

2. Amendment/Modification No. 08	3. Effective Date 2001JUL25	4. Requisition/Purchase Req No. SEE SCHEDULE	5. Project No. (If applicable)
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6. Issued By TACOM-ROCK ISLAND AMSTA-LC-CAC-C ROCK WOODSTOCK (309)782-7237 ROCK ISLAND IL 61299-7630  EMAIL: WOODSTOCKR@RIA.ARMY.MIL	Code W52H09	7. Administered By (If other than Item 6) DCM BIRMINGHAM BURGER PHILLIPS CENTER 1910 3RD AVE NORTH ROOM 201 BIRMINGHAM AL 35203-2376	Code S0101A
		SCD A PAS NONE ADP PT HQ0338	

8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code)  PEI ELECTRONICS INC 110 WYNN DRIVE HUNTSVILLE AL 35807-0929  TYPE BUSINESS: Other Small Business Performing in U.S.	<input type="checkbox"/>	9A. Amendment Of Solicitation No.
	<input type="checkbox"/>	9B. Dated (See Item 11)
	<input checked="" type="checkbox"/>	10A. Modification Of Contract/Order No. DAAE20-98-G-0004/0030
	<input type="checkbox"/>	10B. Dated (See Item 13) 2000SEP25
Code 24290	Facility Code	

**11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS**

The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers  is extended,  is not extended.

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

12. Accounting And Appropriation Data (If required)  
SEE SECTION G

**13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS**

KIND MOD CODE: G

It Modifies The Contract/Order No. As Described In Item 14.

<input type="checkbox"/>	A. This Change Order is Issued Pursuant To: The Contract/Order No. In Item 10A.	The Changes Set Forth In Item 14 Are Made In
<input type="checkbox"/>	B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b).	
<input checked="" type="checkbox"/>	C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of: 43 103(a)	
<input type="checkbox"/>	D. Other (Specify type of modification and authority)	

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

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

SEE SECOND PAGE FOR DESCRIPTION

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

15A. Name And Title Of Signer (Type or print)	16A. Name And Title Of Contracting Officer (Type or print) SUZANNE C. YACKLEY YACKLEYS@RIA.ARMY.MIL (309)782-1466		
15B. Contractor/Offeror  (Signature of person authorized to sign)	15C. Date Signed	16B. United States Of America  By _____ /SIGNED/ (Signature of Contracting Officer)	16C. Date Signed

**Name of Offeror or Contractor:** PEI ELECTRONICS INC

SECTION A - SUPPLEMENTAL INFORMATION

1. This modification is issued for Systems Technical Support (STS) for the Direct Support Electrical Systems Test Set (DSESTS) on a Cost Plus Fixed Fee Basis. In accordance with the methodology used in negotiated agreement reached on 22 September, additional sub Contract Line Items ( sub CLINs) are added in order to accomodate additional tasks that fall within the scope of the BRADLEY Common CLIN 0006AA specified as follows:

- a. CLIN 0006AB - Program authority to meet program requirements on DSESTS BRADS Interface Device (BID).
- b. Allocation of CLIN fee including the additional tasks follows the methodology established by the original award of the BRADLEY Common CLIN are specified below:

STS Year One

CLIN	NOMENCLATURE	COST	COM	FEE	CLIN TOTAL
0006AC	BELRF Test Program Set	\$124,808.08	\$573.27	\$11,112.65	\$136,494
0006AD	BFISTS DSESTS	\$16,588.77	\$76.19	\$1,477.04	\$18,142
0006AE	Common DECA	\$150,873.54	\$693.00	\$13,433.46	\$165,000
0006AF	CIV / GAU	\$225,853.12	\$1,037.40	\$20,109.48	\$247,000
0006AG	GPIA	\$18,744.89	\$86.10	\$1,669.01	\$20,500
0006AH	A2ODS Applique	\$152,905.31	\$702.33	\$13,614.36	\$167,222
0006AJ	STRIKER	\$49,490.18	\$227.32	\$4,406.50	\$54,124
0006AK	BRADS Legacy	\$1,463,016.18	\$6,720.00	\$130,263.82	\$1,600,000

2. Based on the specified actions, the value of this Delivery Order is increased by \$2,408,482.00 from \$15,708,185.45 to \$18,116,667.45.

All other terms and conditions remain the same.

3. The following Scope Of Work will govern contractor tasks associated with CLIN 0006AC BELRF Test Program Set:

Statement of Work  
Bradley A3 Bradley Eyesafe LASER Rangefinder  
Test Program Set

C.1.0 General. This Statement of Work describes the non-recurring engineering efforts required for the development of a Bradley A3 Eyesafe LASER Rangefinder (BELRF) test capability. This capability will be integrated into the Test Program Set (TPS) for the Improved Bradley Acquisition System (IBAS) Target Acquisition System (TAS) which utilizes the DSESTS General Purpose Interface Assembly (GPIA) in a stand alone mode. The following DSESTS hardware is required:

- GPIA
- Common Functions Module (CFM)
- HTI Functions Module (HFM)
- Portable Display (EL or Color)
- General Purpose Electro-optic Head (GPEOH)
- Test Cable Assemblies

C.2.0 Design and Development Engineering - The Contractor shall develop a capability to verify BELRF fire and return performance. This capability shall be integrated into the current IBAS TAS TPS. All potential safety issues shall be addressed and required safeguards implemented.

