

<b>AWARD/CONTRACT</b>		<b>1. This Contract Is A Rated Order Under DPAS (15 CFR 700)</b>	<b>Rating</b> DOA4	<b>Page</b> 1	<b>Of</b> 43	<b>Pages</b>
<b>2. Contract (Proc. Inst. Ident.) No.</b> W56HZV-14-C-0052		<b>3. Effective Date</b> 2014FEB13	<b>4. Requisition/Purchase Request/Project No.</b> SEE SCHEDULE			
<b>5. Issued By</b> U.S. ARMY CONTRACTING COMMAND PATRICIA ROUSSIN WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL		<b>Code</b> W56HZV	<b>6. Administered By (If Other Than Item 5)</b> DCMA DETROIT 35803 MOUND ROAD STERLING HEIGHTS MI 48310		<b>Code</b> S2305A	

e-mail address: PATRICIA.M.ROUSSIN@US.ARMY.MIL

<b>7. Name And Address Of Contractor (No., Street, City, County, State and Zip Code)</b> QUANTUM SIGNAL, L.L.C. 200 N ANN ARBOR ST SALINE, MI 48176-1139		<b>8. Delivery</b> <input type="checkbox"/> FOB Origin <input checked="" type="checkbox"/> Other (See Below)	
		<b>9. Discount For Prompt Payment</b>	
<b>Code</b> IUSF8		<b>10. Submit Invoices (4 Copies Unless Otherwise Specified)</b>	
<b>Facility Code</b>		<b>Item</b> 12	
		<b>To The Address Shown In:</b>	

<b>11. Ship To/Mark For</b> SEE SCHEDULE		<b>Code</b>	<b>12. Payment Will Be Made By</b> DFAS-CO/NORTH ENTITLEMENT OPERATION P.O. BOX 182266 COLUMBUS OH 43218-2266		<b>Code</b> HQ0337
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<b>13. Authority For Using Other Than Full And Open Competition:</b> <input type="checkbox"/> 10 U.S.C. 2304(c)( ) <input type="checkbox"/> 41 U.S.C. 253(c)( )		<b>14. Accounting And Appropriation Data</b> SEE SECTION G			
<b>15A. Item No.</b> SEE SCHEDULE	<b>15B. Supplies/Services</b>	<b>15C. Quantity</b>	<b>15D. Unit</b>	<b>15E. Unit Price</b>	<b>15F. Amount</b>
<b>15G. Total Amount Of Contract</b> →					\$999,710.43

(X)	Sec.	Description	Page(s)	(X)	Sec.	Description	Page(s)
Part I - The Schedule				Part II - Contract Clauses			
X	A	Solicitation/Contract Form	1	X	I	Contract Clauses	29
X	B	Supplies or Services and Prices/Costs	3	Part III - List Of Documents, Exhibits, And Other Attachments			
X	C	Description/Specs./Work Statement	14	X	J	List of Attachments	43
X	D	Packaging and Marking	20	Part IV - Representations And Instructions			
X	E	Inspection and Acceptance	21		K	Representations, Certifications, and Other Statements of Offerors	
X	F	Deliveries or Performance	22		L	Instrs., Conds., and Notices to Offerors	
X	G	Contract Administration Data	23		M	Evaluation Factors for Award	
X	H	Special Contract Requirements	27				

**Contracting Officer Will Complete Item 17 (Sealed-Bid or Negotiated Procurement) Or 18 (Sealed-Bid Procurement) As Applicable**

<b>17.</b> <input checked="" type="checkbox"/> <b>Contractor's Negotiated Agreement</b> (Contractor is required to sign this document and return 2 signed copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)	<b>18.</b> <input type="checkbox"/> <b>Sealed-Bid Award</b> (Contractor is not required to sign this document.) Your bid on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your bid, and (b) this award/contract. No further contractual document is necessary. (Block 18 should be checked only when awarding a sealed-bid contract.)
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<b>19A. Name And Title Of Signer (Type Or Print)</b>		<b>20A. Name Of Contracting Officer</b>  LYNN M. BYRNE LYNN.M.BYRNE@US.ARMY.MIL (586)282-6553	
<b>19B. Name of Contractor</b>	<b>19c. Date Signed</b>	<b>20B. United States Of America</b>  By _____ /SIGNED/ (Signature of Contracting Officer)	<b>20C. Date Signed</b> 2014FEB13
By _____ (Signature of person authorized to sign)			

**CONTINUATION SHEET****Reference No. of Document Being Continued****Page 2 of 43****PIIN/SIIN** W56HZV-14-C-0052**MOD/AMD****Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

## SECTION A - SUPPLEMENTAL INFORMATION

Buyer Name: PATRICIA ROUSSIN  
Buyer Office Symbol/Telephone Number: CCTA-ASG-C/(586)282-9610  
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 \*\*\*

<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
A-1 52.201-4000	ARMY CONTRACTING COMMAND-WARREN (DTA) OMBUDSPERSON	APR/2011

Information regarding the Ombudsperson for this contract is located at the following website:  
<http://contracting.tacom.army.mil/acqinfo/ombudsperson.htm>

[End of Provision]

CONTINUATION SHEET

Reference No. of Document Being Continued  
 PIIN/SIIN W56HZV-14-C-0052 MOD/AMD

Name of Offeror or Contractor: QUANTUM SIGNAL, L.L.C.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT																																																																																
	SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS																																																																																				
0001	SBIR PH II - A12-073																																																																																				
0001AA	<p><u>MONTHLY STATUS REPORT</u></p> <p>SERVICE REQUESTED: SBIR PH II - A12-073                      CLIN CONTRACT TYPE:                      Firm Fixed Price                      PRON: R33SB042R3 PRON AMD: 01 ACRN: AA</p> <p>Monthly Status Reports shall be submitted describing the progress of the work, status of the program and of the assigned tasks, reports, costs, and will indicate existing or potential problem areas as referenced in Section C, paragraph C.4.1.1.</p> <p>(End of narrative B001)</p> <p><u>Packaging and Marking</u></p> <p><u>Inspection and Acceptance</u>                      INSPECTION: Destination ACCEPTANCE: Destination</p> <p><u>Deliveries or Performance</u></p> <table border="0"> <tr> <td>DOC</td> <td>SUPPL</td> <td></td> <td></td> <td></td> </tr> <tr> <td><u>REL CD</u></td> <td><u>MILSTRIP</u></td> <td><u>ADDR</u></td> <td><u>SIG CD</u></td> <td><u>MARK FOR</u></td> </tr> <tr> <td>001</td> <td></td> <td>000000</td> <td></td> <td>3</td> </tr> <tr> <td><u>DEL REL CD</u></td> <td><u>QUANTITY</u></td> <td></td> <td><u>DEL DATE</u></td> <td></td> </tr> <tr> <td>001</td> <td>1</td> <td></td> <td>14-MAR-2014</td> <td></td> </tr> <tr> <td>002</td> <td>1</td> <td></td> <td>14-APR-2014</td> <td></td> </tr> <tr> <td>003</td> <td>1</td> <td></td> <td>16-MAY-2014</td> <td></td> </tr> <tr> <td>004</td> <td>1</td> <td></td> <td>16-JUN-2014</td> <td></td> </tr> <tr> <td>005</td> <td>1</td> <td></td> <td>16-JUL-2014</td> <td></td> </tr> <tr> <td>006</td> <td>1</td> <td></td> <td>18-AUG-2014</td> <td></td> </tr> <tr> <td>007</td> <td>1</td> <td></td> <td>22-SEP-2014</td> <td></td> </tr> <tr> <td>008</td> <td>1</td> <td></td> <td>22-OCT-2014</td> <td></td> </tr> <tr> <td>009</td> <td>1</td> <td></td> <td>24-NOV-2014</td> <td></td> </tr> <tr> <td>010</td> <td>1</td> <td></td> <td>24-DEC-2014</td> <td></td> </tr> <tr> <td>011</td> <td>1</td> <td></td> <td>26-JAN-2015</td> <td></td> </tr> <tr> <td>012</td> <td>1</td> <td></td> <td>26-FEB-2015</td> <td></td> </tr> </table>	DOC	SUPPL				<u>REL CD</u>	<u>MILSTRIP</u>	<u>ADDR</u>	<u>SIG CD</u>	<u>MARK FOR</u>	001		000000		3	<u>DEL REL CD</u>	<u>QUANTITY</u>		<u>DEL DATE</u>		001	1		14-MAR-2014		002	1		14-APR-2014		003	1		16-MAY-2014		004	1		16-JUN-2014		005	1		16-JUL-2014		006	1		18-AUG-2014		007	1		22-SEP-2014		008	1		22-OCT-2014		009	1		24-NOV-2014		010	1		24-DEC-2014		011	1		26-JAN-2015		012	1		26-FEB-2015		12	EA	\$ 19,994.21000	\$ 239,930.52
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CONTINUATION SHEET

Reference No. of Document Being Continued  
 PIIN/SIIN W56HZV-14-C-0052 MOD/AMD

Name of Offeror or Contractor: QUANTUM SIGNAL, L.L.C.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT								
0001AB	<p>FOB POINT: Destination</p> <p>SHIP TO:                      (Y00000) SHIPPING INSTRUCTIONS FOR CONSIGNEE                      (SHIP-TO) WILL BE FURNISHED PRIOR                      TO THE SCHEDULED DELIVERY DATE FOR                      ITEMS REQUIRED UNDER THIS                      REQUISITION.</p> <p><u>DEMONSTRATION #1</u></p> <p>SERVICE REQUESTED: SBIR PH II - Quantum                      CLIN CONTRACT TYPE:                      Firm Fixed Price                      PRON: R33SB042R3 PRON AMD: 01 ACRN: AA</p> <p>Demonstration #1: Demonstration of initial version of                      user-friendly GUI for ANVEL-based predictive                      stability engine as stated in Section C, paragraphs                      C.5.1 through C.5.1.4.</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></td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>1</td> <td>16-MAY-2014</td> </tr> </table> <p>\$ 49,985.52</p>	DLVR SCH		PERF COMPL	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	1	16-MAY-2014	1	LO	\$ 49,985.52
DLVR SCH		PERF COMPL											
<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>											
001	1	16-MAY-2014											
0001AC	<p><u>DEMONSTRATION #2</u></p> <p>SERVICE REQUESTED: SBIR PH II - Quantum                      CLIN CONTRACT TYPE:                      Firm Fixed Price                      PRON: R33SB042R3 PRON AMD: 01 ACRN: AA</p> <p>Demonstration #2: Software Demonstration of an ANVEL-                      based predictive stability engine with a user-                      friendly GUI; demonstration of the ability to rapidly                      configure two distinct vehicles of interest, then                      accurately predict vehicle stability in real time as                      stated in Section C, paragraphs C.5.2 through                      C.5.2.4.</p> <p>(End of narrative B001)</p>	1	LO	\$ 59,982.63									

CONTINUATION SHEET

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 PIIN/SIIN W56HZV-14-C-0052 MOD/AMD

Name of Offeror or Contractor: QUANTUM SIGNAL, L.L.C.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	<p><u>Inspection and Acceptance</u>                      INSPECTION: Destination      ACCEPTANCE: Destination</p> <p><u>Deliveries or Performance</u>                      DLVR SCH      PERF COMPL  <u>REL CD</u>      <u>QUANTITY</u>      <u>DATE</u>                      001      1      18-AUG-2014</p> <p style="text-align: right;">\$      59,982.63</p>				
0001AD	<p><u>TECHNICAL REPORT #1</u></p> <p>SERVICE REQUESTED: SBIR PH II - Quantum                      CLIN CONTRACT TYPE:                      Firm Fixed Price                      PRON: R33SB042R3      PRON AMD: 01      ACRN: AA</p> <p>Technical Report #1: Technical Report describing approach to CG height estimation, including performance analysis on simulated data analytical description of the ANVEL-based predictive stability engine as stated in Section C, paragraph C.4.1.3.1.</p> <p style="text-align: center;">(End of narrative B001)</p> <p><u>Inspection and Acceptance</u>                      INSPECTION: Destination      ACCEPTANCE: Destination</p> <p><u>Deliveries or Performance</u>                      DLVR SCH      PERF COMPL  <u>REL CD</u>      <u>QUANTITY</u>      <u>DATE</u>                      001      1      24-NOV-2014</p> <p style="text-align: right;">\$      49,985.52</p>	1	LO		\$ 49,985.52
0001AE	<p><u>TECHNICAL REPORT #2</u></p> <p>SERVICE REQUESTED: SBIR PH II - Quantum                      CLIN CONTRACT TYPE:                      Firm Fixed Price                      PRON: R33SB042R3      PRON AMD: 01      ACRN: AA</p> <p>Technical Report #2: Technical Report describing approach to integrated vision/terrain friction estimation system, including performance analysis on simulated data as stated in Section C, paragraph C.4.1.3.2.</p> <p style="text-align: center;">(End of narrative B001)</p>	1	LO		\$ 49,985.52



CONTINUATION SHEET

Reference No. of Document Being Continued  
 PIIN/SIIN W56HZV-14-C-0052 MOD/AMD

Name of Offeror or Contractor: QUANTUM SIGNAL, L.L.C.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT									
	<p>Unit Indentification Code (UIC): W4GHAA</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></td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>1</td> <td>AS REQUIRED</td> </tr> </table>	DLVR SCH		PERF COMPL	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	1	AS REQUIRED				
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<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>												
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0004	<p><u>DATA ITEM: DD FORM 882 REPORT OF INVENTIONS</u></p> <p>SERVICE REQUESTED: DD FORM 882 REPORT OF INVENT.                      CLIN CONTRACT TYPE:                      Firm Fixed Price</p> <p>The contractor shall submit a Report of Inventions and Subcontracts, DD Form 882, within three (3) months after contract completion in accordance with Section I DFARS clause 252.227-7039. A copy of the form can be obtained at:</p> <p><a href="http://www.dtic.mil/whs/directives/infomgt/forms/eforms/dd0882.pdf">http://www.dtic.mil/whs/directives/infomgt/forms/eforms/dd0882.pdf</a></p> <p>This item(s) is not separately priced.</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></td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>1</td> <td>AS REQUIRED</td> </tr> </table>	DLVR SCH		PERF COMPL	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	1	AS REQUIRED	1	LO		
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<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>												
001	1	AS REQUIRED												
0005	SBIR PHASE II - QUANTUM													
0005AA	<u>MONTHLY STATUS REPORT - UNFUNDED</u>	12	LO		\$ 239,930.52									

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Reference No. of Document Being Continued  
 PIIN/SIIN W56HZV-14-C-0052 MOD/AMD

Name of Offeror or Contractor: QUANTUM SIGNAL, L.L.C.

