shall submit a report that describes the MTBF and DFMEA results.
  - C.5.19 The extinguishers shall function properly, evidence no deterioration and produce no inadvertent discharges during or after exposure to the following environments:
    - C.5.19.1 The extinguishers shall meet the environmental requirements of MIL-DTL-62547C (AT) Valve and Cylinder Assemblies, paragraph 3.7 inclusive of subparagraphs. Qualification by Similarity or Analysis is acceptable for Salt Fog, Fungus, Sand and Dust, and Humidity.
    - C.5.19.2 As part of environmental testing, or as an added test, the contractor shall demonstrate that the extinguisher does not thermally relieve at temperatures less than 180 degrees F.
    - C.5.19.3 The extinguisher shall not discharge or cause any electromagnetic interference (EMI) problems for other vehicle components or systems when tested in accordance with MIL-STD-461F Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment methods RE102, CS114, CS115, CS116, CE102, and RS103 and MIL-STD-464A Electromagnetic Environmental Effects, Requirements For Systems as applicable to Army ground platforms.
  - C.5.20 With respect to extinguisher mounting orientation
    - a)The extinguisher shall meet all performance requirements specified herein when mounted up to 30 degrees from vertical (T).
    - b) The performance of the extinguisher shall be insensitive to mounting orientation (O)
  - C.5.20.1 In all cases, the dry chemical shall discharge with or before the gaseous agent.
- C.6 Deliverables
  - C.6.1 Hardware
    - C.6.1.1 The contractor shall provide thirty-six (36) prototype extinguishers that represent a configuration that could be mass produced, to TARDEC no later than eight (8) months after contract award.
    - C.6.1.2 If refillable extinguishers are provided, service parts sufficient to support 36 discharges shall be included in the hardware delivery.
    - C.6.1.3 Special tools: Two (2) sets of all special tools required to service extinguishers and recover agents shall be provided. If extinguishers are refillable, the contractor shall also deliver two (2) sets of all special tools required to rebuild and recharge the extinguishers using standard Army refill equipment with the hardware delivery of C.6.1.1.
    - C.6.1.4 Option Quantities: If the Contracting Officer exercises the option in Section H of this contract, the contractor shall provide up to an additional fifty (50) prototype extinguishers developed under this effort, along with required service parts and special tools to TARDEC no later than 20-APR-2014 to support further testing and integration.
  - C.6.2 Reports: All required reports specified herein may be provided in the contractor's format in accordance with CDRL A001.
    - C.6.2.1 Maintenance Report: The contractor shall describe in detail required or recommended instructions for the following: a) periodic service, b) maintenance, and c)disposal. Any replacement parts required to service the extinguisher shall be available in kit form. If any parts have a service life, the contractor shall identify those parts and how they are to be serviced. If regular service is

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required, the contractor shall prepare and deliver a parts list and associated cost of required parts and recommended frequency of service over a 30 year period in accordance with CDRL A001. The contractor may propose that the extinguisher be replaced in lieu of performing maintenance actions and replacement of parts over a 30 year period.

C.6.2.2 The contractor shall submit a description, engineering drawing and estimated cost of any special tools or equipment that are required for installation, use and safe depressurization and agent recovery of any extinguisher furnished under this contract.

C.6.2.3 Monthly Status Reports. The contractor shall prepare and deliver monthly status reports in accordance with CDRL A002 every 30 days, until contract completion. The first report shall be delivered to the COR thirty (30) days after contract award.

C.6.2.4 The contractor shall provide hardware and instructions that allow the charge pressure to be safely bled-off independent of an AFES commanded discharge. The instructions shall include a procedure for recovering the gaseous agent.

C.6.2.5 Reserved

C.6.2.6 Life-Cycle Cost. The contractor shall submit an estimate of the life-cycle cost of their delivered product in accordance with DOD 500.4-M. The estimate should be clear and identify any assumptions made. The following should be used in developing the estimate:

C.6.2.6.1 Life-cycle costs shall be estimated for periods of service of 6, 11, 16, and 30 years. In the event the contractor's design exceeds a 30 year service life, the contractor shall also provide the life-cycle costs associated with the maximum year service life.

C.6.2.6.2 Estimated or actual procurement costs of extinguishers shall be provided based on purchases of 100 and 500 units per month.

C.6.2.6.3 Estimated or actual procurement cost of special equipment or tools shall be computed assuming one set is required for every 500 extinguisher units.

C.6.2.6.4 If regular service is required, the contractor shall prepare and deliver a parts list and associated cost of required parts and recommended frequency of service.

C.6.2.6.5 The cost of kits and/or components to support 2,000 discharges annually shall be provided.

C.6.2.6.6 If the contractor provides a rechargeable extinguisher then, in the event the extinguisher is removed from the vehicle, the contractor shall identify the labor hours required to perform regularly scheduled service and return the discharged extinguisher to serviceable condition.