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C.2.1 Test Approach - In order to provide capability to perform the required tests, the GPEOH will be augmented by the addition of an Active Module for LASER testing. This active module is a non-developmental item for this task. The most cost-effective approach for providing power to the BELRF is to utilize the IBAS BELRF Power Supply Assembly (BELRF PSA) rather than design a BELRF PSA Emulator. This will require placing a BELRF PSA in the DS Shop for use in testing the IBAS TAS.

C.2.2 Cables - No new cable design is anticipated. This TPS will utilize the cable designed for testing of the Bradley A3 IBAS TAS.

C.3.0 Prototype Hardware - The Contractor shall develop one (1) set of prototype hardware to be utilized for TPS integration and product verification. The prototype hardware shall consist of Contractor developed hardware and Government Furnished Equipment.

C.3.1 Contractor Developed Hardware - The Contractor shall upgrade the GPEOH by the addition of an Active Module for LASER testing. This active module is a non-developmental item for this task.

C.3.2 Government Furnished Equipment - The Government Furnished Equipment under this contract shall consist of the following:

GPIA Part Number 12934368

CFM Part Number 12933963

HFM Part Number 12979080

IBAS TAS

BELRF PSA

DSESTS test hardware available at PEI will be utilized for this purpose.

C.4.0 System Test / Qualification

C.4.1 TPS Integration and Test - The following activities shall be included in TPS integration and test:

Perform the IBAS TAS end-to-end go path test.

Verify operation of fault paths by fault insertion. This process is accomplished by generation and execution of validation test records (VTRs).

C.4.2 Validation - Validation shall be performed by the Contractor's Software Quality Assurance organization. Up to 10% of the VTRs prepared for the TPS will be performed. The Government will be invited to participate in this activity.

C.4.3 TPS Final Acceptance Testing - TPS Acceptance testing shall be conducted jointly by the Contractor and the Government. Final Acceptance testing shall consist of demonstrating successful completion of the TPS end-to end test. Successful completion is signified by displaying of the message "TAS OK" on the portable display.

C.4.4 Qualification Testing - Based upon the fact that no new hardware is being developed, no Qualification testing is required as a part of this effort.

C.6.0 Integrated Logistics Support (ILS) - The Contractor shall update to the existing logistics support package for the DSESTS to incorporate changes in IBAS TAS ILS requirements. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.1 Logistics Support Analysis (LSA) - The Contractor shall integrate Logistics Support Analysis Records (LSAR) into the existing LSAR database. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2 Technical Manuals

C.6.2.1 DSESTS Technical Manuals -The Contractor shall update the existing technical manuals for the DSESTS to incorporate required changes. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2.1 -34 Technical Manuals - The Contractor shall provide technical manual source data for incorporation into the 34 technical manuals. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.7.0 Engineering Release Record - The Contractor shall convene an Engineering Release Record (ERR) to incorporate the drawings developed as a part of this effort into the DSESTS technical data package.

4. The following Scope Of Work will govern contractor tasks associated with CLIN 0006AD BFIST DSESTS:

**Name of Offeror or Contractor:** PEI ELECTRONICS INC

Statement of Work  
Bradley BFIST Position Interface Box Test Program Set

C.1.0 General. This Statement of Work describes the non-recurring engineering efforts required for the update of the Bradley A3 DSESTS Test Program Set (TPS) for the Position Interface Box (PIB) to incorporate the changes required for testing of the BFIST PIB. The following DSESTS hardware is required:

GPIA  
Common Functions Module (CFM)  
Bradley Resource Module (BRM) (developed as a part of Bradley A3)  
Portable Display (EL or Color)  
Test Cable Assemblies; Existing Design (developed as a part of Bradley A3)

C.2.0 Design and Development Engineering.

C.2.1 Baseline The baseline for this effort is the A3 PIB TPS. The Contractor shall modify that TPS incorporate the changes required for testing of the BFIST PIB.

C.2.2 Cables No new cable design is required. This TPS will utilize the cable designed for testing of the Bradley A3 PIB.

C.3.0 Government Furnished Equipment - The Government Furnished Equipment under this contract shall consist of the following:

GPIA Part Number 12934368  
CFM Part Number 12933963  
BRM Part Number 12465543  
PIB

DSESTS test hardware available at PEI will be utilized for this purpose.

C.4.0 System Test / Qualification

C.4.1 TPS Integration and Test - The following activities shall be included in TPS integration and test:  
Perform the PIB end-to-end go path test.  
Verify operation of fault paths by fault insertion. This process is accomplished by generation and execution of validation test records (VTRs).

C.4.2 Validation - Validation shall be performed by the Contractor's Software Quality Assurance organization. Up to 10% of the VTRs prepared for the TPS will be performed. The Government will be invited to participate in this activity.

C.4.3 TPS Final Acceptance Testing - TPS Acceptance testing shall be conducted jointly by the Contractor and the Government. Final Acceptance testing shall consist of demonstrating successful completion of the TPS end-to end test. Successful completion is signified by displaying of the message "PIB OK" on the portable display.

C.4.4 Qualification Testing Based upon the fact that no new hardware is being developed, no Qualification testing is required as a part of this effort.

C.6.0 Integrated Logistics Support (ILS) - The Contractor shall update to the existing logistics support package for the DSESTS to incorporate changes in PIB ILS requirements. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.1 Logistics Support Analysis (LSA) - The Contractor shall integrate Logistics Support Analysis Records (LSAR) into the existing LSAR database. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2 Technical Manuals

C.6.2.1 DSESTS Technical Manuals -The Contractor shall update the existing technical manuals for the DSESTS to incorporate required changes. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2.1 -34 Technical Manuals - The Contractor shall provide technical manual source data for incorporation into the 34 technical manuals. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

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C.7.0 Engineering Release Record - The Contractor shall convene an Engineering Release Record (ERR) to incorporate any drawing changes made as a part of this effort into the DSESTS technical data package.