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	SERVICE REQUESTED: SBIR PHASE II - QUANTUM CLIN CONTRACT TYPE: Firm Fixed Price  Monthly Status Reports shall be submitted describing the progress of the work, status of the program and of the assigned tasks, reports, costs, and will indicate existing or potential problem areas as referenced in Section C, paragraph C.4.1.1.  (End of narrative B001)  <u>Inspection and Acceptance</u> INSPECTION: Destination ACCEPTANCE: Destination  <u>Deliveries or Performance</u> DLVR SCH PERF COMPL <u>REL CD QUANTITY DATE</u> 001 1 26-MAR-2015  \$ 19,994.21  DLVR SCH PERF COMPL <u>REL CD QUANTITY DATE</u> 002 1 27-APR-2015  \$ 19,994.21  DLVR SCH PERF COMPL <u>REL CD QUANTITY DATE</u> 003 1 27-MAY-2015  \$ 19,994.21  DLVR SCH PERF COMPL <u>REL CD QUANTITY DATE</u> 004 1 29-JUN-2015  \$ 19,994.21  DLVR SCH PERF COMPL <u>REL CD QUANTITY DATE</u> 005 1 29-JUL-2015  \$ 19,994.21  DLVR SCH PERF COMPL <u>REL CD QUANTITY DATE</u> 006 1 31-AUG-2015  \$ 19,994.21  DLVR SCH PERF COMPL <u>REL CD QUANTITY DATE</u> 007 1 01-OCT-2015  \$ 19,994.21				



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001	1	31-AUG-2015																					
0005AD	<p><u>DEMONSTRATION #4 - UNFUNDED</u></p> <p>SERVICE REQUESTED: SBIR PH II - QUANTUM                      CLIN CONTRACT TYPE:                      Firm Fixed Price</p> <p>DEMONSTRATION #4: Experimental demonstration of software-only version of VSS+ system to be integrated into the Mule test vehicle as stated in Section C, paragraphs C.5.4 through C.5.4.4.</p> <p>(End of narrative B001)</p> <p><u>Inspection and Acceptance</u></p> <p>INSPECTION: Destination      ACCEPTANCE: Destination</p> <p><u>Deliveries or Performance</u></p> <table border="0"> <tr> <td>DLVR SCH</td> <td></td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> </table>	DLVR SCH		PERF COMPL	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	1	LO		\$ 59,982.63												
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0005AE	<p>001 1 02-NOV-2016</p> <p><u>DEMONSTRATION #5 - UNFUNDED</u></p> <p>SERVICE REQUESTED: SBIR PH II - QUANTUM                      CLIN CONTRACT TYPE:                      Firm Fixed Price</p> <p>DEMONSTRATION #5: Experimental demonstration of hardware/software version of the VSS+ system. The VSS+ system shall be fully integrated into the Kawasaki Mule test vehicle and tested. Demonstration of the VSS+ system's performance shall be conducted on the vehicle operating in an outdoor environment on two distinct terrain types (e.g. asphalt and dirt) as stated in Section C, paragraphs C.5.5 through C.5.5.4.</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></td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>1</td> <td>04-FEB-2016</td> </tr> </table>	DLVR SCH		PERF COMPL	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	1	04-FEB-2016	1	LO	\$	79,976.83
DLVR SCH		PERF COMPL												
<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>												
001	1	04-FEB-2016												
0005AF	<p>001 1 02-NOV-2016</p> <p><u>TECHNICAL REPORT #4 - UNFUNDED</u></p> <p>SERVICE REQUESTED: SBIR PH II - QUANTUM                      CLIN CONTRACT TYPE:                      Firm Fixed Price</p> <p>TECHNICAL REPORT #4: Comprehensive technical report of the entire development as stated in Section C, paragraph C.4.1.3.4.</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></td> <td>PERF COMPL</td> </tr> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>1</td> <td>04-MAR-2016</td> </tr> </table>	DLVR SCH		PERF COMPL	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	1	04-MAR-2016	1	LO	\$	49,985.49
DLVR SCH		PERF COMPL												
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001	1	04-MAR-2016												

**CONTINUATION SHEET****Reference No. of Document Being Continued****Page 12 of 43****PIIN/SIIN** W56HZV-14-C-0052**MOD/AMD****Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.**B.1 FUNDING**

B.1.1 The Government will provide funding under the contract to cover the designated milestone payments on an incremental basis, as stated in the funding schedule below in section B.2.

**B.2 FUNDING SCHEDULE**

<u>Milestone</u>	<u>Performance Period</u>	<u>Amount</u>
1 through 5	Award through 2/16/2015	\$449,869.71
6 through 11	2/17/2015 through 2/17/2016	\$549,840.72*

\*Milestones 6 through 11 will be funded for a total of \$549,840.72 after completion of Milestone 5 - twelve months and one day after date of contract award through completion.

Total contract value is \$999,710.43.

**B.3 FUNDS OBLIGATED**

B.3.1 The amount of funding currently obligated to this contract is \$449,869.71.

**B.4 CONTRACT LINE ITEMS (CLINs)**

B.4.1 CLINs 0001 through 0005 are established as performance milestone payments. The performance milestone payment schedule is summarized below in Section B.5 - Performance Milestone Schedule and is attached in full to this contract as "Attachment 0001".

**B.5 PERFORMANCE MILESTONE SCHEDULE**

MS1 - CLIN 0001AA is established for submittal of the monthly status reports as described in Section C, paragraph C.4.1.1. MS1/CLIN 0001AA is funded in the amount of \$239,930.52 to be paid incrementally as the reports are submitted in monthly allotments of \$19,994.21.

MS2 - CLIN 0001AB is established for Demonstration #1 as described in Section C, paragraphs C.5.1 through C.5.1.4. MS2/CLIN 0001AB is funded in the amount of \$49,985.52.

MS3 - CLIN 0001AC is established for Demonstration #2 as described in Section C, paragraphs C.5.2 through C.5.2.4. MS3/CLIN 0001AC is funded in the amount of \$59,982.63.

MS4 - CLIN 0001AD is established for submittal of Technical Report #1 as described in Section C, paragraph C.4.1.3.1. MS4/CLIN 0001AD is funded in the amount of \$49,985.52.

MS5 - CLIN 0001AE is established for submittal of Technical Report #2 as described in Section C, paragraph C.4.1.3.2. MS5/CLIN 0001AE is funded in the amount of \$49,985.52.

MS6 - CLIN 0005AA is established for submittal of the monthly status reports as described in Section C, paragraph C.4.1.1. MS6/CLIN 0005AA will be funded in the amount of \$239,930.52 to be paid incrementally as the reports are submitted in monthly allotments of \$19,994.21.

MS7 - CLIN 0005AB is established for Demonstration #3 as described in Section C, paragraphs C.5.3 through C.5.3.4. MS7/CLIN 0005AB will be funded in the amount of \$69,979.73.

MS8 - CLIN 0005AC is established for submittal of Technical Report #3 as described in Section C, paragraph C.4.1.3.3. MS8/CLIN 0005AC will be funded in the amount of \$49,985.52.

MS9 - CLIN 0005AD is established for Demonstration #4 as described in Section C, paragraphs C.5.4 through C.5.4.4. MS9/CLIN 0005AD will be funded in the amount of \$59,982.63.

MS10 - CLIN 0005AE is established for Demonstration #5 as described in Section C, paragraphs C.5.5 through C.5.5.4. MS10/CLIN 0005AE will be funded in the amount of \$79,976.83.

MS11 - CLIN 0005AF is established for the submittal of Technical Report #4 as described in Section C, paragraphs C.4.1.3.4. MS11/CLIN 0005AF will be funded in the amount of \$49,985.49.

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\*\*\* END OF NARRATIVE B0001 \*\*\*

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## SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
C-1	52.204-4003 (TACOM)	START OF WORK MEETING	SEP/2013

The contractor shall hold a start of work meeting at its facility, unless some other location is designated in the contract, within 30 days after contract award. The Start of Work Meeting is to assure a clear and mutual understanding of the contract terms, conditions, line items, technical requirements and sequence of events needed for successful execution of the subject contract effort. The contractor shall participate with Government to arrange a schedule and agenda for the meeting.

The contractor shall at a minimum invite the Government Contracting Officer's Representative (COR), Contract Specialist, and Administrative Contracting Officer (ACO). All Government invitees shall be given at least 14 days advance notice of the time, date, and location of the start of work meeting. The preferred method of notification is by email. The contractor shall provide the Government with minutes of the Start of Work Meeting within 7 days after the meeting is held.

[End of Clause]

C-2	52.237-4000 (TACOM)	CONTRACTOR MANPOWER REPORTING (CMR)	FEB/2013
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The Office of the Assistant Secretary of the Army (Manpower & Reserve Affairs) operates and maintains a secure Army data collection site where the contractor will report ALL contractor labor hours (including subcontractor labor hours) required for performance of services provided under this contract via secure data collection site. The contractor is required to completely fill in all required data fields in the format using the following web address: <https://cmra.army.mil>. The required information includes the following:

- (1) Contracting Office, Contracting Officer, Contracting Officer's Technical Representative;
- (2) Contract number, including task and delivery order number;
- (3) Beginning and ending dates covered by reporting period;
- (4) Contractor name, address, phone number, e-mail address, identity of contractor employee entering data;
- (5) Direct labor hours (including sub-contractors);
- (6) Direct labor dollars paid this reporting period (including sub-contractors);
- (7) Total payments (including sub-contractors);
- (8) Predominant Federal Service Code (FSC) reflecting services provided by contractor (and separate predominant FSC for each sub-contractor if different);
- (9) Data collection cost;
- (10) Organizational title associated with the Unit Identification Code (UIC) for the Army Requiring Activity (the Army Requiring Activity is responsible for providing the contractor with its UIC for the purposes of reporting this information);
- (11) Locations where contractor and sub-contractors perform the work (specified by zip code in the United States and nearest city, country, when in an overseas location, using standardized nomenclature provided on website);
- (12) Presence of deployment or contingency contract language; and
- (13) Number of contractor and sub-contractor employees deployed in theater this reporting period (by country).

Reporting inputs will be for the labor executed during the period of performance during each Government fiscal year (FY), which runs October 1 through September 30. While inputs may be reported any time during the FY, all data shall be reported no later than October 31 of each calendar year, beginning with 2013. Contractors may direct questions to the help desk at : <https://cmra.army.mil>.

[End of Clause]

## STATEMENT OF WORK

C.1. Scope

**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

C.1.1 The Contractor shall develop a fully-functional prototype of the Vehicle Stability Enhancement System (VSS+ system), for which the proof-of-concept was developed in the Phase I Small Business Innovative Research (SBIR) Contract W56HZV-12-C-0224, and demonstrate its performance on a manned or unmanned vehicle operating in Army-relevant conditions.

## C.2. Background

C.2.1 TARDECs Ground Vehicle Robotics (GVR) mission is to provide transition-ready, cost-effective, and innovative robotics and control system solutions for manned and unmanned ground vehicles, driven by War Fighter Requirements.

C.2.2 A DoD study shows that rollovers represent approximately 42 percent of recorded mishaps and are the category resulting in the greatest loss in vehicle damage and casualties. The main cause for such rollovers is terrain, and this cannot be addressed by existing vehicle stabilization systems.

C.2.3 This Phase II SBIR will continue the Phase I effort, which developed a proof-of-concept of a driver alert and vehicle control system for rollover avoidance (VSS+ system) using low-cost, look-ahead terrain characterization. A fully-functional prototype of the VSS+ system will be developed and its performance will be demonstrated on a manned or unmanned vehicle operating in Army-relevant conditions. Long term (Phase III), this system is intended to be integrated onto multiple military vehicles that will be used for the Autonomous Mobility Appliqu'e9 System (AMAS) program.

## C.3. Tasks

C.3.1 The Contractor shall develop a fully-functional prototype of the VSS+ system for which the proof-of-concept was developed in Phase I, and demonstrate its performance on a manned or unmanned vehicle operating in Army-relevant conditions as described in Proposal Number A2-5556.

C.3.1.1 As minimum characteristics and performance capabilities, the system shall provide a 2-second (threshold) / 3-second (objective), look-ahead sensing time to detect edge, curb, terrain inclination, terrain roughness, potholes, and ditches, and provide warning and/or control for rollover prevention. At the completion of the project, the Contractor shall perform a final demonstration to Government personnel. At a minimum, the system shall perform off-road at speeds up to 40 km/h.

C.3.1.2 The overall architecture of the VSS+ system shall be based on Phase I development, i.e. shall be composed of two high-level modules: an Inertial Sensing and Computation Module (ICM) and a Terrain Sensing Module (TSM). The system shall use available automotive sensors for off-road terrain characterization.

C.3.1.3 The Contractor shall develop both an integrated software/hardware version of the VSS+ system, and a software-only version of the VSS+ system.

C.3.2 The technical objectives to be accomplished by the Contractor during the period of performance shall include the following:

C.3.2.1 Development of an ANVEL-based predictive stability engine:

C.3.2.1.1 The Contractor shall develop a numerical predictive stability engine, based on an embedded version of the ANVEL multi-body dynamics simulation engine. This numerical model shall form the core of the VSS+ system predictive stability engine during on-line operation. The VSS+ system shall be flexible, user friendly, and easy to integrate with a wide range of vehicles as follows. The Contractor shall develop a user-friendly graphical user interface (GUI) that will allow end-users to quickly and easily specify a target vehicles configuration and parameters. Also, the Contractor shall build a library of Army vehicles that contain nominal vehicle configuration and parameter data to simplify the VSS+ system integration task for the vast majority of applications by allowing the user to select a vehicle of interest, and configuration and parameter data would be automatically provided. This library shall be based on publicly available vehicle data and shall be included in the deliverables.