C.6.2.7 Objectives Trade Study: The contractor shall submit a trade study in accordance with DOD 500.4-M and per CDRL A006, that addresses the feasibility and costs associated with meeting the objective requirements addressed herein and listed below:

Description	Section
Mechanical manual discharge	C.5.1
Halon 1301 Compatibility (agent)	C.5.4
Side / Bottom Discharge	C.5.4.1
Integrated Safety Device	C.5.5
TCPS	C.5.6
Weight	C.5.10
Impulse noise 140 dB	C.5.14.3
Activation signal 3.5 A	C.5.17.1
Orientation insensitivity	C.5.20

C.6.2.8 Cost Reduction Opportunities. The Government is interested in potential procurement and support cost reductions that may be possible through the deletion or modification of Threshold (T) requirements specified herein and an estimate of the associated savings for production volumes of 100 and 500 units per month. The description shall clearly identify trade-offs between cost, packaging, size and weight, reliability and performance.

C.6.2.9 The contractor shall provide the following final design data items within 300 days After Contract Award (ACA): an Interface Control Drawing (ICD), a 3-D model using Pro-E format, and a qualification test report that addresses the requirements outlined in the table below. The qualification test report shall include

- a)pressure versus time graphs (T)
- b)pressure versus time graphs and high-speed video (O)

covering the required discharge tests. A preliminary 3D model and ICD shall be submitted to the COR within 180 days ACA in accordance with CDRL A001.

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REQUIREMENT	SECTION	ICD	Qual Report
Ergonomics	5.2		X
Agent Mass	5.4	X	
Dimensions and Discharge Geometry	5.4.1	X	
Anti-recoil device and label(s)	5.5	X	
Pressure Gauge and Switch	5.6	X	
Leak Rate	5.7		X
Hydrostatic Test Requirement(s)	5.9	X	
DOT Markings	5.11	X	
Other markings	5.13	X	
Safety	5.14		X
Discharge characteristics	5.15		X
Electrical Interface	5.16	X	
Releasing signal and continuity monitor	5.17	X	
Environmental	5.19		X
Mounting requirements/limitations	5.20	X	

C.6.2.10 Preliminary installation, operation and maintenance manuals shall be delivered with the hardware.

C.6.2.11 Final versions of all reports, instructions and manuals shall be delivered within 90 days of hardware delivery.

C.7 Meetings/Reviews: All presentations for Government review will be submitted to the Government at least five (5) days prior to the meeting date.

C.7.1 Start of Work Meeting: The contractor shall conduct a Start of Work meeting within 30 days of contract award. The meeting will be held at the contractor's facility or may be conducted via telephone conferencing. The date and location/method of the meeting and agenda shall be coordinated between the contractor and the COR. In accordance with CDRL A003, the contractor shall present and deliver to the COR an overview of its entire contractual effort, including schedule, engineering, logistics planning, and risk management. In accordance with CDRL A004, the contractor shall submit minutes of the start of work meeting within 10 days after the meeting.

C.7.2 Preliminary Design Review (PDR): The contractor shall conduct a PDR meeting within 90 days of contract award. The meeting may be held at TARDEC or may be conducted via telephone conferencing. The date and location/method of the meeting and agenda shall be coordinated between the contractor and the COR. During the PDR, the contractor shall present the preliminary design concepts for COR approval, to determine if these items can proceed into detailed design and if the stated performance requirements can be met within cost and schedule. An updated risk assessment, program schedule (to include schedule drivers), production and life-cycle cost assessment, and any other system constraints shall be provided by the contractor and shall be addressed at this review. In accordance with CDRL A004, the contractor shall submit minutes of the PDR meeting within 10 days after the meeting.

C.7.3 Critical Design Review (CDR): The contractor shall conduct a CDR meeting within 180 days of Contract Award at the contractor's facility in accordance with the schedule in paragraph C.9. During the CDR, the contractor shall present the final designs for Government approval, to determine if these systems can proceed into final fabrication and if the stated performance requirements can be met within cost and schedule. An updated risk assessment, program schedule (to include schedule drivers), an updated cost assessment, and any other system constraints shall be provided by the contractor in accordance with A005, and shall be addressed at this review. In accordance with CDRL A004, the contractor shall submit minutes of the CDR meeting within 10 days after the meeting.

C.7.4 Technical/Program Reviews: During the course of this contract, engineering reviews between the parties may be required to assess program status, provide progress updates and resolve issues relating to development, testing, and other deliverables. Therefore, the contractor shall participate in electronic (telephone or web) conferences to discuss and resolve these issues. In accordance with CDRL A004, the contractor shall submit minutes of the technical/program reviews within 10 days after each review. A maximum of six (6) reviews shall be scheduled during the contract period of performance.