5. The following Scope Of Work will govern contractor tasks associated with CLIN 0006AE COMMON DECA:

Statement of Work

Development of a Common Digital Electronics Control Assembly (CDECA) Test Program Set (TPS)

C.1.0 General. This Statement of Work describes the non-recurring engineering efforts required for the development of a Common Digital Electronics Control Assembly (CDECA) Test Program Set (TPS) which utilizes the DSESTS General Purpose Interface Assembly (GPIA) in a stand alone mode. The following DSESTS hardware is required:

GPIA

Common Functions Module (CFM)

Bradley Functions Module (BFM) (developed as a part of Bradley A3)

Portable Display (EL or Color)

Load Switching Box (LSB) (developed as a part of Bradley A3)

Test Cable Assemblies; Existing Design (developed as a part of Bradley A3)

Test Cable Assemblies; New Design

C.2.0 Design and Development Engineering.

C.2.1 Baseline - The Contractor shall develop a TPS for test and fault isolation of the Bradley CDECA. The TPS will troubleshoot to Direct Support replaceable Shop Replaceable Units (SRUs). The baseline for development of this new TPS will be the test approach developed for testing of the Bradley A3 Turret Drive Control Unit (TDCU). The new TPS shall be developed in the ATLAS programming language.

C.2.2 Cables - New cables shall be designed as defined in paragraph C.1.0. Cable design shall be in accordance with specification 24290 CHED-228.

C.3.0 Prototype Hardware - The Contractor shall develop one (1) set of prototype hardware to be utilized for TPS integration and product verification. The prototype hardware shall consist of Contractor developed hardware and Government Furnished Equipment.

C.3.1 Contractor Developed Hardware - The Contractor developed hardware for the non-recurring engineering effort under this contract shall consist of one (1) LSB and one (1) set of CDECA test cables.

C.3.2 Government Furnished Equipment - The Government Furnished Equipment under this contract shall consist of the following:

GPIA Part Number 12934368

CFM Part Number 12933963

BFM Part Number 12465543

LSB Part Number

CDECA

DSESTS test hardware available at PEI will be utilized for this purpose.

C.4.0 System Test / Qualification

C.4.1 TPS Integration and Test - The following activities shall be included in TPS integration and test:

Perform the CDECA end-to-end go path test.

Verify operation of fault paths by fault insertion. This process is accomplished by generation and execution of validation test records (VTRs).

C.4.2 Validation - Validation shall be performed by the Contractor's Software Quality Assurance organization. Up to 10% of the VTRs prepared for the TPS will be performed. The Government will be invited to participate in this activity.

C.4.3 TPS Final Acceptance Testing - TPS Acceptance testing shall be conducted jointly by the Contractor and the Government. Final Acceptance testing shall consist of demonstrating successful completion of the TPS end-to end test. Successful completion is

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signified by displaying of the message "CDECA OK" on the portable display.

C.4.4 Qualification Testing - No Qualification testing is required as a part of this effort. The cable mechanical design concept is identical to cables currently in production, which are used to support testing of fielded Bradley LRUs. This design concept has proven to be highly reliable and has previously been qualified.

C.6.0 Integrated Logistics Support (ILS) - The Contractor shall update to the existing logistics support package for the DSESTS to incorporate changes in CDECA ILS requirements. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.1 Logistics Support Analysis (LSA) - The Contractor shall integrate Logistics Support Analysis Records (LSAR) into the existing LSAR database. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2 Technical Manuals

C.6.2.1 DSESTS Technical Manuals -The Contractor shall update the existing technical manuals for the DSESTS to incorporate required changes. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2.1 -34 Technical Manuals - The Contractor shall provide technical manual source data for incorporation into the 34 technical manuals. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.7.0 Engineering Release Record - The Contractor shall convene an Engineering Release Record (ERR) to incorporate the drawings developed as a part of this effort into the DSESTS technical data package.

6. The following Scope Of Work will govern contractor tasks associated with CLIN 0006AF CIV / GAU:

Statement of Work

Bradley A3 Commander's Independent Viewer (CIV) Gimbal Assembly Unit (GAU)

Test Program Set

C.1.0 General. This Statement of Work describes the non-recurring engineering efforts required for the development of a Bradley A3 Commander's Independent Viewer (CIV) Gimbal Assembly Unit (GAU) Test Program Set (TPS) which utilizes the DSESTS General Purpose Interface Assembly (GPIA) in a stand alone mode. The following DSESTS hardware is required:

GPIA

Common Functions Module (CFM)

Bradley Resource Module (BRM) (developed as a part of Bradley A3)

Portable Display (EL or Color)

Test Cable Assemblies; New Design

C.2.0 Design and Development Engineering - The Contractor shall develop a TPS for test and fault isolation of the Bradley A3 CIV GAU. The TPS will troubleshoot to Direct Support replaceable Shop Replaceable Units (SRUs). The new TPS shall be developed in the ATLAS programming language. The Contractor is tasked to conduct this effort in two phases.

C.2.1 Phase I - Troubleshoot and Repair of the GAU in a Shop Environment - The Contractor shall develop a TPS for the CIV GAU which will be utilized in the direct support shop environment.