C.3.2.2 Validation and testing of an algorithm for terrain friction estimation:

C.3.2.2.1 The Contractor shall use a vehicle platform approved by the Government to collect experimental data relating vehicle deceleration to brake-line pressure, master cylinder pressure, brake pedal position, and/or other braking effort-related signals that are typically available on the vehicle Controller Area Network (CAN) bus. Based on analysis of the experimental studies performed under this task, the Contractor shall identify a robust algorithm configuration, and integrate the algorithm into the VSS+ system codebase on the Inertial Sensing and Computation Module (ICM). The result from this task shall be a validated, integrated algorithm for on-line, tire-road friction estimation.

C.3.2.3 Integration of terrain friction estimation algorithm with VSS+ vision sensing system:

C.3.2.3.1 The Contractor shall develop methods for integrating terrain analysis data from the VSS+ monocular vision system (part of the TSM) with the terrain friction estimation algorithm described in Task C.3.2.2. This is intended to develop a VSS+ system that can intelligently trigger terrain friction updates based on visually-detected changes in road surface conditions, and thereby adapt to changing road conditions. The system shall trigger the friction estimation algorithm to update its estimate of the tire-road friction

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coefficient when changes in road conditions are detected, such as due to the onset of rain or snow, or transition from a paved road to a dirt road.

C.3.2.4 Development, validation, and testing of an algorithm for center of gravity (CG) height estimation:

C.3.2.4.1 The Contractor shall develop methods for on-line estimation of vehicle CG height for two distinct use cases. The first algorithmic approach will estimate vehicle CG height statically, at vehicle startup, by independently raising/lowering the vehicle suspension and measuring the force required to drive each suspension actuator. This approach will only be applied to vehicles that possess the ability to independently raise-lower their suspension actuators, and measure or estimate the force at each actuator. The second algorithmic approach shall estimate vehicle CG height dynamically, at vehicle startup, as the driver leads the vehicle through a scripted start-up trajectory consisting of a sinusoidal or similarly simple input trajectory at low to moderate speeds. During execution of this trajectory, telemetry shall be collected related to the vehicles roll angle, roll rate, lateral acceleration, steering position, and steering rate. This data will be compared to the output of a bank of numerical models that are embedded with various CG height parameter estimates, and the model that best explains the telemetry data shall be selected thereby identifying the best CG height estimate.

C.3.2.5 Integration and testing of VSS+ system on a vehicle:

C.3.2.5.1 This task shall result in integration and testing of all VSS+ system hardware and software on a (Kawasaki Mule) vehicle. Testing of the complete, integrated VSS+ system shall be performed on road and off- road test sites. The Contractor shall develop a comprehensive test plan IAW CDRL A004 to measure system performance. The output of this task will be experimental demonstration and performance characterization of the complete VSS+ system operating on an Army relevant vehicle in both on-road and off-road conditions.

C.3.2.6 Development of software-only version of VSS+ system:

C.3.2.6.1 The Contractor shall develop a software-only version of VSS+ system for integration in target vehicle platforms that possess necessary sensing, computational, and communication hardware to enable a high level of system performance. The key differences for the software-only VSS+ system implementation will be driven by the sensor performance specifications and software interfaces that are available on target vehicle(s). The Contractor shall assume that target vehicles will be equipped with a CAN interface, and sensor and computational capabilities used in the AMAS program. In this task, with support from TARDEC personnel, the Contractor shall identify a target vehicle(s) of interest for eventual software-only VSS+ system integration. The Contractor shall develop software interfaces to enable seamless communication between the VSS+ system software and the target vehicle software architecture.

C.4 Deliverables/Performance

C.4.1 Data: Refer to the CDRL/DID number listed in Section J of the Contract.

C.4.1.1 Data Item A001 - The Contractor shall prepare and submit a monthly Contractor's Progress Status and Management Report, as described in CDRL Item A001.

C.4.1.2 Data Item A002 - The Contractor shall prepare and submit a Research and Development (R&D) Project Summary at the end of the contract, as described in CDRL Item A002.

C.4.1.3 Data Item A003 - The Contractor shall prepare and submit four draft and final technical reports addressing all the technical information concerning the VSS+ system, IAW CDRL Item A003.

C.4.1.3.1 Technical Report #1 shall describe the approach to CG height estimation including performance analysis on simulated data analytical description of the ANVEL-based predictive stability engine.

C.4.1.3.2 Technical Report #2 shall describe the approach to integrated vision/terrain friction estimation system including performance analysis on simulated data.

C.4.1.3.3 Technical Report #3 shall describe the software architecture and interface specifications for software-only version of the VSS+ system, to include a technical aspect of system performance.

C.4.1.3.4 Technical Report #4 shall be comprehensive of the entire development and shall include the following:

- A detailed set of system requirements
- An analytical description of both the final hardware/software and software-only VSS+ systems, and a technical assessment of system performance
- A system conceptual design document, software design document, and hardware design document including CAD models
- A system integration document
- A set of documents detailing VSS+ system test results, depicted numerically and qualitatively, and overall performance
- Documentation and analysis of all experimental test results
- Documentation of all VSS+ prototype system designs, software, and schematics

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- Identification of patentable concepts or technologies related to the project
- Technical publication on system component and performance
- A video(s) showing aspects of VSS+ system for demonstration and marketing purposes.

C.4.1.4 Data Item A004 The Contractor shall prepare and submit a comprehensive test plan IAW CDRL A004. A comprehensive test plan shall be developed in order to evaluate the system components and the overall performance of the system, at a range of vehicle speeds, loads, terrain surface types, environmental conditions, and maneuvers that are representative for the requirements expressed at C.3.1.1. This test plan shall be used during Demonstration #5 (C.5.5) to demonstrate and characterize the performance of the system in both on-road and off-road conditions.

C.4.1.5 Data Item A005 The Contractor shall prepare and submit meeting minutes IAW CDRL A005. The meeting minutes shall capture the essence of Contractor meetings with the COR such as goals, issues, conclusions, and subsequent steps.

#### C.4.2 Hardware

C.4.2.1 The Contractor shall deliver the following:

1) One experimentally tested hardware/software version of the VSS+ system including the sensors integrated during the project, the data library of Army vehicles built during development, and instructions for implementation and use.

2) One software only version of the VSS+ system, as described in Task C.3.2.6 including the data library of Army vehicles built during development, and instructions for implementation and use.

#### C.5 Demonstrations

C 5.1 Demonstration #1: Demonstration of an initial version of user-friendly GUI for the ANVEL-based predictive stability engine.

C.5.1.1 Location: This demonstration shall be performed at TARDEC.

C.5.1.2 Description: A preliminary user-friendly graphical user interface (GUI) that allows end-users to quickly and easily specify a target vehicle's configuration and parameters shall be demonstrated.

C.5.1.3 Procedure: The software shall be installed on a laptop and/or desktop computer and demonstrated to TARDEC personnel. As part of the demonstration, instructions on the GUI's use shall be conveyed. The TARDEC personnel shall be able to experiment with configuring vehicles.

C.5.1.4 Expected Results: After training, the TARDEC representative(s) shall be able to configure a vehicle within two (2) hours. TARDEC feedback on how to improve the GUI shall be documented in the subsequent monthly report, IAW Data Item A001.

C.5.2 Demonstration #2: Demonstration of software for an ANVEL-based predictive stability engine with a user-friendly GUI; Demonstration of the ability to rapidly configure two distinct vehicles of interest, and then accurately predict vehicle stability in real time.

C.5.2.1 Location: This demonstration shall be performed at TARDEC.

C.5.2.2 Description: A numerical predictive stability engine based on an embedded version of the ANVEL multi-body dynamics simulation engine shall be demonstrated together with a refined version of the user-friendly GUI in Demonstration #1. This activity shall demonstrate the fast, flexible, user friendly predictive stability engine that was developed based on ANVEL technology.

C.5.2.3 Procedure: The software shall be installed on a laptop and/or desktop computer and demonstrated to TARDEC personnel. As part of the demonstration, instructions on the software's use shall be conveyed. The TARDEC representative(s) shall be able to configure two different vehicle models and perform simulations using them.

C.5.2.4 Expected Results: After training, the TARDEC representative(s) shall be able to fully configure a vehicle within one (1) hour. The second expected result is that the results computed from ANVEL-based predictive stability engine, when compared to either i) experimental results, or ii) computed results from a very high-fidelity model/simulation (e.g. Adams), shall be within 20% of those "truth" values. The third expected result is that the time required to perform a simulation shall be measured at five (5) times faster than real-time on a desktop PC.

C.5.3 Demonstration #3: Experimental demonstration of algorithms for vehicle CG height estimation, terrain friction estimation, and integrated vision/friction estimation. This includes modifications to the Kawasaki Mule to enable individual control of the brakes at each wheel, as well as installation of the sensor suite. Demonstration of the ability to estimate both CG height and terrain friction level to within 20% of their true values on two distinct terrain types (e.g. asphalt and dirt), and also of the ability to intelligently trigger the terrain friction estimation algorithm based on visual detection of changing road surface conditions. This Demonstration shall be performed on post-processed experimental data collected with an Army-relevant vehicle approved by the Government.

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C.5.3.1 Location: These tests shall be performed at the Contractor's test site and at the Contractor's Vehicle Lab in Saline, MI, as subsequently described in the Procedure.

C.5.3.2 Description: The modified Kawasaki Mule shall be used to experimentally demonstrate the vehicle CG height estimation, terrain friction estimation, and integrated vision/friction estimation algorithms that were developed. In addition, the modifications and capabilities of the Kawasaki Mule shall also be demonstrated.

C.5.3.3 Procedure:

C.5.3.3.1 To demonstrate the CG estimation algorithm, the Kawasaki Mule shall be loaded in two different ways on both flat and sloped terrain and driven at speeds and yaw rates relevant to CG height estimation. This demonstration shall be performed at the Contractor's test site.

C.5.3.3.2 To demonstrate the terrain friction estimation capabilities, the Kawasaki Mule shall be driven on two or more terrains (e.g., asphalt, dirt, sand, wet grass) at prescribed speeds within the required range. The actual terrain friction properties shall be obtained with a ground-truth measure that shall be collected by manually dragging a sled with a known load at a constant rate, and measuring the required drawbar force with a spring scale. This demonstration shall be performed at the Contractor's test site.

C.5.3.3.3 The integrated vision/friction estimation algorithms shall be demonstrated on terrain having two or more types of surfaces (e.g. asphalt and dirt, wet and dry). Here, post-processed experimental data collected with an Army-relevant vehicle approved by the Government, shall be used to demonstrate this capability. This demonstration shall be performed at the Contractor's test site.

C.5.3.3.4 A demonstration shall be provided of how the Kawasaki Mule has been modified for this project. In particular, the hydraulic system in which the braking to each wheel can be independently controlled shall be shown. This demonstration shall be performed at the Contractor's Vehicle Lab.

C.5.3.4 Expected Results: The first expected result is that the CG height and friction coefficients shall be within 20% of their actual values. The second expected result is that the system on the vehicle shall demonstrate the ability to intelligently trigger the terrain friction estimation algorithm based on visual detection of changing road within three (3) seconds of change of road conditions, with 80% accuracy.

C.5.4 Demonstration #4: Experimental demonstration of a software-only version of the VSS+ system. The software-only VSS+ shall be integrated into the test vehicle. Demonstration of VSS+ performance shall be conducted in an outdoor environment on two distinct terrain types (e.g. asphalt, dirt).

C.5.4.1 Location: This demonstration shall be performed at a location mutually agreed to between the Contractor and the COR, that will not incur additional travel costs, location which shall be either at the Contractor's test site, or at a DoD location in Michigan.

C.5.4.2 Description: The software-only version of the VSS+ system installed in the vehicle shall be demonstrated with the sensor suite and CAN interface specific to the AMAS system.

C.5.4.3 Procedure: The vehicle equipped with the software-only VSS+ system shall be demonstrated outdoors on two different terrains (e.g. asphalt and dirt).

C.5.4.4 Expected Results: The TARDEC representative(s) shall be able to verify the satisfactory operation of the software-only VSS+ on the test vehicle.

C.5.5 Demonstration #5: Experimental demonstration of a hardware/software version of the VSS+ system. The VSS+ system shall be fully integrated into the Kawasaki Mule test vehicle and tested. Demonstration of the VSS+ system's performance shall be conducted on the vehicle operating in an outdoor environment on two distinct terrain types (e.g. asphalt and dirt).

C.5.5.1 Location: This demonstration shall be performed at the Contractor's test site in Saline, MI.

C.5.5.2 Description: This demonstration shall show the capabilities of the complete, integrated VSS+ system in a relevant environment.

C.5.5.3 Procedure: The procedure shall follow a comprehensive test plan developed by the Contractor, IAW Data Item A004. This demonstration shall be performed on road and off road test sites in Saline, MI.

C.5.5.4 Expected Results: Vehicle stability shall be able to be predicted with at least 90% accuracy on the test vehicle when tested under various terrain, speed, and loading conditions following the test plan IAW Data Item A004.

C.6 Meetings

C.6.1 Start-of-Work

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**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

C.6.1.1 The Contractor shall conduct a start of work meeting with the Contracting Officers Representative (COR) within 30 days of contract award. The meeting shall take place at TARDEC, at a time mutually agreed to between the Contractor and the COR. At this meeting, the Contractor shall present the plans, schedule, deliverables, and resources to accomplish the scope of this project that is consistent with this Statement of Work.

C.6.2 Program Management Review Meetings

C.6.2.1 The Contractor shall conduct a Program Management Review meeting every 12 months throughout the duration of this contract via teleconference. The Contractor shall discuss the problems encountered and the measures taken to solve these problems and demonstrate progress towards accomplishing the statement of work. The Contractor shall record and submit meeting minutes IAW CDRL A005.

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

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## SECTION D - PACKAGING AND MARKING

	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
D-1	52.247-4016 (TACOM)	HEAT TREATMENT AND MARKING OF WOOD PACKAGING MATERIALS	AUG/2005

Boxes/pallets and any wood used as inner packaging made of non-manufactured wood shall be heat-treated. All non-manufactured wood used in packaging shall be heat treated to a core temperature of 56 degrees Celsius for a minimum of 30 minutes. The box/pallet manufacturer and the manufacturer of wood used as inner packaging shall be affiliated with an inspection agency accredited by the board of review of the American Lumber Standard Committee. The box/pallet manufacturer and the manufacturer of wood used as inner packaging shall ensure traceability to the original source of heat treatment.