C.8 Program Plan: In accordance with CDRL A003, the contractor shall develop and submit to the COR a detailed Program Schedule prior to the start of work meeting. The Schedule shall be prepared in Microsoft Project unless another method is approved by the COR, and shall identify milestones (tests and deliveries) and the processes and parts required to effectively execute this program. The Schedule shall be consistent with the applicable deliveries identified and incorporate a budget and spending plan. All delivery dates for contractor reports and presentations shall be included in the schedule and this schedule shall be in agreement with the Program Milestones described in Section C.9. Contractor shall notify the government within five (5) days of any schedule slip longer than five (5) days. Any Program Schedule changes must be mutually agreed upon.

C.9 Schedule of Deliverables:

DESCRIPTION	SCHEDULE	SECTION
Meetings/Plans		
Program Plan	within 25 days	C.8

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Start of Work Meeting	within 30 days		C.7.1
PDR	within 90 days		C.7.2
CDR	within 180 days		C.7.3
Technical Program Reviews	as Required		C.7.4
<u>Studies/Reports/Manuals</u>	<u>Preliminary</u>	<u>Final</u>	
MTBF and DFMEA Report	within 180 days	within 300 days	C.5.18
Maintenance Procedures	within 180 days	within 300 days	C.6.2.1
Special Tools	within 180 days	within 300 days	C.6.2.2
Regular Service Parts	within 180 days	within 300 days	C.6.2.6.4
Agent Recovery	within 180 days	within 300 days	C.6.2.4
Recharging	within 180 days	within 300 days	C.6.2.5
Life Cycle Cost Analysis	within 180 days	within 300 days	C.6.2.6
Procurement Cost Reduction	within 180 days	within 300 days	C.6.2.8
Objective Trade Studies	within 180 days	within 300 days	C.6.2.7
Interface Control Drawing(s)	within 180 days	within 300 days	C.6.2.9
3-D model using Pro-E format	within 180 days	within 300 days	C.6.2.9
Qualification Test Report	within 360 days		C.6.2.9
<u>Hardware</u>			
Extinguishers	within 240 days		C.6.1.1
Service Parts	within 240 days		C.6.1.2
Special Tools	within 240 days		C.6.1.3

\* AFTER CONTRACT AWARD (ACA)

C.10 Information Security.

C.10.1 Public Disclosure of Information: Although this research effort is not classified, information about this effort is not generally releasable to the public. All information that the contractor may wish to disclose in any public forum (e.g. a press release, journal publication, company newsletter, etc.) must be sent to the COR to obtain approval prior to publication. The COR will coordinate and process the request for approval or disapproval through TARDEC's Operations Security (OPSEC) review process.

C.10.2 Distribution Statement: Every data item deliverable shall contain the following statement: "Distribution D: Distribution authorized to US DoD and US DoD contractors only. Other requests for this document shall be referred to: US Army RDECOM-TARDEC, ATTN: RDTA-RS, Mail Stop 263 (Eric Hahka), 6501 E. 11 Mile Road, Warren, MI 48397-5000."

C.10.3 Export Control Statement: Every data item deliverable shall contain the following statement: Technical data contained herein may be controlled for export by the US Department of State under the International Traffic in Arms Regulations (ITAR) (22 CFR 120-130) or by the Department of Commerce under the Export Administration Regulations (EAR) (Export Administration Act of 1979, as amended). It may not be exported or transferred to any foreign person either in the United States or abroad, or disclosed to a national of another country without the prior written approval of the US Department of State or Department of Commerce.

\*\*\* END OF NARRATIVE C0001 \*\*\*

**CONTINUATION SHEET****Reference No. of Document Being Continued****Page 10 of 10**

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**Name of Offeror or Contractor:** SPECTREX, INC

## SECTION F - DELIVERIES OR PERFORMANCE

## F.1 BASE EFFORT - PERFORMANCE SCHEDULE

F.1.1 The base period of performance for this Contract will be 12-months after Contract award.

## F.2 OPTION EFFORT - PERFORMANCE SCHEDULE

F.2.1 Unexercised Option 1, Additional fifty (50) prototype extinguishers. The period of performance for Option 1 shall be completed no later than 20-APR-2014.

F.3 Data Deliverables

F.3.1 Delivery of data set forth in the contract shall be in accordance with the Contract Data Requirements List (Exhibit A), DD Form 1423.

F.4 Material/Hardware Deliverables

F.4.1 All materials / hardware required to be delivered under the contract shall be delivered FOB Destination to the following address:

U.S. Army TACOM  
ATTN: Steve McCormick  
RDTA-RS, Mail Stop 263  
6501 E. 11 Mile Road  
Warren, MI 48397-5000

All shipments shall be coordinated with the COR prior to delivery.

\*\*\* END OF NARRATIVE F0001 \*\*\*