C.2.2 Phase II - Troubleshoot and Repair of the GAU in a DSESTS Van Environment The Contractor shall perform the Engineering analysis required to define the requirements for testing of the GAU in the DSESTS Van environment. The TPS developed as a part of Phase I will be used for this application also. This phase will address issues with respect to loading the GAU into the DSESTS Van for testing such as space required/available and GAU weight. The Contractor shall deliver a report which identifies additional requirements for testing in this environment.

C.2.3 Test Approach - In order to provide proper control of closed loop movement for the GAU, an SEU or SEU Emulator along with an SAU simulator are required. The most cost-effective approach is to utilize the CIV SEU rather than design an SEU Emulator. This will require either leaving an SEU in the GAU when it is returned for DS repair or placing an SEU in the DS Shop for use in testing the GAU. The SAU simulator is required to simulate the weight of the SAU along with providing a gyro to allow proper closed loop movement of the GAU. The Contractor will coordinate with Raytheon to make use an existing design SAU Simulator for this purpose.

C.2.4 Cables - New cables shall be designed as defined in paragraph C.1.0. Cable design shall be in accordance with specification 24290 CHED-228.

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C.3.0 Prototype Hardware - The Contractor shall develop one (1) set of prototype hardware to be utilized for TPS integration and product verification. The prototype hardware shall consist of Contractor developed hardware and Government Furnished Equipment.

C.3.1 Contractor Developed Hardware - The Contractor developed hardware for the non-recurring engineering effort under this contract shall consist of one (1) set of GAU test cables.

C.3.2 Government Furnished Equipment - The Government Furnished Equipment under this contract shall consist of the following:

GPIA Part Number 12934368

CFM Part Number 12933963

BRM Part Number 12465543

GAU

SEU

DSESTS test hardware available at PEI will be utilized for this purpose.

C.4.0 System Test / Qualification

C.4.1 TPS Integration and Test - The following activities shall be included in TPS integration and test:  
Perform the GAU end-to-end go path test.

Verify operation of fault paths by fault insertion. This process is accomplished by generation and execution of validation test records (VTRs).

C.4.2 Validation - Validation shall be performed by the Contractor's Software Quality Assurance organization. Up to 10% of the VTRs prepared for the TPS will be performed. The Government will be invited to participate in this activity.

C.4.3 TPS Final Acceptance Testing - TPS Acceptance testing shall be conducted jointly by the Contractor and the Government. Final Acceptance testing shall consist of demonstrating successful completion of the TPS end-to end test. Successful completion is signified by displaying of the message "GAU OK" on the portable display.

C.4.4 Qualification Testing - No Qualification testing is required as a part of this effort. The cable mechanical design concept is identical to cables currently in production, which are used to support testing of fielded Bradley LRUs. This design concept has proven to be highly reliable and has previously been qualified.

C.6.0 Integrated Logistics Support (ILS) - The Contractor shall update to the existing logistics support package for the DSESTS to incorporate changes in GAU ILS requirements. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.1 Logistics Support Analysis (LSA) - The Contractor shall integrate Logistics Support Analysis Records (LSAR) into the existing LSAR database. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2 Technical Manuals

C.6.2.1 DSESTS Technical Manuals -The Contractor shall update the existing technical manuals for the DSESTS to incorporate required changes. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2.1 -34 Technical Manuals - The Contractor shall provide technical manual source data for incorporation into the 34 technical manuals. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.7.0 Engineering Release Record - The Contractor shall convene an Engineering Release Record (ERR) to incorporate the drawings developed as a part of this effort into the DSESTS technical data package.

7. The following Scope Of Work will govern contractor tasks associated with CLIN 0006AG GPIA:

Statement of Work  
GPIA Test and Inspection

C.1.0 General This Statement of Work describes the efforts required for GPIA Test and Inspection.

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C.2.0                    GPIA Test and Inspection All unissued GPIAs that can be identified and are within control of PM BFVS will be forwarded the Contractor for a complete inspection and functional test. These GPIAs are to be fielded and the intent is to issue them in "Like New" condition. The Contractor is tasked to conduct this effort in two phases

C.2.1                    Phase I Test and Inspection - As a part of Phase I, the Contractor shall receive and store all Government owned GPIAs shipped to the Contractor by PM BFVS. The total quantity is estimated to be fifty (50). The Contractor shall then:

Develop and submit for PM Bradley approval an inspection procedure and criteria for the intended "Like New" condition.  
Perform the inspection on all previously received GPIAs  
Provide a report to the Government detailing the exact condition of each GPIA along with an itemized cost estimate for bring each GPIA back to the "Like New" condition. The Phase I report should be issued within 90 days of the effort start date.

C.2.1                    Phase II Repair and Repackaging - As a part of Phase II, the Contractor shall perform the actual repair and repackaging of GPIAs based upon the report delivered as a part of Phase I. Phase II will be initiated as soon as possible after completion of Phase I. The scope of Phase II will be based upon available funding. The goal will be to bring all known GPIAs to the "Like New" condition.

8. The following Scope Of Work will govern contractor tasks associated with CLIN 0006AH A2ODS APPLIQUE:

Statement of Work  
Bradley A2 ODS Applique' Test Program Set

C.1.0                    General. This Statement of Work describes the non-recurring engineering efforts required for the update of the Bradley A2 ODS DSESTS Test Program Set (TPS) for the Handstation to incorporate the changes required for testing of the A2 ODS Applique' Handstation and development of a Drivers Compass Display (DCD) Test Program Set (TPS) The following DSESTS hardware is required:

- GPIA
- Common Functions Module (CFM)
- Bradley resource Module (BRM) (developed as a part of Bradley A3)
- Operator Interface Unit (OIU)
- Portable Display (EL or Color)
- Test Cable Assemblies; New Design

C.2.0                    Design and Development Engineering.