Marking. Each box/pallet shall be marked to show the conformance to the International Plant Protection Convention Standard. The quality mark shall be placed on both ends of the outer packaging, between the end cleats or end battens; on two sides of the pallet. Foreign manufacturers shall have the heat treatment of non-manufactured wood products verified in accordance with their National Plant Protection Organization's compliance program. In addition, wood used as dunnage for blocking and bracing shall be ordered with ALSC certified marking for dunnage or the markings may be applied locally at two foot intervals.

[End of Clause]

## D.1 PACKAGING &amp; PACKING

D.1.1 The contractor shall package and pack all items deliverable under this contract in accordance with standard commercial practice to ensure arrival at destination without damage or loss.

## D.2 MARKING

D.2.1 Technical Data Marking: The contractor shall ensure that all technical data, deliverable under this contract, is identified by (1) CONTRACT NUMBER; (2) CONTRACTOR NAME AND ADDRESS; and, where applicable (3) THE NAME AND ADDRESS OF THE SUBCONTRACTOR WHO GENERATED THE DATA.

D.2.2 Materials and Hardware Marking: The contractor shall mark or tag all materials and hardware required to be delivered (if any) under this contract with the following information:

1. TACOM CONTRACT NUMBER
2. CONTRACTOR'S NAME
3. CONTRACTOR'S ADDRESS
4. A DESCRIPTION OF MATERIAL/HARDWARE:

\*\*\* END OF NARRATIVE D0001 \*\*\*

**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

SECTION E - INSPECTION AND ACCEPTANCE

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

<http://farsite.hill.af.mil/VFFARA.HTM> or <http://farsite.hill.af.mil/VDFARA.HTM> or <http://farsite.hill.af.mil/VFAFARA.HTM>

If the clause requires additional or unique information, then that information is provided immediately after the clause title.

	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
E-1	52.246-9	INSPECTION OF RESEARCH AND DEVELOPMENT (SHORT FORM)	APR/1984
E-2	(52.246-4009) (TACOM)	INSPECTION AND ACCEPTANCE POINTS: DESTINATION	FEB/1995

Inspection and acceptance of supplies offered under this purchase order shall take place as specified here. Inspection: DESTINATION. Acceptance: DESTINATION.

[End of Clause]

E.1 INSPECTION & ACCEPTANCE POINT

E.1.1 Inspection and acceptance of all deliverables under this contract shall be made at DESTINATION by the Contracting Officer or his duly authorized representative. The determination that the deliverables are complete and conform to the requirements of the contract will be made by the Contracting Officer's Representative (COR), to assure the work and the results thereof are in accordance with the terms of the contract.

\*\*\* END OF NARRATIVE E0001 \*\*\*

**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

SECTION F - DELIVERIES OR PERFORMANCE

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

<http://farsite.hill.af.mil/VFFARA.HTM> or <http://farsite.hill.af.mil/VDFARA.HTM> or <http://farsite.hill.af.mil/VFAFARA.HTM>

If the clause requires additional or unique information, then that information is provided immediately after the clause title.

	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
F-1	52.242-15	STOP-WORK ORDER (AUG 1989) -- ALTERNATE I (APR 1984)	APR/1984
F-2	52.247-34	F.O.B. DESTINATION	NOV/1991
F-3	52.247-55	F.O.B. POINT FOR DELIVERY OF GOVERNMENT-FURNISHED PROPERTY	JUN/2003
F-4	252.211-7007	REPORTING OF GOVERNMENT-FURNISHED PROPERTY	AUG/2012

F.1 PERIOD OF PERFORMANCE

F.1.1 All effort required under this contract, including delivery of the final technical report, shall be completed within twenty-four (24) months after contract award date.

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: Cristian Balas (RDTA-R, MS 264)  
6501 E. 11 Mile Rd.  
Warren, MI 48397-5000

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

**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

SECTION G - CONTRACT ADMINISTRATION DATA

LINE	PRON/ AMS CD/ MIPR/ <u>GFEBs ATA</u>	OBLG <u>STAT</u>	JO NO/ <u>ACCT ASSIGN</u>	<u>ACRN</u>	OBLIGATED <u>AMOUNT</u>
0001AA	R33SB042R3	1	R.0008576.1.1	AA	\$ 239,930.52
0001AB	R33SB042R3	1	R.0008576.1.1	AA	\$ 49,985.52
0001AC	R33SB042R3	1	R.0008576.1.1	AA	\$ 59,982.63
0001AD	R33SB042R3	1	R.0008576.1.1	AA	\$ 49,985.52
0001AE	R33SB042R3	2	R.0008576.1.1	AA	\$ 49,985.52
<b>TOTAL</b>					<b>\$ 449,869.71</b>

<u>ACRN</u>	<u>ACCOUNTING CLASSIFICATION</u>	OBLIGATED <u>AMOUNT</u>
AA	021 201320142040      A60FL 665502M40RL03      2550 L035124237 R.0008576.1.1	021001 \$ 449,869.71
<b>TOTAL</b>		<b>\$ 449,869.71</b>

<u>LINE</u> <u>ITEM</u>	<u>ACRN</u>	<u>EDI/SFIS ACCOUNTING CLASSIFICATION</u>	OBLIGATED <u>AMOUNT</u>
0001AA	AA	021 201320142040      A60FL 665502M40RL03      2550 L035124237 R.0008576.1.1	021001
0001AB	AA	021 201320142040      A60FL 665502M40RL03      2550 L035124237 R.0008576.1.1	021001
0001AC	AA	021 201320142040      A60FL 665502M40RL03      2550 L035124237 R.0008576.1.1	021001
0001AD	AA	021 201320142040      A60FL 665502M40RL03      2550 L035124237 R.0008576.1.1	021001
0001AE	AA	021 201320142040      A60FL 665502M40RL03      2550 L035124237 R.0008576.1.1	021001

<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
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G-1	252.232-7006      WIDE AREA WORKFLOW PAYMENT INSTRUCTIONS	MAY/2013
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(a) Definitions. As used in this clause--

"Department of Defense Activity Address Code (DoDAAC)" is a six position code that uniquely identifies a unit, activity, or organization.

"Document type" means the type of payment request or receiving report available for creation in Wide Area WorkFlow (WAWF).

"Local processing office (LPO)" is the office responsible for payment certification when payment certification is done external to the entitlement system.

(b) Electronic invoicing. The WAWF system is the method to electronically process vendor payment requests and receiving reports, as authorized by DFARS 252.232-7003, Electronic Submission of Payment Requests and Receiving Reports.

(c) WAWF access. To access WAWF, the Contractor shall--

(1) Have a designated electronic business point of contact in the System for Award Management at <https://www.acquisition.gov>; and

(2) Be registered to use WAWF at <https://wawf.eb.mil/> following the step-by-step procedures for self-registration available at this Web site.

(d) WAWF training. The Contractor should follow the training instructions of the WAWF Web-Based Training Course and use the Practice Training Site before submitting payment requests through WAWF. Both can be accessed by selecting the "Web Based Training" link on the WAWF home page at <https://wawf.eb.mil/>.

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**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

(e) WAWF methods of document submission. Document submissions may be via Web entry, Electronic Data Interchange, or File Transfer Protocol.

(f) WAWF payment instructions. The Contractor must use the following information when submitting payment requests and receiving reports in WAWF for this contract/order:

(1) Document type. The Contractor shall use the following document type(s):

Combo Invoice

(2) Inspection/acceptance location. The Contractor shall select the following inspection/acceptance location(s) in WAWF, as specified by the contracting officer.

W91ATL

(3) Document routing. The Contractor shall use the information in the Routing Data Table below only to fill in applicable fields in WAWF when creating payment requests and receiving reports in the system.

Routing Data Table\*

Field Name in WAWF	Data to be entered in WAWF
Pay Official DoDAAC	HQ0337
Issue By DoDAAC	W56HZV
Admin DoDAAC	S2305A
Inspect By DoDAAC	W91ATL
Ship To Code	W91ATL
Ship From Code	N/A
Mark For Code	N/A
Service Approver (DoDAAC)	W91ATL
Service Acceptor (DoDAAC)	W91ATL
Accept at Other DoDAAC	N/A
LPO DoDAAC	N/A
DCAA Auditor DoDAAC	N/A
Other DoDAAC(s)	N/A

(4) Payment request and supporting documentation. The Contractor shall ensure a payment request includes appropriate contract line item and subline item descriptions of the work performed or supplies delivered, unit price/cost per unit, fee (if applicable), and all relevant back-up documentation, as defined in DFARS Appendix F, (e.g. timesheets) in support of each payment request.

(5) WAWF email notifications. The Contractor shall enter the email address identified below in the "Send Additional Email Notifications" field of WAWF once a document is submitted in the system.

COR Mr. Cristian Balas; E-MAIL: cristian.t.balas.civ@mail.mil

(g) WAWF point of contact. (1) The Contractor may obtain clarification regarding invoicing in WAWF from the following contracting activity's WAWF point of contact.

ACO Mr. Mark Carver; E-MAIL: mark.carver@dcma.mil

(2) For technical WAWF help, contact the WAWF helpdesk at 866-618-5988.

(End of clause)

Communications on technical matters pertaining to the contract shall be direct between the contractor and the Contracting Officer Representative (COR). Communications for the COR shall be addressed to:

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**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

Name: Cristian Balas

E-mail: cristian.t.balas.civ@mail.mil

The Administrative Contracting Officer's (ACO) name and email address are also provided if known at this time:

ACO: Mark Carver

E-mail: mark.carver@dcma.mil

Please see the appointment letters prepared at time of contract award for functions the Technical Representative and ACO will perform on this contract.

[End of Clause]

G-3            252.204-0005            PAYMENT INSTRUCTIONS FOR THE DEFENSE FINANCE AND ACCOUNTING SERVICE            SEP/2009  
(DFARS PGI)            (DFAS) - Line Item Specific: by Cancellation Date

The payment office shall make payment using the ACRN with the earliest cancellation date first, exhausting all funds in that ACRN before disbursing funds from the next. In the event there is more than one ACRN associated with the same cancellation date, the payment amount shall be disbursed from each ACRN with the same cancellation date in the same proportion as the amount of funding obligated for each ACRN with the same cancellation date.

[End of Clause]

G-4            52.227-4004            RELEASE OF INFORMATION            OCT/2012  
(TACOM)

The contractor shall ensure that he complies with the requirements of Chapter 5, page 22, paragraph 5-48, of AR 360-1, The Army Public Affairs Program, dated 15 Sep 2000, prior to contemplated release of any procurement information. Approval of the Contracting Officer is required prior to release of any such information. AR 360-1 may be found at

[www.asaie.army.mil/Public/IE/Toolbox/documents/r360\\_1.pdf](http://www.asaie.army.mil/Public/IE/Toolbox/documents/r360_1.pdf)

[End of Clause]

G-5            52.232-4087            PAYMENT UNDER WIDE AREA WORKFLOW (ACC WARREN)            AUG/2012

To obtain payment, WAWF requires the contractor to input/indicate the various DoDAAC (Department of Defense Activity Address Code) codes that apply to the acquisition. These codes can be found on the cover page of contracts/orders as described below.

The document type the contractor shall use is as follows:

- "Combo" is entered if the award is for supplies or supplies and services are being delivered.
- "2in1" is entered if the award is strictly for services being provided/delivered.

USE THE FOLLOWING CODES TO ROUTE YOUR INVOICES THROUGH WAWF:

- Your firms CAGE code (found in Block 15A of SF 33; Block 17a of SF 1449; Block 14 of SF 1442; Block 7 of SF 26)
- Issue and Admin DoDAAC Code (found in Block 7 of SF 33; Block 9 of SF 1449; Block 7 of SF 1442; Block 5 of SF 26)
- Ship-To DoDAAC Code (if deliverables are involved) (found in Section B of the contract where SF 33, SF 1442, or SF 26 is the cover page; Block 15 of SF 1449)
- Accept-By DoDAAC Code: If Inspection/Acceptance is Origin, use the Admin (DCMA)DoDAAC or the DoDAAC of the inspection/acceptance office if different than the Admin DoDAAC; if Destination, use the Ship-To DoDAAC Code. If Accepted-By Other: enter the DoDAAC of the activity designated to perform acceptance.
- Payment DoDAAC Code. (found in Block 25 of SF 33; Block 18a of SF 1449; Block 27 of SF 1442; Block 12 of SF 26)

The paying office DoDAAC and mailing address is located on the first page of the award. To track the status of your invoice, click on the link, Pay status (myInvoice-External link) at the bottom of the left-hand menu.

If your paying office is Columbus, direct any payment-related questions to the Defense Finance Accounting Services (DFAS) Columbus at 1-888-756-4571. Please have your order number and invoice ready when calling about payment status. If your paying office is other than Columbus, contact your contract administrator for the customer service phone/fax numbers.

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[End of Clause]

**G.1 CONTRACTOR SPECIAL BILLING INSTRUCTIONS**

G.1.1 The contractor shall bill to the six-digit SubCLIN and ACRN in accordance with DFARS 252.232-7003, Electronic Submission of Payment Requests and Receiving Reports.

**G.2 DFAS SPECIAL PAYMENT INSTRUCTIONS**

G.2.1 DFAS will make payments as billed.

**G.3 WIDE AREA WORKFLOW (WAWF) NOTIFICATION**

G.3.1 The Contractor must notify the Contracting Officer's Representative (COR) by e-mail whenever an invoice or public voucher is placed into WAWF for processing and payment. This notification is to ensure timely processing and payment for the invoice or public voucher. The COR needs to review the invoice or public voucher before approval.

**G.4 BILLING INSTRUCTION GUIDANCE**

G.4.1 For further billing instructions, see DFARS clause 252.232-7006, Wide Area WorkFlow Payment Instructions, and DFARS clause 252.232-7003, Electronic Submission of Payment Requests.

\*\*\* END OF NARRATIVE G0001 \*\*\*

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**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

## SECTION H - SPECIAL CONTRACT REQUIREMENTS

<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
H-1	52.204-4005 REQUIRED USE OF ELECTRONIC CONTRACTING	AUG/2012

(a) All contract awards, modifications and delivery orders issued by Army Contracting Command - Warren (DTA) will be issued electronically. The contractor has the option to receive these actions either via the Worldwide Web (WWW) or Electronic Data Interchange (EDI). Many provisions/clauses that appear "by reference," meaning only clause titles and regulation site are listed; their full texts can be found at the website <http://farsite.hill.af.mil/>

(b) In order to be eligible to receive an award under this solicitation, the successful offeror must be registered with the Department of Defense (DOD) System for Award Management (SAM). The SAM registration process may be done electronically at the World Wide Web (WWW) site: <https://www.sam.gov/portal/public/SAM>. (In order to be registered to use EDI, you must use the long form for registration. Certification information, including information on the EDI 838 TPP, must be furnished to the Contracting Officer within 60 calendar days after contract award to complete networking requirements within the Government.)