C.2.1                    Baseline for Development

C.2.1.1 A2ODS Applique Handstation TPS

The baseline for this effort is the A2ODS Handstation TPS. The Contractor shall modify that TPS to incorporate the changes required for testing of the Applique' Handstation. The Applique' Handstation is a modified A2 ODS Handstation. The modification consists of the addition of a cursor switch. This will require the addition of a new test cable. Note: This is an OIU based TPS.

C.2.1.2 DCD TPS

The Contractor shall develop a TPS for test and fault isolation of the Bradley DCD. The TPS will troubleshoot to Direct Support Shop Replaceable Units (SRUs). This will require the design of a new test cable. The new TPS shall be developed in the ATLAS programming language.

C.2.2                    Cables - New cables shall be designed as defined in paragraph C.1.0. Cable design shall be in accordance with specification 24290 CHED-228.

C.3.0                    Prototype Hardware - The Contractor shall develop one (1) set of prototype hardware to be utilized for TPS integration and product verification. The prototype hardware shall consist of Contractor developed hardware and Government Furnished Equipment.

C.3.1                    Contractor Developed Hardware - The Contractor developed hardware for the non-recurring engineering effort under this contract shall consist of one (1) set of Handstation and DCD test cables.

C.3.2                    Government Furnished Equipment - The Government Furnished Equipment under this contract shall consist of the

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following:

GPIA Part Number 12934368

OIU

CFM Part Number 12933963

BRM Part Number 12465543

Applique' Handstation

DCD

DSESTS test hardware available at PEI will be utilized for this purpose.

C.4.0 System Test / Qualification

C.4.1 TPS Integration and Test - The following activities shall be included in TPS integration and test:

Perform the LRU end-to-end go path test.

Verify operation of fault paths by fault insertion. This process is accomplished by generation and execution of validation test records (VTRs).

C.4.2 Validation - Validation shall be performed by the Contractor's Software Quality Assurance organization. Up to 10% of the VTRs prepared for the TPS will be performed. The Government will be invited to participate in this activity.

C.4.3 TPS Final Acceptance Testing - TPS Acceptance testing shall be conducted jointly by the Contractor and the Government. Final Acceptance testing shall consist of demonstrating successful completion of the TPS end-to end test. Successful completion is signified by displaying of the message "LRU OK" on the portable display.

C.4.4 Qualification Testing - No Qualification testing is required as a part of this effort. The cable mechanical design concept is identical to cables currently in production, which are used to support testing of fielded Bradley LRUs. This design concept has proven to be highly reliable and has previously been qualified.

C.6.0 Integrated Logistics Support (ILS) - The Contractor shall update to the existing logistics support package for the DSESTS to incorporate changes required by the Applique' Handstation and DCD ILS requirements. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.1 Logistics Support Analysis (LSA) - The Contractor shall integrate Logistics Support Analysis Records (LSAR) into the existing LSAR database. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2 Technical Manuals

C.6.2.1 DSESTS Technical Manuals -The Contractor shall update the existing technical manuals for the DSESTS to incorporate required changes. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.6.2.1 -34 Technical Manuals - The Contractor shall provide technical manual source data for incorporation into the 34 technical manuals. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.7.0 Engineering Release Record - The Contractor shall convene an Engineering Release Record (ERR) to incorporate the drawings developed as a part of this effort into the DSESTS technical data package.

9. The following Scope Of Work will govern contractor tasks associated with CLIN 0006AJ STRIKER:

## Statement of Work

DSESTS Striker hardware configuration and support of the repair analysis for the Striker Remote Display Unit (RDU)

C.1.0 General This Statement of Work describes the non-recurring engineering efforts required for the formal documentation of the DSESTS Striker hardware configuration and support of the repair analysis for the Striker Remote Display Unit (RDU).

C.2.0 Design and Development Engineering.

C.2.1 Formal Documentation of the Striker only TPS Set (P/N 12993787) - The Contractor shall develop the necessary drawings to document the DSESTS Striker TPS Set. This set will be a reconfiguration of existing BFIST TPS items to create the minimum subset of hardware and software necessary to support a unit that only has Striker (no Bradleys or Bradley variants) and a GPIA. This Striker only

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TPS Set will be common with existing BFIST & Bradley test equipment to the maximum extent possible. Effort will involve the design of the specific foam insert(s) for the new transit case.

C.2.2 Striker Remote Display Unit (RDU) Repair Analysis - The Contractor shall support a repair analysis for the Striker RDU. The Contractor will support the Government and SEI in a level of repair analysis for this LRU (including a trip to the RDU vendor, IEC). If a TPS is determined to be required as a result of this analysis, a separate modification to the task order will be processed at that time adding this additional scope.

C.3.0 Integrated Logistics Support (ILS) - The Contractor shall update the existing logistics support package for the DSESTS to incorporate required changes in ILS requirements. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.3.1 Logistics Support Analysis (LSA) - The Contractor shall integrate Logistics Support Analysis Records (LSAR) into the existing LSAR database. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.3.2 Technical Manuals

C.3.2.1 DSESTS Technical Manuals -The Contractor shall update the existing technical manuals for the DSESTS to incorporate required changes. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.3.2.1 -34 Technical Manuals - The Contractor shall provide technical manual source data for incorporation into the 34 technical manuals. This will be done in accordance with the requirements of the existing DSESTS System Technical Support contract.

C.4.0 Engineering Release Record - The Contractor shall convene an Engineering Release Record (ERR) to incorporate the drawings developed as a part of this effort into the DSESTS technical data package.