(c) Worldwide Web Distribution. The contractor will receive an electronic Notice of the Award, Modification, or Delivery Order via e-mail. If you choose the WWW option, you must download the file from the appropriate Army Contracting Command - Warren webpage:

Warren: [http://contracting.tacom.army.mil/CFDATA/AWARDS/AWARD\\_RPT01.cfm](http://contracting.tacom.army.mil/CFDATA/AWARDS/AWARD_RPT01.cfm)  
Rock Island - JMTC: <https://acquisition.army.mil/asfi/>  
Red River Army Depot: <https://acquisition.army.mil/asfi/>  
Anniston Army Depot: <https://acquisition.army.mil/asfi/>

(d) Electronic Data Interchange. If you choose to receive contract awards, modifications and delivery orders through EDI, they will be delivered electronically via the Federal Acquisition Network (FACNET). Federal Standard Version 3050 of Standard X12 from the American National Standards Institute (ANSI) will be used as the format for these electronic transactions.

(1) You must complete the EDI 838 Trading Partner Profile, and must agree (i) to subcontract with a DoD certified VAN or Value Added Service (VAS) provider, or (ii) to become DoD certified as a Value Added Network (VAN). The EDI 838 Training Partner Profile is contained in the basic SAM registration form and includes portions of the registration form which are titled "Optional".

(2) You must select a VAN from the official DoD approved list. DoD Certified VANs are listed at <http://www.acq.osd.mil/dpap/ebiz/VANs.htm>. If your VAN is later removed from the official list, or if you voluntarily drop your initially selected VAN, then you must switch to a VAN that remains on the official DoD approved list. You must maintain an active account on a DoD approved VAN for the entire duration of the contract, beginning no later than the 60th day after award.

(e) Unless otherwise specified elsewhere in the contract, all data items you are required to provide under this contract must be submitted electronically. Please go to the following webpage for detailed information about submitting your offer electronically: <http://contracting.tacom.army.mil/acqinfo/ebidnotice.htm>

(f) Additional information can be obtained by sending a message to: [usarmy.detroit.acc.mbx.wrn-web-page@mail.mil](mailto:usarmy.detroit.acc.mbx.wrn-web-page@mail.mil) or by calling (586) 282-7059.

## SPECIAL PROVISIONS

H.1 SERVICES TO BE PERFORMED: Contractor personnel rendering the services under this contract are not subject, by contract terms or in the manner of its administration, to the supervision and control usually prevailing in relationships between the Government and its employees. The contractor further agrees to refrain from any activity that will make their personnel appear, in effect, to be Government Employees.

## H.2 PRIME CONTRACTOR AND PRINCIPAL INVESTIGATOR:

H.2.1 A minimum of one-half of the effort must be performed by the contractor (Quantum Signal, LLC) as the prime contractor.

H.2.2 The Principle Investigator for this contract is Dr. Mitchell Rohdes. The Principal Investigator for this contract shall not be changed and no substitution shall be made at any time during performance of this contract without prior written authorization from the Contracting Officer.

H.2.2.1 The primary employment for the Principal Investigator must be with the contractor (Quantum Signal, LLC). Primary employment means that more than one-half of the Principal Investigator's time is spent with the contractor.

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**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

## H.3 GOVERNMENT-FURNISHED PROPERTY

H.3.1 The Government may furnish, from time to time, such items of Government-owned property as deemed necessary to assist the contractor in the performance of the contract requirements.

H.3.2 Upon completion of the contract, or in the event of the termination of the contract, either partial or complete, all Government-owned property, including both property furnished to the contractor and property acquired by the contractor for the account of the Government, which will have become surplus or excess to any remaining contract requirements, shall be reported immediately by the Contractor to the Contracting Officer at the US Army Contracting Command, TACOM Contracting Center, ATTN: CCTA-ASG-C, Warren, MI 48397-5000 for redistribution, shipping instructions, release for disposal, or other actions.

H.3.3 Specific Government-Furnished Property to be provided is/are as follows:

<u>Item</u>	<u>Quantity</u>	<u>Serial No./NSN</u>	<u>Acquisition Value</u>
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NONE

\*\*\* END OF NARRATIVE H0001 \*\*\*

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**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

## SECTION I - CONTRACT CLAUSES

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

<http://farsite.hill.af.mil/VFFARA.HTM> or <http://farsite.hill.af.mil/VDFARA.HTM> or <http://farsite.hill.af.mil/VFAFARA.HTM>

If the clause requires additional or unique information, then that information is provided immediately after the clause title.

	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
I-1	52.202-1	DEFINITIONS	NOV/2013
I-2	52.203-3	GRATUITIES	APR/1984
I-3	52.203-5	COVENANT AGAINST CONTINGENT FEES	APR/1984
I-4	52.203-6	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT	SEP/2006
I-5	52.203-7	ANTI-KICKBACK PROCEDURES	OCT/2010
I-6	52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	JAN/1997
I-7	52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	JAN/1997
I-8	52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	OCT/2010
I-9	52.204-2	SECURITY REQUIREMENTS	AUG/1996
I-10	52.204-4	PRINTED OR COPIED DOUBLE-SIDED ON POSTCONSUMER FIBER CONTENT PAPER	MAY/2011
I-11	52.204-10	REPORTING EXECUTIVE COMPENSATION AND FIRST-TIER SUBCONTRACT AWARDS	JUL/2013
I-12	52.204-13	SYSTEM FOR AWARD MANAGEMENT MAINTENANCE	JUL/2013
I-13	52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	AUG/2013
I-14	52.209-9	UPDATES OF PUBLICLY AVAILABLE INFORMATION REGARDING RESPONSIBILITY MATTERS	JUL/2013
I-15	52.211-15	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS	APR/2008
I-16	52.215-2	AUDIT AND RECORDS--NEGOTIATIONS	OCT/2010
I-17	52.215-8	ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT	OCT/1997
I-18	52.215-14	INTEGRITY OF UNIT PRICES	OCT/2010
I-19	52.215-15	PENSION ADJUSTMENTS AND ASSET REVERSIONS	OCT/2010
I-20	52.215-17	WAIVER OF FACILITIES CAPITAL COST OF MONEY	OCT/1997
I-21	52.215-18	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS	JUL/2005
I-22	52.215-23	LIMITATIONS ON PASS-THROUGH CHARGES	OCT/2009
I-23	52.219-6	NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE	NOV/2011
I-24	52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS	JUL/2013
I-25	52.219-14	LIMITATIONS ON SUBCONTRACTING	NOV/2011
I-26	52.222-1	NOTICE TO THE GOVERNMENT OF LABOR DISPUTES	FEB/1997
I-27	52.222-19	CHILD LABOR--COOPERATION WITH AUTHORITIES AND REMEDIES	JAN/2014
I-28	52.222-20	WALSH-HEALEY PUBLIC CONTRACTS ACT	OCT/2010
I-29	52.222-21	PROHIBITION OF SEGREGATED FACILITIES	FEB/1999
I-30	52.222-26	EQUAL OPPORTUNITY	MAR/2007
I-31	52.222-35	EQUAL OPPORTUNITY FOR VETERANS	SEP/2010
I-32	52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	OCT/2010
I-33	52.222-37	EMPLOYMENT REPORTS ON VETERANS	SEP/2010
I-34	52.222-40	NOTIFICATION OF EMPLOYEE RIGHTS UNDER THE NATIONAL LABOR RELATIONS ACT	DEC/2010
I-35	52.222-50	COMBATING TRAFFICKING IN PERSONS	FEB/2009
I-36	52.222-54	EMPLOYMENT ELIGIBILITY VERIFICATION	AUG/2013
I-37	52.223-6	DRUG-FREE WORKPLACE	MAY/2001
I-38	52.223-18	ENCOURAGING CONTRACTOR POLICIES TO BAN TEXT MESSAGING WHILE DRIVING	AUG/2011
I-39	52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	JUN/2008
I-40	52.227-1	AUTHORIZATION AND CONSENT (DEC 2007) -- ALTERNATE I (APR 1984)	APR/1984
I-41	52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	DEC/2007
I-42	52.228-7	INSURANCE--LIABILITY TO THIRD PERSONS	MAR/1996
I-43	52.229-3	FEDERAL, STATE, AND LOCAL TAXES	FEB/2013
I-44	52.232-2	PAYMENTS UNDER FIXED-PRICE RESEARCH AND DEVELOPMENT CONTRACTS	APR/1984
I-45	52.232-8	DISCOUNTS FOR PROMPT PAYMENT	FEB/2002
I-46	52.232-11	EXTRAS	APR/1984
I-47	52.232-17	INTEREST	OCT/2010

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I-48	52.232-23	ASSIGNMENT OF CLAIMS (JAN 1986) -- ALTERNATE I (APR 1984)	APR/1984
I-49	52.232-25	PROMPT PAYMENT	JUL/2013
I-50	52.232-33	PAYMENT BY ELECTRONIC FUNDS TRANSFER--SYSTEM FOR AWARD MANAGEMENT	JUL/2013
I-51	52.232-39	UNENFORCEABILITY OF UNAUTHORIZED OBLIGATIONS	JUN/2013
I-52	52.233-1	DISPUTES	JUL/2002
I-53	52.233-3	PROTEST AFTER AWARD (AUG 1996) -- ALTERNATE I (JUN 1985)	JUN/1985
I-54	52.233-4	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM	OCT/2004
I-55	52.242-13	BANKRUPTCY	JUL/1995
I-56	52.243-1	CHANGES--FIXED PRICE (AUG 1987) -- ALTERNATE II (APR 1984)	APR/1984
I-57	52.243-2	CHANGES - COST-REIMBURSEMENT (AUG 1987) -- ALTERNATE V (APR 1984)	APR/1984
I-58	52.244-5	COMPETITION IN SUBCONTRACTING	DEC/1996
I-59	52.245-1	GOVERNMENT PROPERTY	APR/2012
I-60	52.245-9	USE AND CHARGES	APR/2012
I-61	52.246-23	LIMITATION OF LIABILITY	FEB/1997
I-62	52.247-63	PREFERENCE FOR U.S.-FLAG AIR CARRIERS	JUN/2003
I-63	52.247-68	REPORT OF SHIPMENT (REPSHIP)	FEB/2006
I-64	52.248-1	VALUE ENGINEERING	OCT/2010
I-65	52.249-2	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE)	APR/2012
I-66	52.249-9	DEFAULT (FIXED-PRICE RESEARCH AND DEVELOPMENT)	APR/1984
I-67	52.249-14	EXCUSABLE DELAYS	APR/1984
I-68	52.253-1	COMPUTER GENERATED FORMS	JAN/1991
I-69	252.201-7000	CONTRACTING OFFICER'S REPRESENTATIVE	DEC/1991
I-70	252.203-7000	REQUIREMENTS RELATING TO COMPENSATION OF FORMER DOD OFFICIALS	SEP/2011
I-71	252.203-7001	PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE-CONTRACT-RELATED FELONIES	DEC/2008
I-72	252.203-7002	REQUIREMENT TO INFORM EMPLOYEES OF WHISTLEBLOWER RIGHTS	SEP/2013
I-73	252.204-7000	DISCLOSURE OF INFORMATION	AUG/2013
I-74	252.204-7002	PAYMENT FOR SUBLINE ITEMS NOT SEPARATELY PRICED	DEC/1991
I-75	252.204-7003	CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT	APR/1992
I-76	252.204-7006	BILLING INSTRUCTIONS	OCT/2005
I-77	252.204-7012	SAFEGUARDING OF UNCLASSIFIED CONTROLLED TECHNICAL INFORMATION	NOV/2013
I-78	252.209-7004	SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY	DEC/2006
I-79	252.215-7000	PRICING ADJUSTMENTS	DEC/2012
I-80	252.215-7002	COST ESTIMATING SYSTEM REQUIREMENTS	DEC/2012
I-81	252.223-7008	PROHIBITION OF HEXAVALENT CHROMIUM	JUN/2013
I-82	252.225-7001	BUY AMERICAN AND BALANCE OF PAYMENTS PROGRAM	DEC/2012
I-83	252.225-7002	QUALIFYING COUNTRY SOURCES AS SUBCONTRACTORS	DEC/2012
I-84	252.225-7006	QUARTERLY REPORTING OF ACTUAL CONTRACT PERFORMANCE OUTSIDE THE UNITED STATES	OCT/2010
I-85	252.225-7012	PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES	FEB/2013
I-86	252.225-7013	DUTY-FREE ENTRY	OCT/2013
I-87	252.225-7015	RESTRICTION ON ACQUISITION OF HAND OR MEASURING TOOLS	JUN/2005
I-88	252.225-7016	RESTRICTION ON ACQUISITION OF BALL AND ROLLER BEARINGS	JUN/2011
I-89	252.225-7033	WAIVER OF UNITED KINGDOM LEVIES	APR/2003
I-90	252.225-7048	EXPORT-CONTROLLED ITEMS	JUN/2013
I-91	252.226-7001	UTILIZATION OF INDIAN ORGANIZATIONS, INDIAN-OWNED ECONOMIC ENTERPRISES, AND NATIVE HAWAIIAN SMALL BUSINESS CONCERNS	SEP/2004
I-92	252.227-7013	RIGHTS IN TECHNICAL DATA--NONCOMMERCIAL ITEMS	JUN/2013
I-93	252.227-7015	TECHNICAL DATA--COMMERCIAL ITEMS	JUN/2013
I-94	252.227-7016	RIGHTS IN BID OR PROPOSAL INFORMATION	JAN/2011
I-95	252.227-7018	RIGHTS IN NONCOMMERCIAL TECHNICAL DATA AND COMPUTER SOFTWARE--SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM	MAY/2013
I-96	252.227-7019	VALIDATION OF ASSERTED RESTRICTIONS--COMPUTER SOFTWARE	SEP/2011
I-97	252.227-7025	LIMITATIONS ON THE USE OR DISCLOSURE OF GOVERNMENT-FURNISHED INFORMATION MARKED WITH RESTRICTIVE LEGENDS	MAY/2013
I-98	252.227-7027	DEFERRED ORDERING OF TECHNICAL DATA OR COMPUTER SOFTWARE	APR/1988
I-99	252.227-7030	TECHNICAL DATA--WITHHOLDING OF PAYMENT	MAR/2000
I-100	252.227-7037	VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA	JUN/2013
I-101	252.227-7039	PATENTS--REPORTING OF SUBJECT INVENTIONS	APR/1990
I-102	252.231-7000	SUPPLEMENTAL COST PRINCIPLES	DEC/1991
I-103	252.232-7003	ELECTRONIC SUBMISSION OF PAYMENT REQUESTS AND RECEIVING REPORTS	JUN/2012

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	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
I-104	252.232-7010	LEVIES ON CONTRACT PAYMENTS	DEC/2006
I-105	252.235-7011	FINAL SCIENTIFIC OR TECHNICAL REPORT	NOV/2004
I-106	252.237-7010	PROHIBITION ON INTERROGATION OF DETAINEES BY CONTRACTOR PERSONNEL	JUN/2013
I-107	252.242-7005	CONTRACTOR BUSINESS SYSTEMS	FEB/2012
I-108	252.243-7001	PRICING OF CONTRACT MODIFICATIONS	DEC/1991
I-109	252.243-7002	REQUESTS FOR EQUITABLE ADJUSTMENT	DEC/2012
I-110	252.244-7000	SUBCONTRACTS FOR COMMERCIAL ITEMS	JUN/2013
I-111	252.245-7001	TAGGING, LABELING, AND MARKING OF GOVERNMENT-FURNISHED PROPERTY	APR/2012
I-112	252.245-7002	REPORTING LOSS OF GOVERNMENT PROPERTY	APR/2012
I-113	252.246-7000	MATERIAL INSPECTION AND RECEIVING REPORT	MAR/2008
I-114	252.246-7001	WARRANTY OF DATA	DEC/1991
I-115	252.247-7023	TRANSPORTATION OF SUPPLIES BY SEA	JUN/2013
I-116	252.247-7024	NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA	MAR/2000

I-117 52.222-2 PAYMENT FOR OVERTIME PREMIUMS JUL/1990

(a) The use of overtime is authorized under this contract if the overtime premium does not exceed "AMOUNT TO BE NEGOTIATED IN RFP" or the overtime premium is paid for work --

(1) Necessary to cope with emergencies such as those resulting from accidents, natural disasters, breakdowns of production equipment, or occasional production bottlenecks of a sporadic nature;

(2) By indirect-labor employees such as those performing duties in connection with administration, protection, transportation, maintenance, standby plant protection, operation of utilities, or accounting;

(3) To perform tests, industrial processes, laboratory procedures, loading or unloading of transportation conveyances, and operations in flight or afloat that are continuous in nature and cannot reasonably be interrupted or completed otherwise; or

(4) That will result in lower overall costs to the Government.

(b) Any request for estimated overtime premiums that exceeds the amount specified above shall include all estimated overtime for contract completion and shall --

(1) Identify the work unit; e.g., department or section in which the requested overtime will be used, together with present workload, staffing, and other data of the affected unit sufficient to permit the Contracting Officer to evaluate the necessity for the overtime;

(2) Demonstrate the effect that denial of the request will have on the contract delivery or performance schedule;

(3) Identify the extent to which approval of overtime would affect the performance or payments in connection with other Government contracts, together with identification of each affected contract; and

(4) Provide reasons why the required work cannot be performed by using multishift operations or by employing additional personnel.

(End of Clause)

I-118 52.227-11 PATENT RIGHTS--OWNERSHIP BY THE CONTRACTOR DEC/2007

(a) As used in this clause--

Invention means any invention or discovery that is or may be patentable or otherwise protectable under title 35 of the U.S. Code, or any variety of plant that is or may be protectable under the Plant Variety Protection Act (7 U.S.C. 2321, et seq.)

Made means--

(1) When used in relation to any invention other than a plant variety, the conception or first actual reduction to practice of the invention; or

(2) When used in relation to a plant variety, that the Contractor has at least tentatively determined that the variety has been reproduced with recognized characteristics.

Nonprofit organization means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 (26 U.S.C. 501(c)) and exempt from taxation under section 501(a) of the Internal Revenue Code (26 U.S.C. 501(a)), or any nonprofit scientific or educational organization qualified under a State nonprofit organization

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statute.

Practical application means to manufacture, in the case of a composition of product; to practice, in the case of a process or method; or to operate, in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

Subject invention means any invention of the Contractor made in the performance of work under this contract.

(b) Contractor's rights. (1) Ownership. The Contractor may retain ownership of each subject invention throughout the world in accordance with the provisions of this clause.

(2) License. (i) The Contractor shall retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, unless the Contractor fails to disclose the invention within the times specified in paragraph (c) of this clause. The Contractor's license extends to any domestic subsidiaries and affiliates within the corporate structure of which the Contractor is a part, and includes the right to grant sublicenses to the extent the Contractor was legally obligated to do so at contract award. The license is transferable only with the written approval of the agency, except when transferred to the successor of that part of the Contractor's business to which the invention pertains.

(ii) The Contractor's license may be revoked or modified by the agency to the extent necessary to achieve expeditious practical application of the subject invention in a particular country in accordance with the procedures in FAR 27.302(i)(2) and 27.304-1(f).

(c) Contractor's obligations. (1) The Contractor shall disclose in writing each subject invention to the Contracting Officer within 2 months after the inventor discloses it in writing to Contractor personnel responsible for patent matters. The disclosure shall identify the inventor(s) and this contract under which the subject invention was made. It shall be sufficiently complete in technical detail to convey a clear understanding of the subject invention. The disclosure shall also identify any publication, on sale (i.e., sale or offer for sale), or public use of the subject invention, or whether a manuscript describing the subject invention has been submitted for publication and, if so, whether it has been accepted for publication. In addition, after disclosure to the agency, the Contractor shall promptly notify the Contracting Officer of the acceptance of any manuscript describing the subject invention for publication and any on sale or public use.

(2) The Contractor shall elect in writing whether or not to retain ownership of any subject invention by notifying the Contracting Officer within 2 years of disclosure to the agency. However, in any case where publication, on sale, or public use has initiated the 1-year statutory period during which valid patent protection can be obtained in the United States, the period for election of title may be shortened by the agency to a date that is no more than 60 days prior to the end of the statutory period.

(3) The Contractor shall file either a provisional or a nonprovisional patent application or a Plant Variety Protection Application on an elected subject invention within 1 year after election. However, in any case where a publication, on sale, or public use has initiated the 1-year statutory period during which valid patent protection can be obtained in the United States, the Contractor shall file the application prior to the end of that statutory period. If the Contractor files a provisional application, it shall file a nonprovisional application within 10 months of the filing of the provisional application. The Contractor shall file patent applications in additional countries or international patent offices within either 10 months of the first filed patent application (whether provisional or nonprovisional) or 6 months from the date permission is granted by the Commissioner of Patents to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

(4) The Contractor may request extensions of time for disclosure, election, or filing under paragraphs (c)(1), (c)(2), and (c)(3) of this clause.

(d) Government's rights--(1) Ownership. The Contractor shall assign to the agency, on written request, title to any subject invention--

(i) If the Contractor fails to disclose or elect ownership to the subject invention within the times specified in paragraph (c) of this clause, or elects not to retain ownership; provided, that the agency may request title only within 60 days after learning of the Contractor's failure to disclose or elect within the specified times.

(ii) In those countries in which the Contractor fails to file patent applications within the times specified in paragraph (c) of this clause; provided, however, that if the Contractor has filed a patent application in a country after the times specified in paragraph (c) of this clause, but prior to its receipt of the written request of the agency, the Contractor shall continue to retain ownership in that country.

(iii) In any country in which the Contractor decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceeding on, a patent on a subject invention.

(2) License. If the Contractor retains ownership of any subject invention, the Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice, or have practiced for or on its behalf, the subject invention throughout the world.

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(e) Contractor action to protect the Government's interest. (1) The Contractor shall execute or have executed and promptly deliver to the agency all instruments necessary to--

(i) Establish or confirm the rights the Government has throughout the world in those subject inventions in which the Contractor elects to retain ownership; and

(ii) Assign title to the agency when requested under paragraph (d) of this clause and to enable the Government to obtain patent protection and plant variety protection for that subject invention in any country.

(2) The Contractor shall require, by written agreement, its employees, other than clerical and nontechnical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in the Contractor's format, each subject invention in order that the Contractor can comply with the disclosure provisions of paragraph (c) of this clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. The disclosure format should require, as a minimum, the information required by paragraph (c)(1) of this clause. The Contractor shall instruct such employees, through employee agreements or other suitable educational programs, as to the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

(3) The Contractor shall notify the Contracting Officer of any decisions not to file a nonprovisional patent application, continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response or filing period required by the relevant patent office.

(4) The Contractor shall include, within the specification of any United States nonprovisional patent or plant variety protection application and any patent or plant variety protection certificate issuing thereon covering a subject invention, the following statement, "This invention was made with Government support under (identify the contract) awarded by (identify the agency). The Government has certain rights in the invention."

(f) Reporting on utilization of subject inventions. The Contractor shall submit, on request, periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining utilization of the subject invention that are being made by the Contractor or its licensees or assignees. The reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Contractor, and other data and information as the agency may reasonably specify. The Contractor also shall provide additional reports as may be requested by the agency in connection with any march-in proceeding undertaken by the agency in accordance with paragraph (h) of this clause. The Contractor also shall mark any utilization report as confidential/proprietary to help prevent inadvertent release outside the Government. As required by 35 U.S.C. 202(c)(5), the agency will not disclose that information to persons outside the Government without the Contractor's permission.

(g) Preference for United States industry. Notwithstanding any other provision of this clause, neither the Contractor nor any assignee shall grant to any person the exclusive right to use or sell any subject invention in the United States unless the person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the United States. However, in individual cases, the requirement for an agreement may be waived by the agency upon a showing by the Contractor or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States, or that under the circumstances domestic manufacture is not commercially feasible.

(h) March-in rights. The Contractor acknowledges that, with respect to any subject invention in which it has retained ownership, the agency has the right to require licensing pursuant to 35 U.S.C. 203 and 210(c), and in accordance with the procedures in 37 CFR 401.6 and any supplemental regulations of the agency in effect on the date of contract award.

(i) Special provisions for contracts with nonprofit organizations. If the Contractor is a nonprofit organization, it shall--

(1) Not assign rights to a subject invention in the United States without the written approval of the agency, except where an assignment is made to an organization that has as one of its primary functions the management of inventions, provided, that the assignee shall be subject to the same provisions as the Contractor;

(2) Share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (but through their agency if the agency deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;

(3) Use the balance of any royalties or income earned by the Contractor with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions for the support of scientific research or education; and

(4) Make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business concerns, and give a preference to a small business concern when licensing a subject invention if the Contractor determines that the small business concern has a plan or proposal for marketing the invention which, if executed, is equally as likely to bring the

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invention to practical application as any plans or proposals from applicants that are not small business concerns; provided, that the Contractor is also satisfied that the small business concern has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the Contractor.

(5) Allow the Secretary of Commerce to review the Contractor's licensing program and decisions regarding small business applicants, and negotiate changes to its licensing policies, procedures, or practices with the Secretary of Commerce when the Secretary's review discloses that the Contractor could take reasonable steps to more effectively implement the requirements of paragraph (i)(4) of this clause.

(j) Communications. N/A

(k) Subcontracts. (1) The Contractor shall include the substance of this clause, including this paragraph (k), in all subcontracts for experimental, developmental, or research work to be performed by a small business concern or nonprofit organization.

(2) The Contractor shall include in all other subcontracts for experimental, developmental, or research work the substance of the patent rights clause required by FAR Subpart 27.3.

(3) At all tiers, the patent rights clause must be modified to identify the parties as follows: references to the Government are not changed, and the subcontractor has all rights and obligations of the Contractor in the clause. The Contractor shall not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractor's subject inventions.

(4) In subcontracts, at any tier, the agency, the subcontractor, and the Contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subcontractor and the agency with respect to the matters covered by the clause; provided, however, that nothing in this paragraph is intended to confer any jurisdiction under the Contract Disputes Act in connection with proceedings under paragraph (h) of this clause.

(End of clause)

I-119

52.243-7

NOTIFICATION OF CHANGES

APR/1984

(a) Definitions. Contracting Officer, as used in this clause, does not include any representative of the Contracting Officer.

Specifically Authorized Representative (SAR), as used in this clause, means any person the Contracting Officer has so designated by written notice (a copy of which shall be provided to the Contractor) which shall refer to this subparagraph and shall be issued to the designated representative before the SAR exercises such authority.

(b) Notice. The primary purpose of this clause is to obtain prompt reporting of Government conduct that the Contractor considers to constitute a change to this contract. Except for changes identified as such in writing and signed by the Contracting Officer, the Contractor shall notify the Administrative Contracting Officer in writing promptly, within 10 calendar days from the date that the Contractor identifies any Government conduct (including actions, inactions, and written or oral communications) that the Contractor regards as a change to the contract terms and conditions. On the basis of the most accurate information available to the Contractor, the notice shall state --

(1) The date, nature, and circumstances of the conduct regarded as a change;

(2) The name, function, and activity of each Government individual and Contractor official or employee involved in or knowledgeable about such conduct;

(3) The identification of any documents and the substance of any oral communication involved in such conduct;

(4) In the instance of alleged acceleration of scheduled performance or delivery, the basis upon which it arose;

(5) The particular elements of contract performance for which the Contractor may seek an equitable adjustment under this clause, including --

(i) What contract line items have been or may be affected by the alleged change;

(ii) What labor or materials or both have been or may be added, deleted, or wasted by the alleged change;

(iii) To the extent practicable, what delay and disruption in the manner and sequence of performance and effect on continued performance have been or may be caused by the alleged change;

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(iv) What adjustments to contract price, delivery schedule, and other provisions affected by the alleged change are estimated; and

(6) The Contractors estimate of the time by which the Government must respond to the Contractors notice to minimize cost, delay or disruption of performance.