10. The following Scope Of Work will govern contractor tasks associated with CLIN 0006AK BRADS LEGACY:

Statement of Work  
For Utilizing BRADS  
On Bradley "Legacy" Vehicles

1 Scope

1.1 Purpose

The purpose of this project is to accomplish replacement of the Simplified Test Equipment (STE) M1/FVS and STE Internal Combustion Engine (ICE), along with the T2SS-SE, with the BRADS on Bradley "Legacy" vehicles specifically the M2A2 Operation Desert Storm (ODS), Linebacker and BFIST configurations only. The set of tests to be created will be defined by the symptom index in the Maintenance Technical Manuals for the specified vehicles. An analysis shall be accomplished to determine which tests can be performed under guidelines as defined by the Contracting Agency. This set of tests will use only signals from the Test Connectors and the RS-232 interface connector on the Digital Electronic Control Assembly (DECA) on each vehicle.

The contractor will design/develop/integrate/test/document and deliver the executive software, test routines and hardware necessary to accomplish these tasks using Government Furnished Material (GFM) as used for the BRADS development on the A3 Bradley.

1.2 Background

Currently, on-vehicle testing for the Legacy vehicles is performed through use of the STE and STE/ICE and T2SS-SE. This testing will be replaced by the BRADS system. The test(s) will be controlled by BRADS with appropriate "hand off" to/from "paper" Technical Manuals when required.

2 Applicable Documents

2.1 Government Furnished Documents

The contractor shall develop a list of applicable documents to be provided by the government for the above-specified vehicle configurations. The government shall provide documents deemed applicable to this task as expeditiously as possible via appropriate contract means. If later versions of any applicable documents are identified during the course of this task, the contractor and the government shall jointly determine and document if any additional work shall be, or not be required as a result of the documentation update.

Required documentation to be supplied by the Government shall include, but not be limited to, the following:

- (a.) System, subsystem and component drawings provided to the government by the specific hardware/equipment manufacturers/providers to enable and verify testability.
- (b.) Technical Manuals and any other documentation defining all current manual test procedures comprising the entire suite of tests and

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repairs accomplished on the specific vehicle configurations under guidelines as specified by PM-BRADLEY and defined by the symptoms index in the Maintenance Technical Manuals for the specific vehicles.

### 3. Task Definition

The tasks to be accomplished under this project will be to

- (a.) Analyze current STE, STE ICE and T2SS-SE test procedures out of the above defined Legacy vehicles systems, subsystems and components test procedures and automate testing the Legacy vehicles utilizing BRADS;
- (b.) Provide instruction(s) via appropriate display instructions imbedded within the BRADS software directing user to return to "paper Technical Manual" for further action when necessary;
- (c.) Provide "source data" for Technical Manual update to reflect BRADS testing.

#### 3.1 Systems Engineering

The contractor shall perform test analysis to establish the requirements for the test (setup, stimulus, measurement, and pass/fail criteria), identifying the system access to pertinent signals via test connectors, and ensuring BRADS compatibility therewith. Test analyses shall be verified manually on vehicle before any implementation of automated tests to prevent any possible damage to on-board equipment and/or the test system.

This effort shall define the steps or flow of operator messages, required setup, stimulus, measurement, evaluation, and result alternatives (Remove/Replace message, next test, etc.). The tests shall make use of existing test point connectors. If test requirements cannot be met through use of existing test connectors, contractor shall document such test requirements shortfalls. Contractor shall not make use of alternate points or ancillary equipment such as simulators without prior written direction by PM Bradley.

#### 3.2 Hardware Engineering

The contractor shall perform an interface analysis to determine BRADS resource application to properly connect to the designated test connectors.

#### 3.3 Software Engineering

Integrate Legacy test(s) into the current BRADS A3 software and use the same system code.

#### 3.4 Program Management

The contractor shall establish a management program capable of monitoring performance, cost and schedule for the life of the contract. The contractor shall designate a Program Manager to manage the effort required by the contract. The contractor's program manager shall have sufficient corporate authority to direct, execute, and control all elements of this BRADS contract.

##### 3.4.1 Program Reviews (PR's)

###### 3.4.1.1 In-Process Reviews (IPR's)

In-process reviews will be held for each subsystem utilizing a "User Jury" comprised of maintainers from more than one field organization working as a team with PEI, PM-Bradley, UDLP, PM-CCAWS. The User Jury conferences will be held by telephone or other electronic media whenever possible. The personnel makeup of the User Jury will be as constant as possible over the life of the contact effort.

###### 3.4.1.2 Preliminary Design Review (PDR)

A Preliminary Design Review (PDR) shall be conducted at the contractor's facility in accordance with the program schedule. This review shall assess the consistency between the system baseline evaluation, technical data package, and test system design criteria. This review shall also assess the ability of the test system design and test strategy to meet the requirements for functional test and fault isolation.

###### 3.4.1.3 Critical Design Review (CDR)

A Critical Design Review (CDR) shall be conducted at the contractor's facility in accordance with the program schedule. This review shall evaluate the test system design to ensure that it meets system test requirements and makes effective use of all available resources.

###### 3.4.1.4 Test Readiness Review (TRR)

A Test Readiness Review (TRR) shall be held at the contractor's facility in accordance with the program schedule. This review shall assess the system readiness to be fielded.