(c) Continued performance. Following submission of the notice required by paragraph (b) of this clause, the Contractor shall diligently continue performance of this contract to the maximum extent possible in accordance with its terms and conditions as construed by the Contractor, unless the notice reports a direction of the Contracting Officer or a communication from a SAR of the Contracting Officer, in either of which events the Contractor shall continue performance; provided, however, that if the Contractor regards the direction or communication as a change as described in paragraph (b) of this clause, notice shall be given in the manner provided. All directions, communications, interpretations, orders and similar actions of the SAR shall be reduced to writing promptly and copies furnished to the Contractor and to the Contracting Officer. The Contracting Officer shall promptly countermand any action which exceeds the authority of the SAR.

(d) Government response. The Contracting Officer shall promptly, within 10 calendar days after receipt of notice, respond to the notice in writing. In responding, the Contracting Officer shall either --

(1) Confirm that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance;

(2) Countermand any communication regarded as a change;

(3) Deny that the conduct of which the Contractor gave notice constitutes a change and when necessary direct the mode of further performance; or

(4) In the event the Contractors notice information is inadequate to make a decision under subparagraphs (d)(1), (2), or (3) of this clause, advise the Contractor what additional information is required, and establish the date by which it should be furnished and the date thereafter by which the Government will respond.

(e) Equitable adjustments.

(1) If the Contracting Officer confirms that Government conduct effected a change as alleged by the Contractor, and the conduct causes an increase or decrease in the Contractors cost of, or the time required for, performance of any part of the work under this contract, whether changed or not changed by such conduct, an equitable adjustment shall be made --

(i) In the contract price or delivery schedule or both; and

(ii) In such other provisions of the contract as may be affected.

(2) The contract shall be modified in writing accordingly. In the case of drawings, designs or specifications which are defective and for which the Government is responsible, the equitable adjustment shall include the cost and time extension for delay reasonably incurred by the Contractor in attempting to comply with the defective drawings, designs or specifications before the Contractor identified, or reasonably should have identified, such defect. When the cost of property made obsolete or excess as a result of a change confirmed by the Contracting Officer under this clause is included in the equitable adjustment, the Contracting Officer shall have the right to prescribe the manner of disposition of the property. The equitable adjustment shall not include increased costs or time extensions for delay resulting from the Contractors failure to provide notice or to continue performance as provided, respectively, in paragraphs (b) and (c) of this clause.

NOTE: The phrases contract price and cost wherever they appear in the clause, may be appropriately modified to apply to cost-reimbursement or incentive contracts, or to combinations thereof.

(End of Clause)

I-120

52.244-2

SUBCONTRACTS

OCT/2010

(a) Definitions. As used in this clause

Approved purchasing system means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR)

Consent to subcontract means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

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Subcontract means any contract, as defined in FAR Subpart 2.1, entered into by a subcontractor to furnish supplies or services for performance of the prime contract or a subcontract. It includes, but is not limited to, purchase orders, and changes and modifications to purchase orders.

(b) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modifications or unpriced delivery orders), and only if required in accordance with paragraph (c) or (d) or this clause.

(c) If the contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

(1) Is of the cost-reimbursement, time-and-materials, or labor-hour type; or

(2) Is fixed-price and exceeds

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the national Aeronautics and Space Administration, the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of the contract; or

(ii) For contracts awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the simplified acquisition threshold or 5 percent of the total estimated cost of the contract.

(d) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts: N/A

(e)(1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (b), (c), or (d) of this clause, including the following information:

(i) A description of the supplies or services to be subcontracted.

(ii) Identification of the type of subcontract to be used.

(iii) Identification of the proposed subcontractor.

(iv) The proposed subcontract price.

(v) The subcontractor's current, complete, and accurate certified cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions.

(vi) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.

(vii) A negotiation memorandum reflecting --

(A) The principal elements of the subcontract price negotiations;

(B) The most significant considerations controlling establishment of initial or revised prices;

(C) The reason certified cost or pricing data were or were not required;

(D) The extent, if any, to which the Contractor did not rely on the subcontractor's certified cost or pricing data in determining the price objective and in negotiating the final price;

(E) The extent to which it was recognized in the negotiation that the subcontractor's certified cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and the subcontractor; and the effect of any such defective data on the total price negotiated;

(F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and

(G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.

(2) The Contractor is not required to notify the Contracting Officer in advance of entering into any subcontract for which consent is not required under paragraph (c), (d), or (e) or this clause.

(f) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor

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approval of the Contractor's purchasing system shall constitute a determination --

- (1) Of the acceptability of any subcontract terms or conditions;
- (2) Of the allowability of any cost under this contract; or
- (3) To relieve the Contractor of any responsibility for performing this contract.

(g) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of-cost basis, and any fee payable under cost-reimbursement type subcontracts shall not exceed the fee limitations in FAR 15.404-4(c)(4)(i).

(h) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement from the Government.

(i) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.i

(j) Paragraphs (c) and (e) of this clause do not apply to the following subcontracts, which were evaluated during negotiations: N/A

(End of clause)

I-121            252.232-7007            LIMITATION OF GOVERNMENT'S OBLIGATION (MAY 2006) -- ALTERNATE I (MAY            MAY/2006  
2006)

(a) Contract line item 0001AA through 0001AZ are incrementally funded. The sum of \$489,833.30 is presently available for payment and allotted to this contract. An allotment schedule is contained in paragraph (j) of this clause.

(b) For item(s) identified in paragraph (a) of this clause, the Contractor agrees to perform up to the point at which the total amount payable by the Government, including reimbursement in the event of termination of those item(s) for the Government's convenience, approximates the total amount currently allotted to the contract. The Contractor is not authorized to continue work on those item(s) beyond that point. The Government will not be obligated in any event to reimburse the Contractor in excess of the amount allotted to the contract for those item(s) regardless of anything to the contrary in the clause entitled "Termination for Convenience of the Government." As used in this clause, the total amount payable by the Government in the event of termination of applicable contract line item(s) for convenience includes costs, profit, and estimated termination settlement costs for those item(s).

(c) Notwithstanding the dates specified in the allotment schedule in paragraph (j) of this clause, the Contractor will notify the Contracting Officer in writing at least ninety days prior to the date when, in the Contractor's best judgment, the work will reach the point at which the total amount payable by the Government, including any cost for termination for convenience, will approximate 85 percent of the total amount then allotted to the contract for performance of the applicable item(s). The notification will state (1) the estimated date when that point will be reached and (2) an estimate of additional funding, if any, needed to continue performance of applicable line items up to the next scheduled date for allotment of funds identified in paragraph (j) of this clause, or to a mutually agreed upon substitute date. The notification will also advise the Contracting Officer of the estimated amount of additional funds that will be required for the timely performance of the item(s) funded pursuant to this clause, for a subsequent period as may be specified in the allotment schedule in paragraph (j) of this clause or otherwise agreed to by the parties. If after such notification additional funds are not allotted by the date identified in the Contractor's notification, or by an agreed substitute date, the Contracting Officer will terminate any item(s) for which additional funds have not been allotted, pursuant to the clause of this contract entitled "Termination for Convenience of the Government."

(d) When additional funds are allotted for continued performance of the contract line item(s) identified in paragraph (a) of this clause, the parties will agree as to the period of contract performance which will be covered by the funds. The provisions of paragraphs (b) through (d) of this clause will apply in like manner to the additional allotted funds and agreed substitute date, and the contract will be modified accordingly.

(e) If, solely by reason of failure of the Government to allot additional funds, by the dates indicated below, in amounts sufficient for timely performance of the contract line item(s) identified in paragraph (a) of this clause, the Contractor incurs additional costs or is delayed in the performance of the work under this contract and if additional funds are allotted, an equitable adjustment will be made in the price or prices (including appropriate target, billing, and ceiling prices where applicable) of the item(s), or in the time of delivery, or both. Failure to agree to any such equitable adjustment hereunder will be a dispute concerning a question of fact within the meaning of the clause entitled "Disputes."

(f) The Government may at any time prior to termination allot additional funds for the performance of the contract line item(s) identified in paragraph (a) of this clause.

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**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

(g) The termination provisions of this clause do not limit the rights of the Government under the clause entitled "Default." The provisions of this clause are limited to the work and allotment of funds for the contract line item(s) set forth in paragraph (a) of this clause. This clause no longer applies once the contract is fully funded except with regard to the rights or obligations of the parties concerning equitable adjustments negotiated under paragraphs (d) and (e) of this clause.

(h) Nothing in this clause affects the right of the Government to terminate this contract pursuant to the clause of this contract entitled "Termination for Convenience of the Government."

(i) Nothing in this clause shall be construed as authorization of voluntary services whose acceptance is otherwise prohibited under 31 U.S.C. 1342.

(j) The parties contemplate that the Government will allot funds to this contract in accordance with the funding schedule in Section B of this contract.

(End of clause)

\* To be inserted after negotiation.

I-122            52.215-19            NOTIFICATION OF OWNERSHIP CHANGES            OCT/1997

(a) The Contractor shall make the following notifications in writing:

(1) When the Contractor becomes aware that a change in its ownership has occurred, or is certain to occur, that could result in changes in the valuation of its capitalized assets in the accounting records, the Contractor shall notify the Administrative Contracting Officer (ACO) within 30 days.

(2) The Contractor shall also notify the ACO within 30 days whenever changes to asset valuations or any other cost changes have occurred or are certain to occur as a result of a change in ownership.

(b) The Contractor shall --

(1) Maintain current, accurate, and complete inventory records of assets and their costs;

(2) Provide the ACO or designated representative ready access to the records upon request;

(3) Ensure that all individual and grouped assets, their capitalized values, accumulated depreciation or amortization, and remaining useful lives are identified accurately before and after each of the Contractor's ownership changes; and

(4) Retain and continue to maintain depreciation and amortization schedules based on the asset records maintained before each Contractor ownership change.

(c) The Contractor shall include the substance of this clause in all subcontracts under this contract that meet the applicability requirement of FAR 15.408(k).

(End of Clause)

I-123            52.219-28            POST-AWARD SMALL BUSINESS PROGRAM REREPRESENTATION            JUL/2013

(a) Definitions. As used in this clause--

"Long-term contract" means a contract of more than five years in duration, including options. However, the term does not include contracts that exceed five years in duration because the period of performance has been extended for a cumulative period not to exceed six months under the clause at 52.217-8, Option to Extend Services, or other appropriate authority.

"Small business concern" means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR part 121 and the size standard in paragraph (c) of this clause. Such a concern is "not dominant in its field of operation" when it does not exercise a controlling or major influence on a national basis in a kind of business activity in which a number of business concerns are primarily engaged. In determining whether dominance exists, consideration shall be given to all appropriate factors, including volume of

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business, number of employees, financial resources, competitive status or position, ownership or control of materials, processes, patents, license agreements, facilities, sales territory, and nature of business activity.

(b) If the Contractor represented that it was a small business concern prior to award of this contract, the Contractor shall rerepresent its size status according to paragraph (e) of this clause or, if applicable, paragraph (g) of this clause, upon the occurrence of any of the following:

(1) Within 30 days after execution of a novation agreement or within 30 days after modification of the contract to include this clause, if the novation agreement was executed prior to inclusion of this clause in the contract.

(2) Within 30 days after a merger or acquisition that does not require a novation or within 30 days after modification of the contract to include this clause, if the merger or acquisition occurred prior to inclusion of this clause in the contract.

(3) For long-term contracts

(i) Within 60 to 120 days prior to the end of the fifth year of the contract; and

(ii) Within 60 to 120 days prior to the date specified in the contract for exercising any option thereafter.

(c) The Contractor shall rerepresent its size status in accordance with the size standard in effect at the time of this rerepresentation that corresponds to the North American Industry Classification System (NAICS) code assigned to this contract. The small business size standard corresponding to this NAICS code can be found at <http://www.sba.gov/content/table-small-business-size-standards>

(d) The small business size standard for a Contractor providing a product which it does not manufacture itself, for a contract other than a construction or service contract, is 500 employees.

(e) Except as provided in paragraph (g) of this clause, the Contractor shall make the representation required by paragraph (b) of this clause by validating or updating all its representations in the Representations and Certifications section of the System for Award Management (SAM) and its other data in SAM, as necessary, to ensure that they reflect the Contractor's current status. The Contractor shall notify the contracting office in writing within the timeframes specified in paragraph (b) of this clause that the data have been validated or updated, and provide the date of the validation or update.

(f) If the Contractor represented that it was other than a small business concern prior to award of this contract, the Contractor may, but is not required to, take the actions required by paragraphs (e) or (g) of this clause.

(g) If the Contractor does not have representations and certifications in SAM, or does not have a representation in SAM for the NAICS code applicable to this contract, the Contractor is required to complete the following rerepresentation and submit it to the contracting office, along with the contract number and the date on which the rerepresentation was completed:

The Contractor represents that it  is,  is not a small business concern under NAICS Code 541712 assigned to contract number W56HZV-14-C-0052. [Contractor to sign and date and insert authorized signer's name and title].

(End of clause)

I-124                      52.223-3                      HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA                      JAN/1997

(a) Hazardous material, as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material	Identification No.
(If none, insert None)	

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(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be

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delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered nonresponsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations (including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to --

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with subparagraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

(End of Clause)

I-125            52.223-11            OZONE-DEPLETING SUBSTANCES            MAY/2001

(a) Definition. Ozone-depleting substance, as used in this clause, means any substance the Environmental Protection Agency designates in 40 CFR Part 82 as--

(1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or

(2) Class II, including, but not limited to hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j (b), (c), and (d) and 40 CFR Part 82, Subpart E, as follows:

Warning

Contains (or manufactured with, if applicable) \*N/A, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

\* The Contractor shall insert the name of the substance(s).

(End of Clause)

I-126            52.252-2            CLAUSES INCORPORATED BY REFERENCE            FEB/1998

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

**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

<http://www.acq.osd.mil/dpap/dars/far.html> or <http://www.acq.osd.mil/dpap/dars/index.htm> or <http://farsite.hill.af.mil/VFAFARA.HTM>

(End of Clause)

I-127                    52.252-6                    AUTHORIZED DEVIATIONS IN CLAUSES                    APR/1984

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of (DEVIATION) after the date of the clause.

(b) The use in this solicitation or contract of any DoD FAR SUPPLEMENT (48 CFR 2) clause with an authorized deviation is indicated by the addition of (DEVIATION) after the name of the regulation.