###### 3.4.1.5 Validation/Verification (V & V)

System Validation/Verification shall consist of a cooperative effort between the User Jury and PEI, UDLP, PM-Bradley and PM-CCAWS to choose a representative sample of faults that will give an acceptable level of confidence that the tests and test equipment work correctly. This is not intended to be an all-inclusive test but a reasonable sample. The faults that are to be inserted may not damage the vehicle or cause nonreversible change to the vehicle. All parties must understand and agree to the faults selected to accomplish this V & V effort.

#### 3.4.2 Cost and Schedule Management

The contractor shall use a method of cost/schedule management consistent with the basic STS contract common CLIN activities.

### 3.5 Design Process

#### 3.5.1 Requirements Definition and Allocation

The contractor shall review test methods and procedures and capture performance and functional requirements requiring test. The requirements shall be compiled into a matrix tracking development of automated test procedures to record design data used in satisfying testing requirements.

#### 3.5.2 Systems Design

The contractor shall implement and utilize a system to achieve the objectives of paragraph 3 of this Statement of Work. A systems approach shall be applied to ensure that the required testing is accomplished by the most practical and efficient means.

#### 3.5.3 Test Planning and Procedures

The contractor shall follow an overall test planning strategy for verifying all requirements and individual test routines as developed

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for the Bradley A3.

3.5.3.1 Test Analysis Verification

The contractor shall manually verify, on appropriate vehicles, the test analysis performed.

3.5.3.2 Software Testing The contractor shall continue practices developed under the BRADS A3 project effort and ensure all software is tested and is fully operational for it's intended purposes on the BRADS.

3.5.3.3 Acceptance Testing

Acceptance testing shall consist of documenting the test verification testing results and detailing any problems encountered and the resolution thereof using same practices developed under the BRADS A3 project effort.

3.5.4 Reliability

Contractor shall maintain all aspects of required Reliability elements as currently utilized on existing concurrent Government contracts.

3.5.5 Maintainability

Contractor shall maintain all aspects of required Maintainability elements as currently utilized on existing concurrent Government contracts.

3.5.6 Safety

Contractor shall maintain all aspects of required Safety elements as currently utilized on existing concurrent Government contracts. A Safety Assessment Report for the system shall be provided by the Contractor.

3.5.7 MANPRINT/Human Factors

Contractor shall maintain all aspects of required MANPRINT/Human Factors elements as currently utilized on concurrent Government contracts.

3.6 Configuration Management

Contractor shall maintain all aspects of required Configuration Management elements as currently utilized on the BRADS A3 project.

3.7 Documentation

Contractor shall provide UDLP source information to update the "paper" Technical Manuals in contractor format.

3.8 Training

To be developed and conducted by UDLP.

3.9 Logistics

3.9.1 Technical Manuals

The contractor shall provide source data for incorporation into the vehicle technical manuals. Source data shall cover the use of BRADS for vehicle testing and will consist of text in Microsoft Word and illustrations in CGM format. The contractor shall provide source data for incorporation into the vehicle 20-level technical manuals (ODS, Linebacker and BFIST). Source data shall cover the use of BRADS for vehicle testing and will consist of text in Microsoft Word and illustrations in CGM format.

3.9.2 Support Equipment

Contractor shall maintain one set of all common, special and peculiar tools and support equipment that is required to perform test and maintenance.

4 Quality Assurance Provisions

Contractor shall maintain all aspects of required Quality Assurance Program elements as currently utilized on the BRADS A3 project.

5 Deliverable Software/Hardware

To be developed during the planning and organizing phase.

6 Schedule

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ADDENDUM

This Addendum is to provide wording to correct an inadvertent omission of PEI's intent to eliminate the Break Out Boxes (BOB's) currently required to run diagnostic and maintenance tests on the BRADS Legacy "Linebacker" vehicle configuration. All tests utilizing subject boxes will be analyzed to determine if such tests can be accomplished within the directions and guidelines of the BRADS Legacy BRADS work effort and test design.

Additionally, it is PEI's intent to establish the Bradley A2 ODS Applique-mounted turret configuration as the test design baseline and to design the Bradley Legacy BRADS tests from that configuration. This is to provide a specific configuration and documentation baseline from which all test designs shall emanate and be traceable to.

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\*\*\* END OF NARRATIVE A 011 \*\*\*

CONTINUATION SHEET

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 PIIN/SIIN DAAE20-98-G-0004/0030 MOD/AMD 08

Name of Offeror or Contractor: PEI ELECTRONICS INC

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0006AC	<p>SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS</p> <p><u>SERVICES LINE ITEM</u></p> <p>NOUN: EYESAFE LASER RANGEFINDER                      SECURITY CLASS: Unclassified                      PRON: 729203DS72 PRON AMD: 01 ACRN: AL                      AMS CD: 311028</p> <p><u>Inspection and Acceptance</u>                      INSPECTION: Origin ACCEPTANCE: Origin</p> <p><u>Deliveries or Performance</u>                      DLVR SCH PERF COMPL  <u>REL CD QUANTITY DATE</u>                      001 0 30-MAY-2002</p> <p style="text-align: right;">\$ 136,494.00</p>				\$ 136,494.00
0006AD	<p><u>SERVICES LINE ITEM</u></p> <p>NOUN: POSITION INTERFACE BOX                      SECURITY CLASS: Unclassified                      PRON: 7206F39172 PRON AMD: 01 ACRN: AM                      AMS CD: 528993</p> <p><u>Inspection and Acceptance</u>                      INSPECTION: Origin ACCEPTANCE: Origin</p> <p><u>Deliveries or Performance</u>                      DLVR SCH PERF COMPL  <u>REL CD QUANTITY DATE</u>                      001 0 31-OCT-2001</p> <p style="text-align: right;">\$ 18,142.00</p>				\$ 18,142.00
0006AE	<p><u>SERVICES LINE ITEM</u></p> <p>NOUN: COMMON DECA                      SECURITY CLASS: Unclassified                      PRON: 729205DS72 PRON AMD: 01 ACRN: AL                      AMS CD: 311028</p> <p><u>Inspection and Acceptance</u>                      INSPECTION: Origin ACCEPTANCE: Origin</p> <p><u>Deliveries or Performance</u>                      DLVR SCH PERF COMPL  <u>REL CD QUANTITY DATE</u>                      001 0 30-MAY-2002</p> <p style="text-align: right;">\$ 165,000.00</p>				\$ 165,000.00
0006AF	<p><u>SERVICES LINE ITEM</u></p> <p>NOUN: A3 COMMANDER'S INDEP VIEWER</p>				\$ 247,000.00

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Reference No. of Document Being Continued  
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Name of Offeror or Contractor: PEI ELECTRONICS INC

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT						
	SECURITY CLASS: Unclassified PRON: 729202DS72 PRON AMD: 01 ACRN: AL AMS CD: 311028  <u>Inspection and Acceptance</u> INSPECTION: Origin ACCEPTANCE: Origin  <u>Deliveries or Performance</u> DLVR SCH PERF COMPL <table border="0"> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>0</td> <td>30-MAY-2002</td> </tr> </table> \$ 247,000.00	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	0	30-MAY-2002				
<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>									
001	0	30-MAY-2002									
0006AG	<u>SERVICES LINE ITEM</u>  NOUN: GPIA TEST AND INSPECTION SECURITY CLASS: Unclassified PRON: 7206F38972 PRON AMD: 01 ACRN: AM AMS CD: 528993  <u>Inspection and Acceptance</u> INSPECTION: Origin ACCEPTANCE: Origin  <u>Deliveries or Performance</u> DLVR SCH PERF COMPL <table border="0"> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>0</td> <td>31-JAN-2002</td> </tr> </table> \$ 20,500.00	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	0	31-JAN-2002				\$ 20,500.00
<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>									
001	0	31-JAN-2002									
0006AH	<u>SERVICES LINE ITEM</u>  NOUN: APPLIQUE TEST PROGRAM SET SECURITY CLASS: Unclassified PRON: 729204DS72 PRON AMD: 01 ACRN: AL AMS CD: 311028  <u>Inspection and Acceptance</u> INSPECTION: Origin ACCEPTANCE: Origin  <u>Deliveries or Performance</u> DLVR SCH PERF COMPL <table border="0"> <tr> <td><u>REL CD</u></td> <td><u>QUANTITY</u></td> <td><u>DATE</u></td> </tr> <tr> <td>001</td> <td>0</td> <td>30-APR-2002</td> </tr> </table> \$ 167,222.00	<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>	001	0	30-APR-2002				\$ 167,222.00
<u>REL CD</u>	<u>QUANTITY</u>	<u>DATE</u>									
001	0	30-APR-2002									
0006AJ	<u>SERVICES LINE ITEM</u>  NOUN: DSESTS STRIKER CONFIG SECURITY CLASS: Unclassified PRON: 7206F39072 PRON AMD: 01 ACRN: AM AMS CD: 528993  <u>Inspection and Acceptance</u> INSPECTION: Origin ACCEPTANCE: Origin				\$ 54,124.00						



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SECTION G - CONTRACT ADMINISTRATION DATA

LINE ITEM	PRON/ AMS_CD	OBLG STAT/ ACRN JOB_ORD_NO	PRIOR AMOUNT	INCREASE/DECREASE AMOUNT	CUMULATIVE AMOUNT
0006AC	729203DS72 311028	AL 1 \$ 9ZGBDS	0.00 \$	136,494.00 \$	136,494.00
0006AD	7206F39172 528993	AM 1 \$ 0ZGBST	0.00 \$	18,142.00 \$	18,142.00
0006AE	729205DS72 311028	AL 1 \$ 9ZGBDS	0.00 \$	165,000.00 \$	165,000.00
0006AF	729202DS72 311028	AL 1 \$ 9ZGBDS	0.00 \$	247,000.00 \$	247,000.00
0006AG	7206F38972 528993	AM 1 \$ 0ZGBST	0.00 \$	20,500.00 \$	20,500.00
0006AH	729204DS72 311028	AL 1 \$ 9ZGBDS	0.00 \$	167,222.00 \$	167,222.00
0006AJ	7206F39072 528993	AM 1 \$ 0ZGBST	0.00 \$	54,124.00 \$	54,124.00
0006AK	720129DS72 311028	AC 1 \$ 0ZGBA3	0.00 \$	1,600,000.00 \$	1,600,000.00
NET CHANGE				\$ 2,408,482.00	

SERVICE NAME	NET CHANGE BY ACRN	ACCOUNTING CLASSIFICATION	ACCOUNTING STATION	INCREASE/DECREASE AMOUNT
Army	AC	21 02033000005R5R03P31102831E9 S20113	W56HZV	\$ 1,600,000.00
Army	AL	21 92033000095R5R03P311028252G S20113	W56HZV	\$ 715,716.00
Army	AM	21 02035000005R5R03P528993252G S20113	W56HZV	\$ 92,766.00
NET CHANGE				\$ 2,408,482.00

NET CHANGE FOR AWARD:	PRIOR AMOUNT OF AWARD	INCREASE/DECREASE AMOUNT	CUMULATIVE OBLIG AMT
\$ 15,708,185.45	\$ 2,408,482.00	\$ 18,116,667.45	