(End of Clause)

I-128                    252.223-7001                    HAZARD WARNING LABELS                    DEC/1991

(a) Hazardous material, as used in this clause, is defined in the Hazardous Material Identification and Material Safety Data clause of this contract.

(b) The Contractor shall label the item package (unit container) of any hazardous material to be delivered under this contract in accordance with the Hazard Communication Standard (29 CFR 1910.1200 et seq). The Standard requires that the hazard warning label conform to the requirements of the standard unless the material is otherwise subject to the labeling requirements of one of the following statutes:

- (1) Federal Insecticide, Fungicide and Rodenticide Act;
- (2) Federal Food, Drug and Cosmetics Act;
- (3) Consumer Product Safety Act;
- (4) Federal Hazardous Substances Act; or
- (5) Federal Alcohol Administration Act.

(c) The Offeror shall list which hazardous material listed in the Hazardous Material Identification and Material Safety Data clause of this contract will be labeled in accordance with one of the Acts in paragraphs (b)(1) through (5) of this clause instead of the Hazard Communication Standard. Any hazardous material not listed will be interpreted to mean that a label is required in accordance with the Hazard Communication Standard.

MATERIAL (If None, Insert None.)	ACT
_____	_____
_____	_____
_____	_____

(d) The apparently successful Offeror agrees to submit, before award, a copy of the hazard warning label for all hazardous materials not listed in paragraph (c) of this clause. The Offeror shall submit the label with the Material Safety Data Sheet being furnished under the Hazardous Material Identification and Material Safety Data clause of this contract.

(e) The Contractor shall also comply with MIL-STD-129, Marking for Shipment and Storage (including revisions adopted during the term of this contract).

(End of clause)

I-129                    52.204-4009                    MANDATORY USE OF CONTRACTOR TO GOVERNMENT ELECTRONIC COMMUNICATION                    MAR/2005

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**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

(a) All references in the contract to the submission of written documentation shall mean electronic submission. All electronic submissions shall be in the formats and media described in the website:

<http://contracting.tacom.army.mil/acqinfo/ebidnotice.htm>

(b) This shall include all written unclassified communications between the Government and the Contractor except contract awards and contract modifications which shall be posted on the internet. Return receipt shall be used if a commercial application is available. Classified information shall be handled in full accordance with the appropriate security requirements.

(c) In order to be contractually binding, all Government communications requiring a Contracting Officer signature must be sent from the Contracting Officer's e-mail address. The Contractor shall designate the personnel with signature authority who can contractually bind the contractor. All binding contractor communication shall be sent from this contractor e-mail address(es).

(d) Upon award, the Contractor shall provide the Contracting Officer with a list of e-mail addresses for all administrative and technical personnel assigned to this contract.

(e) Unless exempted by the Procuring Contracting Officer in writing, all unclassified written communication after contract award shall be transmitted electronically.

[End of Clause]

The clauses below are incorporated by reference with the same force and effect as if they were given in full text. The full text of a clause may be accessed electronically at the following web address:

<http://farsite.hill.af.mil/VFFARA.HTM>

<u>Regulatory Cite</u>	<u>Title</u>
252.227-7017 JUN/1995	IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS
252.227-7028 JUN/1995	TECHNICAL DATA OR COMPUTER SOFTWARE PREVIOUSLY DELIVERED TO THE GOVERNMENT

\*\*\* END OF NARRATIVE I0001 \*\*\*

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MOD/AMD

**Name of Offeror or Contractor:** QUANTUM SIGNAL, L.L.C.

## 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	29-JAN-2014	005	
Attachment 0001	INSTRUCTIONS FOR COMPLETING SF 298	29-JAN-2014	001	

CONTRACT DATA REQUIREMENT LIST  
Form Approval OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either of these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed immediately below on line E.

A. CONTRACT LINE ITEM NO.: 0002  
B. EXHIBIT : A  
C. CATEGORY.....: Reports  
D. SYSTEM/ITEM.....: VSS+: A NEXT-GENERATION PREDICTIVE VEHICLE STABILITY SYSTEM  
E. CONTRACT/PR NO.....: W56HZV-14-C-0052  
F. CONTRACTOR.....: Quantum Signal, LLC

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1. DATA ITEM NO.....: A001  
2. TITLE OF DATA ITEM: Contractor's Progress Status and Management Report  
3. SUBTITLE.....: Monthly Reports  
4. AUTHORITY :.....: DI-MGMT-80227(T) (see 16a. below)  
5. CONTRACT REFERENCE: C.4.1.1  
6. REQUIRING OFFICE..: RDTA-R/MS 264  
7. WAWF/DD250 REQ....: LT  
8. APP CODE.....: N/A  
9. DIST. STATEMENT REQUIRED: XX  
10. FREQUENCY.....: Monthly  
11. AS OF DATE.....: Date of Award  
12. DATE OF FIRST SUB: 60 DAC  
13. DATE OF SUBS. SUB:  
14. DISTRIBUTION ADDRESSEES: SUBMIT REPORTS ELECTRONICALLY TO THE E-MAIL ADDRESSES SHOWN IMMEDIATELY BELOW:

Cristian Balas, CONTRACTING OFFICER'S REPRESENTATIVE  
E-MAIL: cristian.t.balas.civ@mail.mil

Patty Roussin, CONTRACT SPECIALIST  
E-MAIL: patricia.m.roussin.civ@mail.mil

15. TOTAL:  
16. REMARKS:  
16a. DI-MGMT-80227 is tailored by deleting 10.2, 10.3(j) 10.3(k), and 10.3(l)  
17. PRICE GROUP:  
18. ESTIMATED TOTAL PRICE:

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1. DATA ITEM NO.....: A002  
2. TITLE OF DATA ITEM: Research and Development (R&D) Project Summary  
3. SUBTITLE.....: Project Summary  
4. AUTHORITY.....: DI-MISC-81612A  
5. CONTRACT REFERENCE: C.4.1.2  
6. REQUIRING OFFICE..: RDTA-R/MS 264  
7. WAWF/DD250 REQ....: DD  
8. APP CODE.....: A  
9. DIST. STATEMENT REQUIRED: XX  
10. FREQUENCY: SEE ITEM 16  
11. AS OF DATE: Date of Award

- 12. DATE OF FIRST SUB: SEE ITEM 16
- 13. DATE OF SUBS. SUB: SEE ITEM 16
- 14. DISTRIBUTION ADDRESSEES: SUBMIT REPORTS ELECTRONICALLY TO THE E-MAIL ADDRESSES SHOWN IMMEDIATELY BELOW:

Cristian Balas, CONTRACTING OFFICERS REPRESENTATIVE  
E-MAIL: cristian.t.balas.civ@mail.mil

Patty Roussin, CONTRACT SPECIALIST  
E-MAIL: patricia.m.roussin.civ@mail.mil

Mark Carver, ADMINISTRATIVE CONTRACTING OFFICER-DCMA  
E-MAIL: mark.carver@dcma.mil

15. TOTAL:

16. REMARKS:

16a. 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.

16b. 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.

16c. 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 report 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).

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE:

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- 1. DATA ITEM NO. ....: A003
- 2. TITLE OF DATA ITEM: SCIENTIFIC AND TECHNICAL REPORT
- 3. SUBTITLE .....: DRAFT/FINAL TECHNICAL REPORT
- 4. AUTHORITY .....: DI-MISC-80711A(T) (see 16a. below)
- 5. CONTRACT REFERENCE: C.4.1.3
- 6. REQUIRING OFFICE...: RDTA-R/MS 264
- 7. WAWF/DD250 REQ ...: DD
- 8. APP CODE .....: A
- 9. DIST. STATEMENT REQUIRED: XX
- 10. FREQUENCY: SEE ITEM 16
- 11. AS OF DATE: Date of Award
- 12. DATE OF FIRST SUB: SEE ITEM 16
- 13. DATE OF SUBS. SUB: SEE ITEM 16
- 14. DISTRIBUTION ADDRESSEES: SUBMIT REPORTS ELECTRONICALLY TO THE E-MAIL ADDRESSES SHOWN IMMEDIATELY BELOW:

Cristian Balas, CONTRACTING OFFICER'S REPRESENTATIVE  
E-MAIL: cristian.t.balas.civ@mail.mil

Patty Roussin, CONTRACT SPECIALIST  
E-MAIL: patricia.m.roussin.civ@mail.mil

Mark Carver, ADMINISTRATIVE CONTRACTING OFFICER-DCMA  
E-MAIL: mark.carver@dcma.mil

15. TOTAL:

16. REMARKS:

16a. DI-MISC-80711A is tailored by deleting 10.2.

16b. The Draft of the Final Technical Report shall be delivered 22 months after date of contract award. The draft report shall include a completed Standard Form (SF) 298 (Report Documentation Page) as the report's cover sheet. The Government will review and respond within 30 days of receipt. The contractor shall submit the Final Technical Report (with the completed SF 298) within 30 days after

receipt of draft comments/approval.

16c. You may download the SF 298 form, from the following internet address:

<https://www.dtic.mil/dtic/forms/sf298template.doc>

Instructions for completing the SF 298 are provided in Attachment 001 to the contract.

Here are some additional instructions for completing the SF 298 form that apply when submitting reports under the SBIR Program:

For each unclassified report, the Contractor shall fill in Block 12a (Distribution/Availability Statement) of the SF 298 with one of the following statements:

- (a) Approved for public release; distribution unlimited.
- (b) Distribution authorized to U.S. Government Agencies only; contains proprietary information

Note: After reviewing the Contractor's entry in Block 12a, TARDEC has final responsibility for assigning a distribution statement. The contractor shall mark the actual report itself in accordance with the appropriate legends set forth in DFARS 252.227-7018, "RIGHTS IN NONCOMMERCIAL TECHNICAL DATA AND COMPUTER SOFTWARE -- SMALL BUSINESS INNOVATIVE RESEARCH (SBIR) PROGRAM".

Block 13 (Abstract) of the SF 298 must include the first sentence, "Report developed under SBIR contract for topic (insert topic number)." The abstract must identify the purpose of the work and briefly describe the work carried out, the finding or results, and the potential applications of the effort. Since the Department of Defense (DOD) will be publishing the abstract, it must not contain any proprietary or classified data.

Block 14 (Subject Terms) of the SF 298 must include the term "SBIR Report."

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE:

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- 1. DATA ITEM NO.....: A004
- 2. TITLE OF DATA ITEM: Engineer Design Test Plan
- 3. SUBTITLE.....: Test Plan
- 4. AUTHORITY.....: DI-MGMT-80688
- 5. CONTRACT REFERENCE: C.3.2.5.1, C.4.1.4,
- 6. REQUIRING OFFICE.: RDTA-R/MS 264
- 7. DD250 REQ.....: LT
- 8. APP CODE.....:
- 9. DIST. STATEMENT REQUIRED: D
- 10. FREQUENCY.....: Multiple
- 11. AS OF DATE.....:
- 12. DATE OF FIRST SUB: See Item 16
- 13. DATE OF SUBS. SUB:
- 14. DISTRIBUTION ADDRESSEES: SUBMIT REPORTS ELECTRONICALLY TO THE E-MAIL ADDRESSES SHOWN IMMEDIATELY BELOW:

Cristian Balas, CONTRACTING OFFICER'S REPRESENTATIVE  
E-MAIL: cristian.t.balas.civ@mail.mil

15. TOTAL:

16. REMARKS:

16a. The contractor shall submit a Test Plan for each series of tests performed under the Contract. All test plans shall be submitted to the COR for review and approval by the COR. The COR will review the test plan within fifteen (15) days after receipt and provide concurrence or comment. The test plan shall be delivered within six (6) months after contract award.

16b. Complete the reports IAW Data Item Description (DID) DI-MGMT-80688, Engineer Design Test Plan. The COR is responsible for accepting or rejecting the test plans.

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE:

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- 1. DATA ITEM NO. ....: A005
- 2. TITLE OF DATA ITEM: Report, Record of Meeting Minutes
- 3. SUBTITLE.....: Meeting Minutes
- 4. AUTHORITY.....: DI-ADMN-81505 (20 NOV 1995)
- 5. CONTRACT REFERENCE: C.4.1.5
- 6. REQUIRING OFFICE.: RDTA-R/MS 264
- 7. DD250 REQ .....: DD
- 8. APP CODE .....: N/A
- 9. DIST. STATEMENT REQUIRED:
- 10. FREQUENCY.....: After each meeting
- 11. AS OF DATE.....:
- 12. DATE OF FIRST SUB: 20 days after SOW
- 13. DATE OF SUBS. SUB: See Item 16a
- 14. DISTRIBUTION ADDRESSEES: SUBMIT REPORTS ELECTRONICALLY TO THE E-MAIL ADDRESSES SHOWN IMMEDIATELY BELOW:

Cristian Balas, CONTRACTING OFFICER'S REPRESENTATIVE  
E-MAIL: cristian.t.balas.civ@mail.mil

15. TOTAL: One copy to addressee listed in block 14.

16. REMARKS:

16a. The contractor shall submit meeting minutes to the COR within ten (10) days of the Start-of-Work meeting and all subsequent review meetings. The minutes will include, but are not limited to, the agenda, meeting content, and action items. The contractor shall submit the minutes electronically.

16b. Complete the reports IAW DI-ADMN-81505, Report, Record of Meeting Minutes. The COR is responsible for accepting or rejecting the meeting minutes.

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE:

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

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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-id@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 regarding 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 as an e-mail attachment may cause the e-mail report to be quarantined.

d. 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  
Cristian Balas, RDTA-R/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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INSTRUCTIONS FOR COMPLETING SF 298

1. REPORT DATE. Full publication date, including day, month, if available. Must cite at least the year, e.g. 30-06-1998; xx-06-1998; xxxx-1998.
2. REPORT TYPE. State the type of report, such as final, technical, interim, memorandum, master's thesis, progress, quarterly, research, special, group study, etc.
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- 5a. CONTRACT NUMBER. Enter the contract number as it appears in the report, e.g. W56HZV-08-C-0001.
- 5b. GRANT NUMBER. Enter all grant numbers (if applicable) as they appear in the report, e.g. AFOSR-82-1234.
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13. SUPPLEMENTARY NOTES. Enter information not included elsewhere such as: prepared in cooperation with; translation of; report supersedes; old edition number, etc.
14. ABSTRACT. A brief (approximately 200 words) factual summary of the most significant information.
15. SUBJECT TERMS. Key words or phrases identifying major concepts in the report.